IEEE International NanoElectornics Conference 2010

(INEC 2010)

PROGRAM BOOK

COVER

Conference Committee

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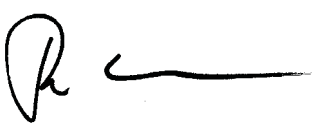
Welcome

Encouraged by the success of the 1st and 2nd IEEE International NanoElectronics Conference (INEC) held in Singapore in 2006 and Shanghai in 2008, the 3rd INEC is held in City University of Hong Kong from January 3 to 8, 2010. Extensive research on nanomaterials has unveiled many interesting and promising materials properties for novel applications in electronics, photonics, and biology. In order to benefit mankind for such discoveries, it is necessary to cross the chasm between nanomaterials and nanodevices and their applications. This effort requires a multi-disciplinary approach combining research in materials design, processing, modeling, characterization, and metrology. Commercialization of nanotechnology is also important to fuel future research. The aim of this conference is to identify the paths between fundamental research and potential electronic, photonic, and biological applications. INEC2010 provides a forum for international academics, researchers, practitioners, and students working in the areas of nanofabrication, nanoelectronics, nanophotonics, and nanobiology to discuss new developments, concepts, and practices, and to identify future research needs so that nano-research can be brought closer to its immense potential.

INEC2010 features 4 plenary and 22 invited talks by international scientists in nanofabrication, nanoelectronics, nanophotonics, and nanobiology. A special symposium on nanoscience and nanotechnology in China is held during the conference to foster further scientific exchange between scientists from Greater China and other parts of world. We are very fortunate to have 16 academicians of the Chinese Academy of Sciences, Chinese Academy of Engineering, and Academia Sinica to give presentations in this special symposium.

INEC2010 is the largest one of this growing event. We are very pleased to have received 911 contributed abstracts including 503 oral and 408 poster presentations from 35 countries and special administrative regions.

Hong Kong being a vibrant and modern city where east and west meet is very exciting. The city offers superb dining and attractions and boasts one of the most impressive skylines in the world. In addition to the technical events, I urge you to experience and enjoy our unique city.



Paul K Chu
General Chair

Conference Program Table

IEEE INEC 2010

Sunday January 3, 2010

14:00	Registration
17:00	Welcome Reception

Monday January 4, 2010

	Chan Tai Ho Hall									
9:00	Opening Ceremony									
9:20	Plenary Session I - 1									
10:05	Plenary Session I - 2									
10:50	Break									
	LT18	LT14	LT16	LT17	LT13	LT15	LT11	LT7	LT1	LT12
11:15	FC101	FC121	FC141	KS102	EC119	EC139	PC101	PC119	BC101	TC101
11:30	FC102	FC122	FC142		EC120	EC140	PC102	PC120	BC102	TC102
11:45	FC103	FC123	FC143	EC101	EC121	EC141	PC103	PC121	BC103	TC103
12:00	FC104	FC124	FC144	EC102	EC122	EC142	KS114	PC122	BC104	TC104
12:15	FC105	FC125	FC145	EC103	EC123	EC143		PC123	BC105	
12:30	Lunch									
	LT18	LT14	LT16	LT17	LT13	LT15	LT11	LT7	LT1	LT12
14:00	FC106	FC126	FC146	EC104	EC124	EC144	PC104	PC124	KS119	TC106
14:15	FC107	FC127	FC147	EC105	EC125	EC145	PC105	PC125		TC107
14:30	FC108	FC128	FC148	EC106	EC126	EC146	PC106	PC126	BC106	TC108
14:45	FC109	KS108	FC149	EC107	EC127	EC147	PC107	PC127	BC107	TC109
15:00	FC110		FC150	EC108	EC128	EC148	PC108	PC128	BC108	TC110
15:15	FC111	FC129	FC151	EC109	EC129	EC149	PC109	PC129	BC109	TC111
15:30	FC112	FC130	FC152	EC110	KS111	EC150	PC110	PC130	BC110	TC112
15:45	FC113	FC131	FC153	EC111		EC151	PC111	PC131	BC111	TC113
16:00	Break									
	LT18	LT14	LT16	LT17	LT13	LT15	LT11	LT7	LT1	LT12
16:15	FC114	FC132	FC154	EC112	EC130	EC152	KS122	PC132	BC112	TC114
16:30	FC115	FC133	FC155	EC113	EC131	EC153		PC133	BC113	TC115
16:45	FC116	FC134	FC156	KS113	EC132	EC154	PC112	PC134	BC114	TC116
17:00	FC117	FC135	FC157		EC133	EC155	PC113	PC135	BC115	TC117
17:15	KS103	FC136	FC158	EC114	EC134	EC156	PC114	PC136	BC116	TC118
17:30		FC137	FC159	EC115	EC135	EC157	PC115	PC137	BC117	TC119
17:45	FC118	FC138	FC160	EC116	EC136	EC158	PC116	PC138	BC118	TC120
18:00	FC119	FC139	FC161	EC117	EC137	EC159	PC117	PC139	BC119	TC121
18:15	FC120	FC140	FC162	EC118	EC138	EC160	PC118	PC140	BC120	TC122

Tuesday January 5, 2010

	Chan Tai Ho				
9:00	Plenary Sessio				
9:45	Plenary Sessio				
10:30	Break				
	LT18	LT14	LT16	LT17	LT13
10:45	KS206	FC215	FC229	EC201	EC215
11:00		FC216	FC230	EC202	EC216
11:15	FC201	FC217	FC231	EC203	EC217
11:30	FC202	FC218	FC232	KS221	EC218
11:45	FC203	FC219	FC233		EC219
12:00	FC204	FC220	KS218	EC204	EC220
12:15	FC205	FC221		EC205	EC221
12:30	Lunch				
	LT17				
14:00	Workshop				
14:20					
14:40					
15:00					
16:00	Break				
	LT18	LT14	LT16	LT17	LT13
16:15	FC206	KS212	FC234	EC206	EC222
16:30	FC207		FC235	EC207	EC223
16:45	FC208	FC222	FC236	EC208	EC224
17:00	FC209	FC223	FC237	EC209	EC225
17:15	FC210	FC224	FC238	EC210	KS209
17:30	FC211	FC225	FC239	EC211	
17:45	FC212	FC226	FC240	EC212	EC226
18:00	FC213	FC227	FC241	EC213	EC227
18:15	FC214	FC228	FC242	EC214	EC228

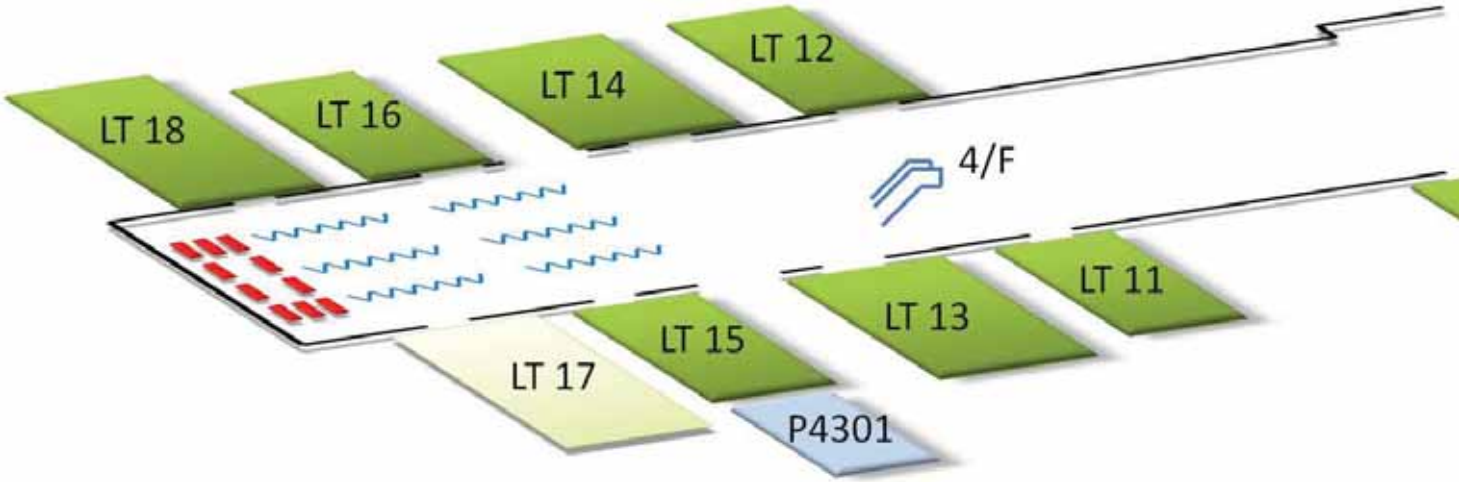
* Oral presenters have 15 minutes (12 min talk + 3 min Q&A) for regular presentations.
* Poster presenters are requested to be present at the posters during poster sessions to answer questions and responsible for mounting and removal of their posters.

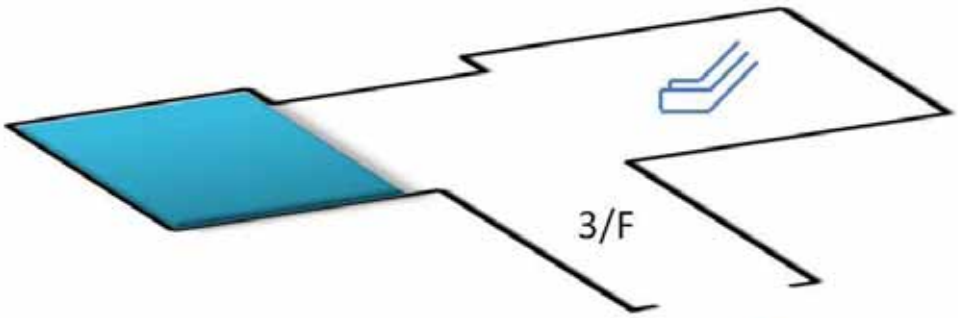
	Wednesday January 6, 2010		Thursday January 7, 2010									Friday January 8, 2010	
Hall		CT HO Hall		LT18	LT14	LT16	LT17	LT13	LT15	LT11	LT1	LT12	
n II - 1	8:30	Opening Ceremony	8:30	FC401	FC414	FC434	EC401	EC423	EC438	PC401	BC401	KS410	
			8:45	FC402	FC415	FC435	EC402	EC424	EC439	PC402	BC402		9:30 Lab Tour Team A
	8:50	KA301	9:00	FC403	FC416	FC436	KS416	EC425	EC440	PC403	BC403	TC401	
n II - 2			9:15	FC404	FC417	FC437		EC426	EC441	PC404	BC404	TC402	
	9:15	KA302	9:30	FC405	KS420	FC438	EC403	EC427	EC442	PC405	BC405	TC403	10:30 Lab Tour Team B
			9:45	FC406		FC439	EC404	EC428			BC406	TC404	
	9:40	KA303	10:00	Break									
				LT18	LT14	LT16	LT17	LT13	LT15	LT11	LT1	LT12	
	10:05	KA304	10:15	KS417	FC418	FC440	EC405	EC429	EC444	PC407	BC407	TC405	
			10:30		FC419	FC441	EC406	EC430	EC445	PC408	BC408	TC406	
LT15 LT11 LT1 LT12	10:30	Break	10:45	FC407	FC420	FC442	EC407	EC431	EC446	PC409	BC409	TC407	
EC229 PC201 BC201 TC201	10:50	KA305	11:00	FC408	FC421	FC443	EC408	EC432	EC447	PC410	KS405	TC408	
EC230 PC202 BC202 TC202			11:15	FC409	FC422	FC444	EC409	EC433	EC448	PC411		TC409	
EC231 PC203 BC203 TC203	11:15	KA306	11:30	FC410	FC423	FC445	EC410	EC434	KS404	PC412	BC410	TC410	
EC232 PC204 BC204 TC204			11:45	FC411	FC424	FC446	EC411	EC435		PC413	BC411	TC411	
EC233 PC205 BC205 TC205	11:40	KA307	12:00	FC412	FC425	FC447	EC412	EC436	EC449	KS401		TC412	
EC234 PC206 BC206 TC206			12:15	FC413	FC426	FC448	EC413		EC450			TC413	
EC235 PC207 BC207 TC207	12:05	KA308											
	12:30	Lunch	12:30	Lunch									
ATRIUM	14:00	KA309		ATRIUM									
			14:00										
	14:25	KA310											
Poster			14:20										
	14:50	KA311											
			14:40										
	15:15	KA312											
			15:00										
	15:40	Break											
	15:55	KA313	16:00	Break									
LT15 LT11 LT1 LT12				LT18	LT14	LT16	LT17	LT13	LT15	LT11	LT1	LT3	
EC236 PC208 BC208 TC208	16:20	KA314	16:15		FC427	FC449	EC414		EC451	PC414	BC414	BC423	
EC237 PC209 BC209 TC209			16:30		FC428	FC450	EC415		EC452	PC415	BC415	BC424	
EC238 KS215 BC210 TC210	16:45	KA315	16:45		KS407	FC451	EC416		EC453	PC416	BC416	BC425	
EC239 BC211 TC211			17:00			FC452	EC417		EC454	PC417	BC417	BC426	
EC240 PC210 BC212 TC212	17:10	KA316	17:15		FC429	FC453	EC418		EC455	PC418	BC418	BC427	
EC241 PC211 BC213 TC213			17:30		FC430	FC454	EC419		EC456	PC419	BC419	BC428	
EC242 PC212 BC214 TC214			17:45		FC431	FC455	EC420		EC457	PC420	BC420	BC429	
EC243 PC213 BC215 TC215	18:00	Banquet	18:00		FC432	FC456	EC421				BC421		
EC244 PC214 BC216			18:15				EC422				BC422		

Time
Venue
Coffee Break
Lunch
Important Events
Invited Talk
NanoFabrication
NanoElectronics
NanoPhotonics
NanoBiology
NanoPhysics
Workshop

IEEE International NanoElectronics Conference
January 3-8, 2010, Hong Kong ,China

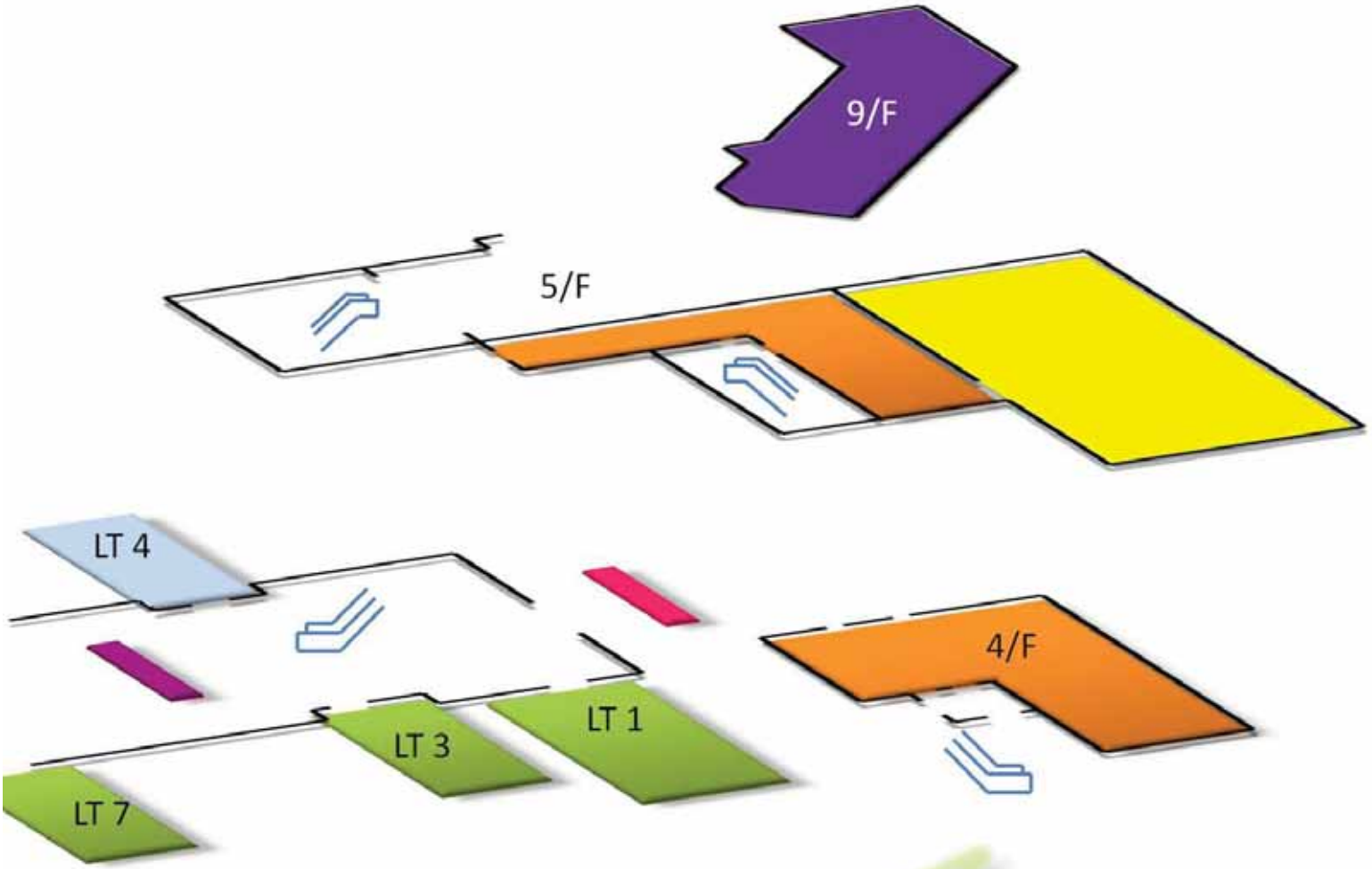
Conference Floor Plan





MTR Kowloon Tong Station

C2 exit



Pre-registration & Information Zone

Registration & Information Zone

Chan Tai Ho Hall ------ Welcome Ceremony, Plenary, Symposia

Lecture Theater

Poster Zone

Entrance to CityU Academic Building

9/F Purple Canteen

Canteen------ Welcome Cocktail and Lunch Zone

Work Shop

Exhibition Zone

Rehearsal Room

Hang Seng Bank

Stairs

Plenary Session I – IEEE INEC 2010

Chair: Kwok-Fai So, The University of Hong Kong

Date: Jan 4, 2010

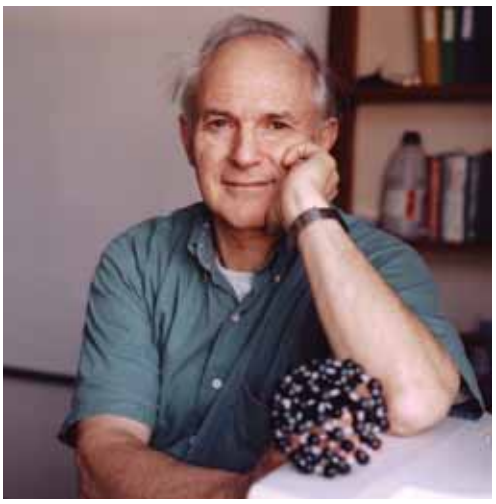
Time: 9:20-10:05 am

Venue: Chan Tai Ho Multi-Purpose Hall

Chun-Li Bai

Institute of Chemistry, Chinese Academy of Sciences, China

Formation and Structural Transition of Molecular Self-assembly on Solid Surface Investigated by STM



Date: Jan 4, 2010

Time: 10:05-10:50 am

Venue: Chan Tai Ho Multi-Purpose Hall

Sir Harold Kroto

Nobel Laureate in Chemistry

The Florida State University, Florida, USA

Mechanisms of NanoScale Self-Assembly

Plenary Session II – IEEE INEC 2010

Chair: Chi-Ming Che, The University of Hong Kong

Date: Jan 5, 2010

Time: 9:00-9:45 am

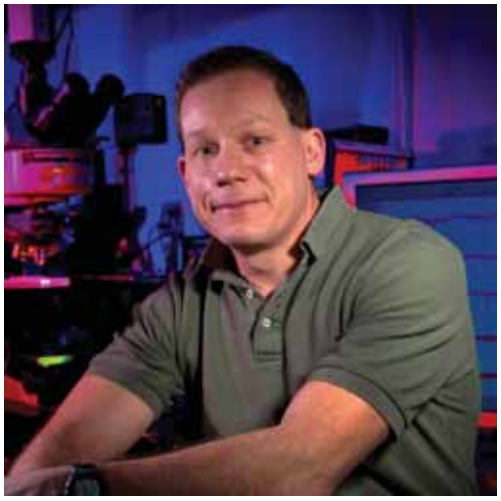
Venue: Chan Tai Ho Multi-Purpose Hall

A Paul Alivisatos

University of California at Berkeley and

Lawrence Berkeley National Laboratory, California, USA

Electrical Studies of Individual Colloidal Inorganic Nanocrystals



Date: Jan 5, 2010

Time: 9:45-10:30 am

Venue: Chan Tai Ho Multi-Purpose Hall

Charles M Lieber

Harvard University, Massachusetts, USA

Semiconductor Nanowires: A Platform for Nanoscience and Nanotechnology

Yi Cui
Stanford University, USA
Nanostructured Photon Management for High Performance Solar Cells

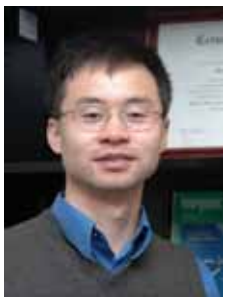
Date: Jan 4, 2010
Time:11:15-11:45
Venue: LT17

Lars Samuelson
Lund University, Sweden
Semiconductor Nanowires as a Bottom-up Approach to Realize Nanoelectronic and Nanophotonic Devices

Date: Jan 4, 2010
Time:12:00-12:30
Venue: LT11

You-Nan Xia
Washington University in St. Louis, USA
Engineering the Optical Properties of Gold Nanocages for Biomedical Applications

Date: Jan 4, 2010
Time:14:00-14:30
Venue: LT01



Song Jin
University of Wisconsin–Madison, USA
Screw Dislocation Driven Nanowire Growth and its Potential Applications

Date: Jan 4, 2010
Time:14:45-15:15
Venue: LT14

Carsten Ronning
University of Jena, Germany
Ion Beam Doping of Semiconductor Nanowires

Date: Jan 4, 2010
Time:15:30-16:00
Venue: LT13

Edward T. Yu
The University of Texas at Austin, USA
Engineering of Plasmonic Effects in Photodetectors and High-Efficiency Photovoltaics

Date: Jan 4, 2010
Time:16:15-16:45
Venue: LT11

Date: Jan 4, 2010
Time:16:45-17:15
Venue: LT17

Harry Ruda
University of Toronto, Canada
Carrier Transport in Molecular Beam Epitaxially Grown GaAs/InAs Core-Shell Nanowires

Date: Jan 4, 2010
Time:17:15-17:45
Venue: LT18

Li-Ming Dai
Case Western Reserve University, USA
Controlled Growth and Modification of Aligned Carbon Nanotubes for Multifunctional Nanocomposites and Nanodevices

Date: Jan 5, 2010
Time:10:45-11:15
Venue: LT18

Dmitri Golberg
National Institute for Material Science, Japan
Functional Boron Nitride Nanotubes

Date: Jan 5, 2010
Time:11:30-12:00
Venue: LT17

Pei-Dong Yang
University of California, Berkeley, USA
Semiconductor Nanowires for Energy Conversion

Date: Jan 5, 2010
Time:12:00-12:30
Venue: LT16

Paul S. Weiss
University of California, Los Angeles, USA
Designing, Measuring, and Controlling Molecular- and Supramolecular-Scale Properties for Molecular Devices

Date: Jan 5, 2010
Time:16:15-16:45
Venue: LT14

Federico Rosei
University of Quebec, Canada
Strategies for Controlling Nanoscale Assembly

Oliver G. Schmidt
Dresden Institute for Integrative Nanosciences, Germany
Shaped Nanomembranes: From Fundamental Perception to New Concepts and Applications

Date: Jan 5, 2010
Time:16:45-17:15
Venue: LT11

Nicholas A. Kotov
University of Michigan, USA
Self-Assembly of Nanoparticles: Toward to Biological Functions, Inorganic Viruses, and Microscale Electronic Components

Date: Jan 5, 2010
Time:17:15-17:45
Venue: LT13

Robert Nemanich
Arizona State University, USA
Thermionic and Field Electron Emission Devices from Diamond and Carbon Nanostructures

Date: Jan 7, 2010
Time:08:30-09:00
Venue: LT12

Edmund G. Seebauer
University of Illinois at Urbana-Champaign, USA
Defect Engineering in Semiconductors for Nanoelectronic Devices

Date: Jan 7, 2010
Time:09:00-09:30
Venue: LT17

Cary Y. Yang
Santa Clara University, USA
Transport Phenomena in Carbon Nanostructures

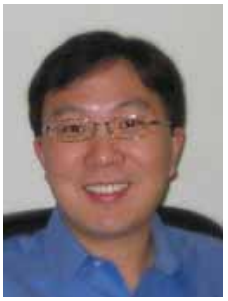
Date: Jan 7, 2010
Time:09:30-10:00
Venue: LT14

Zhong Lin Wang
Georgia Institute of Technology, USA
Top Emerging Technologies for Self-Powered Nanosystems: Nanogenerators and Nanopiezotronics

Date: Jan 7, 2010
Time:10:15-10:45
Venue: LT18

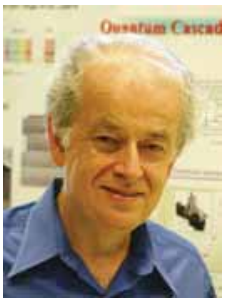
Date: Jan 7, 2010
Time:11:00-11:30
Venue: LT01

Hua-Jian Gao
Brown University, USA
Learning from Nature about Principles of Hierarchical Materials



Date: Jan 7, 2010
Time:11:30-12:00
Venue: LT15

Xiang-Feng Duan
University of California, Los Angeles, USA
Functional Inorganic Nanostructures, New Opportunities for Future Electronics



Date: Jan 7, 2010
Time:12:00-12:30
Venue: LT11

Federico Capasso
(to be presented by Nanfang Yu)
Harvard University, USA
Wavefront Engineering of Semiconductor Lasers Using Plasmonics

Date: Jan 7, 2010
Time:16:45-17:15
Venue: LT14

Yu Huang
University of California, Los Angeles, USA
Approaching Molecular Nanodevices Using Engineered Nanowire Templates

NOTE: Invited talks are listed in the scheduled presentation order.

Date: Wednesday - Jan 6, 2010
Venue: Chan Tai Ho Multi-Purpose Hall

Symposium on Nanoscience and Nanotechnology in China

Session 1: Co-Chairs - Charles M Lieber and Zhong Lin Wang

Time: 08:50-09:15

Lih-Juann Chen

National Tsing Hua University, Hsinchu, Taiwan

In-Situ Ultrahigh Vacuum Transmission Electron Microscope Investigations of Nanostructures

Time: 09:15-09:40

Junhao Chu

East China Normal University and Shanghai Institute of Technical Physics, Chinese Academy of Sciences, Shanghai, China

Spin-Related Phenomena in Nano-Structure of Semiconductors

Time:09:40-10:05

Chuanxian Ding

Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China

Microstructure and Properties of Plasma Sprayed Nanostructural ZrO_2 Coatings

Time: 10:05-10:30

You-Wei Du

Nanjing University, Nanjing, China

Spin Transport in Diluted Magnetic Semiconductors

Session 2: Co-Chairs – A Paul Alivisatos and You-Nan Xia

Time: 10:50-11:15

Xiao-Lin Lei
Shanghai Jiao Tong University, Shanghai, China

Oscillations of Nonlinear Magnetoresistance in Microwave-Irradiated 2D Semiconductors

Time: 11:15-11:40

Guo-Gang Qin
Department of Physics and State Key Lab for Mesoscopic Physics, Peking University, Beijing, China

Electronics and Photonics Prototype Devices Based on Compound Semiconductor Nanowires/Nanobelts

Time: 11:40-12:05

Ben Zhong Tang
The Hong Kong University of Science & Technology, Clear Water Bay, Hong Kong

Efficient Luminescence from Nanostructured Aggregates of Organic Luminogens

Time: 12:05-12:30

David S Y Tong
City University of Hong Kong and The University of Hong Kong

Surface Modification of TiO_2 and ZnO Nanosurfaces and Applications

Session 3: Co-Chairs – Lars Samuelson and Paul Weiss

Time: 14:00-14:25

Hailing Tu

General Research Institute for Nonferrous Metals, Beijing, China

Evolution of Core-Shell Silicon Nanowires Grown on Silicon Substrates by Pulsed Laser Ablation

Time: 14:25-14:50

King-Ning Tu

University of California at Los Angeles, Los Angeles, CA, USA

Nucleation and Growth of Epitaxial Silicide in Nanowire of Silicon

Time: 14:50-15:15

Pei-Heng Wu

University of Nanjing, Nanjing, China

Superconducting Nanowires for Detecting Single Photons at Telecommunication Wavebands

Time: 15:15-15:40

Jianbai Xia

Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China

Rashba Electron Transport in 1D Quantum Waveguides

Session 4: Co-Chairs – Harold Kroto and Peidong Yang

Time: 16:00-16:25

Si-Shen Xie
Institute of Physics, Chinese Academy of Sciences,
Beijing, China
Synthesis and Physical Properties of Macroscale Carbon Nanotube Architectures

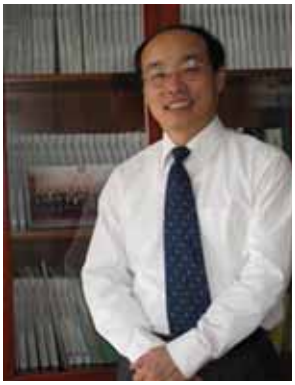
Time: 16:25-16:50

Qi-Kun Xue
Tsinghua University, Beijing, China and Institute of Physics,
Chinese Academy of Sciences, Beijing, China
Probing Superexchange Interaction in Molecular Magnets by Spin-Flip Spectroscopy and Microscopy

Time: 16:50-17:15

Xingdong Zhang
Sichuan Univerisity, Sichuan, China
Biological Effects and Risks of Nano-Bioceramics

Time: 17:15-17:40



Ze Zhang
Beijing University of Technology, Beijing, China
Atomic Resolution In-Situ TEM Observation on Brittle-ductile Transition of Nano-Wires with Covalent Bonding

NOTE: All attendees should be seated 5 minutes before the beginning of each session

Acknowledgements

Members of the local organizing committee wish to thank the following for their generous sponsorship and support:

Contents

Monday - Jan 4, 2010

Nanofabrication Oral Session I

LT-18

Chair: Hua ZHANG, Nanyang Technological University

11:15 **An Electronic Nose for Amine Detection Based on Polymer/SWNT-COOH Nanocomposites**

Panida Lorwongtragool[1], Anurat Wisitsoraat[2] and Teerakiat Kerdcharoen[3,*]

[1]Materials Science and Engineering Programme, Faculty of Science, Mahidol University, Bangkok 10400, Thailand, [2]Nanoelectronic and MEMS Lab, National Electronic and Computer Technology Center, Pathumthani 12120, Thailand, [3]Department of Physics and Center of Nanoscience and Nanotechnology, Faculty of Science, Mahidol University, Bangkok 10400, Thailand *Contacting Author: Teerakiat Kerdcharoen is with Materials Science and Engineering Programme, Faculty of Science, Mahidol University, Rama 6 Road, Bangkok 10400, Thailand (phone: +66-2-201-5842; fax: +66-2-201-5843; e-mail: sctkc@mahidol.ac.th)

FC101

11:30 **Carbon Nanotubes and Iron Nanofibers Preparation Using the Pentacarbonyl Iron from the V-type Pyrolysis Flame**

Yuanchao Liu*, baomin Sun, Zhanyong Ding and Wei Li

School of energy and power engineering, north china electric power university, china *Contacting author: Yuanchao Liu is with the school of energy and power engineering, north china electric power university, Beijing, China. (phone: +86 10-80798745; email: ycliu_999@126.com).

FC102

11:45 **Fabrication of Ion-Induced Carbon-Cobalt Nanocomposite Fibers: Effect of Cobalt Supply Rate**

Zhipeng Wang*, Mohd Zamri Mohd Yusop, Takehiko Hihara, Yasuhiko Hayashi and Masaki Tanemura

Department of Frontier Materials, Nagoya Institute of Technology,Gokiso-cho, Showa-ku, Nagoya 466-8555, Japan. *Contacting Author: Zhipeng Wang (phone: +81-52 7355024; fax: +81-527355024; email: wang.zhipeng@nitech.ac.jp).

FC103

12:00 **Growth of Metal-free Carbon Nanotubes with Amorphous Carbon Catalyst Layer on Glass Substrate by Microwave Plasma Enhanced Chemical Vapor Deposition**

Jae Keun Seo[1], Ki-han Ko[1], Jaekwang Kim[1], Yu sung Lee[1], Eun Kyu Kang[1], Jae-Hyeoung Lee[2] and Won Seok Choi[1,*]

[1] Department of Electrical Engineering, Hanbat National University, Daejeon, Republic of Korea [2] School of Electronic and Information Engineering, Kunsan National University, Kunsan 573-701, South Korea *Contacting Author: Won Seok Choi is with the Department of Electrical Engineering, Hanbat National University, Daejeon 305-714, Korea. (Email: wschoi@hanbat.ac.kr; Phone: +82 42 821 1754; Fax: +82 42 821 1088)

FC104

12:15 **Flexible 3D Conformation of Single-Walled CNTs/PEG Hybrid Wormlike Structure: PEG Lamellae Self-Assembly on CNT in Supercritical CO_2**

Fan Zhang, Hao Zhang, Qun Xu*, Qiuyan Yang

College of Materials Science and Engineering, Zhengzhou University, Zhengzhou 450052, China *Contacting Author: Qun Xu is with the College of Materials Science and Engineering, Zhengzhou University, Zhengzhou 450002, China (phone: +86 371 67767827 fax: +86 371 67767827;

FC105

email:qunxu@zzu.edu.cn).

12:30 Lunch

Chair: Zheng HU, Nanjing University

14:00 **Investigation of Influence of Synthesis Parameters on Length and Purity of the CNTs Grown by Thermal Chemical Vapor Deposition**
Ting Xu*, Jianmin Miao
Micromachines Centre, Nanyang Technological University, Singapore, 639798 *Corresponding author: e-mail: xuti0002@ntu.edu.sg
FC106

14:15 **Preparation of Silicon Nanowire Arrays via Electroless Metal Deposition**
Xuan Liu*, Qingsong Hu
School of engineering, Shanghai Ocean University. *Contacting Author: Xuan Liu is with school of engineering, Shanghai Ocean University, No.185 mailbox, 999 Hucheng Ring-Rd, Shanghai 200433, China.(phone: 86-021-61900819; fax: 86-021-61900819; email: xliu@shou.edu.cn).
FC107

14:30 **Synthesis of Single-layer Graphene-Quantum dots nanocomposite directly from graphene oxide**
Aoneng Cao[1,*], Zhen Liu[1], Minghong Wu[1], Zhangmei Ye[1], Zhengwei Cai[1], Yanli Chang[1], and Yuanfang Liu[1,2]
[1] Institute of Nanochemistry and Nanobiology, Shanghai University, Shanghai, 200444, China [2] Beijing National laboratory of Molecular Science, College of Chemistry and Molecular Engineering, Peking University, Beijing, 100871, China. *Contacting Author: Aoneng Cao, Institute of Nanochemistry and Nanobiology, Shanghai University, Shanghai, 200444, China. (Phone: 86-21-66135277-102; Fax: 86-21-66135275; email: ancao@shu.edu.cn)
FC108

14:45 **Possibility of Cloning Identical Nanotube Structures for Nano Electronics**
Lianxi Zheng
School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore 639798. Email: lxzheng@ntu.edu.sg
FC109

15:00 **Preparation and Properties of Multi-walled Carbon Nanotube/TiO2 Nanocomposite Films**
Yan Sun, Kangping Yan, Guixin Wang and Wei Wang
Sichuan University
FC110

15:15 **Preparation of polymer composites modified with aligned carbon nanotubes induced by electric field**
Yue-Feng Zhu*, Chan Zhang, Xi-Zhi Yang, Chen Ma, Ren-Ping Zhang, Guang-Hui Wei
Key Laboratory for Advanced Materials Processing Technology, Ministry of Education, P. R. China; Department of Mechanical Engineering, Tsinghua University, Beijing 100084, P. R. China yfzhu@tsinghua.edu.cn
FC111

15:30 **Growth of Monolayer Graphene on Ni Foils & Foams by Ethanol Chemical Vapor Deposition**
Xinming Li, Chunyan Li, Hongwei Zhu*, Jinquan Wei, Kunlin Wang, Qinke Shu, Zhen Li, Dehai Wu
Key Laboratory for Advanced Manufacturing by Material Processing Technology and Department of Mechanical Engineering, Tsinghua University, Beijing 100084, P. R. China *Contacting Author: Hongwei Zhu (Phone: +86-10 62781065; Fax: +86-1062770190; Email: hongweizhu@tsinghua.edu.cn).
FC112

15:45 **Influence of Reactant composition in Synthesis of Carbon Nanotubes from pyrolysis flame**
FC113

Baomin Sun, Yuanchao Liu*, Zhaoyong Ding and Wei Li
The school of energy and power engineering north china electric power university, Beijing ,China
*Contacting author: Yuanchao Liu is with the school of energy and power engineering, North China Electric Power University, Beijing, China. (phone: +86 10-80798745; email: ycliu_999@126.com)

16:00 Break

Chair: Qun Xu, Zhengzhou University

Hongwei ZHU, Tsinghua University

16:15 **Temperature Control of Microheaters for Localized Carbon Nanotube Synthesis**
Jingyu Lu, Ting Xu, and Jianmin Miao
School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore 639798 Email: jingyulu@pmail.ntu.edu.sg
FC114

16:30 **Growth Mechanism, Structural Regulation and Functionalization of Carbon-based Nanotubes**
Zheng Hu
Key Laboratory of Mesoscopic Chemistry of MOE, Department of Chemistry, Nanjing University, Nanjing 210093, China. Zhenghu@nju.edu.cn
FC115

16:45 **Effects of Hydrogen Microwave Plasma Post-Treatment on Tetrahedral Amorphous Carbon Coated Carbon Nanotubes**
Jun Yu, and Daniel H. C. Chua*
Department of Materials Science and Engineering, National University of Singapore, Science Drive 3, Singapore 119260, Republic of Singapore. *Contacting Author: Dr. Daniel H. C. Chua is with the Department of Materials Science and Engineering, National University of Singapore, Singapore. (phone: +65-65168933; email: msechcd@nus.edu.sg).
FC116

17:00 **Recognition of Carbon Nanotube Chirality by Phage Display**
Yu Ting[1], Gong Yingxue[2], Chen Yuan[3], and Liao Kin[4]*
[1, 3, 4] School of Chemical and Biomedical Engineering, Nanyang Technological University, Singapore. [2] Institute of Life and Health Engineering, Jinan University, Guangzhou, China. *Contacting author: Liao Kin is with Division of Bioengineering, School of Chemical and Biomedical Engineering, Nanyang Technological University, Sinagpore (phone: +65-67905835; fax: +65-67911761; Email: askliao@ntu.edu.sg).
FC117

17:15 **Controlled Growth and Modification of Aligned Carbon Nanotubes for Multifunctional Nanocomposites and Nanodevices**
Liming Dai
Department of Chemical Engineering, Case School of Engineering, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106, USA. Email: liming.dai@case.edu
KS103

17:45 **Thermal Treatment of Carbon Nanotubes Film by a Pulsed Nd:YAG Laser Irradiation**
T. Nakamiya*,[1], K. Semba[2], F. Mitsugi[2], T. Ikegami[2], Y. Iwasaki[1],Y. Sonoda[1], and R. Tsuda[1]
[1] Graduate School of Industrial Engineering, Tokai University, Japan [2] Graduate School of Science and Technology, Kumamoto University, Japan *Contacting Author: Toshiyuki Nakamiya, Graduate School of Industrial Engineering, Tokai University, Toroku 9-1-1, Kumamoto 862-8652, Japan (Phone:+81-96-386-2656; Fax:+81-96-381-7956; Email: nakamiya@tokai.ac.jp)
FC118

18:00 **Size and Density Control of Silicon Quantum Dots in SiC Dielectric Matrix**
G. R. Chang, Fei Ma, Dayan Ma, Ben Ma, and Kewei Xu*
FC119

State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, Shaanxi, China. *Contacting Author: Kewei Xu and G.R. Chang are with State Key Laboratory of Mechanical Behavior of Materials, Xi'an Jiaotong University, No. 28, Xianning West Road, Xi'an 710049, Shaanxi, China. (Phone: +86 29-88403018, e-mail: kwxu@mail.xjtu.edu.cn, ivy.chang09@gmail.com).

18:15 **Comparision of distinguishable ZnO nanostructures synthesized by a solution process and a vapor transfer method**

Guan-nan He[a, b], Xiuzhu Lin[a], Sun-tao Wu[c], Jing Li[c],* Qi-Hui Wu [d]

[a] Physics Department, Xiamen University, Xiamen, Fujian 361005, China. [b] Physics Department, Zhongshan University, Guangzhou, Guangdong 510275, China. [c] Pen-Tung Sah Micro-Nano Technology Research Center, Xiamen University, Xiamen, Fujian 361005, China. [d] Department of Physics, La Trobe University, Bundoora 3086, VIC, Australia * To whom correspondence should be addressed. E-mail: lijing@xmu.edu.cn. Phone: 86-592-2181340. Fax: 86-592-2187196.

FC120

Nanofabrication Oral Session II

LT-14

Chair: Shihe YANG, The Hong Kong University of Sciecne and Technology

11:15 **Carpet of Nanowires on Flexible Silicone Substrate**

S. Mátéfi-Tempfli* and M. Mátéfi-Tempfli

Physical-Chemistry and Physics of Materials (PCPM) Laboratory, Institute of Condensed Matter and Nanosciences, Université catholique de Louvain (UCL), B-1348 Louvain la Neuve, Belgium. *Contacting Author: Stefan Mátéfi-Tempfli is with PCPM-UCL, Place Croixdu Sud, 1, bat. Boltzmann A1, B-1348, Louvain-la-Neuve, Belgium (phone: +32-10-47-2409; fax: +32-10-47-3452; email: matefi@uclouvain.be)

FC121

11:30 **Core-Shell GaAs-AlAs Nanowires Grown by MBE**

Hadas Shtrikman[1]*, Ronit Popovitz-Biro[2], Palle von Huth[2], Andrey Kretinin[1] and Moty Heiblum[1]

[1] Braun Center for Submicron Research, The Weizmann Institute of Science, Rehovot, Israel. [2] Electron Microscopy Unit, The Weizmann Institute of Science, Rehovot, Israel. *Contacting Author: Hadas Shtrikman is at the Braun Center for Submicron Research, The Weizmann Institute of Science, Rehovot 76100, Israel. (phone: 972-8-9342585; fax: 972-8- 9344128; e-mail: hadas.shtrikman@weizann.ac.il).

FC122

11:45 **Direct Growth of Bismuth Telluride nanowires by On-Film Formation of Nanowires for High-efficiency Thermoelectric Devices**

Jinhee Ham,[1] Wooyoung Shim,[1,3] Do Hyun Kim,[2] Seunghyun Lee,[1] Jongwook Roh,[1] Sung Woo Sohn,[1] Kyu Hwan Oh,[2] Peter W. Voorhees, [3] and Wooyoung Lee*[1]

[1] Department of Materials Science and Engineering, Yonsei University, 134 Shinchon, Seoul 120-749, Korea [2] Department of Materials Science and Engineering, Seoul National University, Seoul 151-744, Korea [3] Department of Materials Science and Engineering, Northwestern University, Evanston, Illinois 60208 *Contacting Author: Wooyoung@yonsei.ac.kr

FC123

12:00 **Fabrication and structure characterization of Te butterfly nanostructures**

Tailun Wong[1], Guangwei She[2], Chun Cheng[1], Wei Li[1], Wensheng Shi[2], Xiaohong Zhang[2], and Ning Wang[1]*

1) Department of Physics and Institute of Nano Science and Technology, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China 2) Key Laboratory of

FC124

Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China *Contacting Author: Ning Wang (phone: +852-23587489; fax: +852-23581652; email: phwang@ust.hk).

12:15 **Fabrication and Surface-Enhanced Raman Scattering Properties of Gold Nanostructures**
Yong Yang*, Zhengren Huang, Masaki Tanemura, Kohei Yamaguchi, and Masayuki Nogami
Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, PRC, Nagoya Institute of Ceramics, Nagoya, Japan *Contacting Author: Yong Yang is with Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, 200050, PRC, Tel: 86-21-52414321, E-mail: yangyong@mail.sic.ac.cn — FC125

12:30 Lunch

Chair: Jun CHEN, Sun Yat-Sen University

14:00 **Preparation of Titanium Silicide Nanowires by APCVD Method**
Zhaodi Ren, Mei Shen, Gaorong Han, Wenjian Weng, Ning Ma and Piyi Du*
Department of Materials Science and Engineering, State Key Laboratory of Silicon Materials, Zhejiang University, Hangzhou, China *Contacting author: Piyi Du is with the department of Materials Science and Engineering, State Key Laboratory of Silicon Materials, Zhejiang University, Hangzhou 310027, China. (phone: -86-571-87952324; fax: -86-571-87952324; email: dupy@zju.edu.cn). — FC126

14:15 **SERS substrate via a low cost and temperature dependence of silver nanostructure**
Chun-Hsiang Tu and Shih-Shou Lo
Department of Photonics, Feng Chia University, Taiwan, R.O.C (phone: +886-4-24517250 ext.5041; email: sslo@fcu.edu.tw). — FC127

14:30 **Interface Effects on Thermal Conductivity of Bi/Te Core-shell Nanowires**
Joohoon Kang, Jinhee Ham, Jong Wook Roh, Seunghyun Lee, and Wooyoung Lee*
Department of Materials Science and Engineering, Yonsei University, 262 Seongsanno Seodaemun-gu, Seoul, 120-749, Korea *Contacting Author: Wooyoung Lee is with the Department of Materials Science and Engineering, Yonsei University (phone: 82-2-2123-2834; e-mail: Wooyoung@yonsei.ac.kr) — FC128

14:45 **Screw Dislocation Driven Nanowire Growth and its Potential Applications**
Song Jin
Department of Chemistry, University of Wisconsin-Madison, 1101 University Ave., Madison, WI 53706 e-mail: jin@chem.wisc.edu; Tel: 608-262-1562 — KS108

15:15 **Fabrication of a single nanowire circuit made of semiconducting NiS_2 by direct-write electron beam lithography and observation of metallic conduction**
G. U. Kulkarni* and T. Bhuvana
Chemistry and Physics of Materials Unit and DST Unit on Nanoscience, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur P.O., Bangalore 560 064, India *Contacting Author is with Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India (phone : +91-80-2208 2814; fax: +91-80-22082766; e-mail: kulkarni@jncasr.ac.in) — FC129

15:30 **Fabrication of integrated copper indium diselenide nanorod arrays on silicon using porous anodic alumina as template**
Zhongwei Zhang[1], Weifeng Liu[1], Ji Li[1], Yunxin Han[1], Guoshun Jiang[1], Charles Surya[2], and Changfei Zhu[1,*] — FC130

[1] Department of Materials Science and Engineering, University of Science and Technology of China, Hefei, Anhui 230026, PR China. [2] Department of Electronic and Information Engineering, The Hong Kong Polytechnic University, Hong Kong, China. *Contacting Author: Changfei Zhu is with the Department of Materials Science and Engineering, University of Science and Technology of China, China. (phone: +86 551-3600578; email: cfzhu@ustc.edu.cn).

15:45 **Si Substrate Controlled in-plane Synthesis of Self-assembled Nanostructures Catalyzed by Au Nanoparticles**

Zhou Zhang[1], Lai Mun Wong[2], Shijie Wang[2], and Tom Wu[1,*]
[1] Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore. [2] Institute of Materials Research and Engineering, Singapore. *Contacting Author: Tom Wu is with the Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University; 21 Nanyang Link, SPMS, PAP-04-10, Singapore 637371, Singapore (phone: 65-6514-1047; email: tomwu@ntu.edu.sg)

FC131

16:00 Break

Chair: Xiaosheng FANG, National Institute for Materials Science

Wooyoung LEE, Yonsei University

16:15 **Growth of the copper oxide nanowires from copper thin films deposited on silicon substrate**

Yeon-Woong Park [a], Nak-Jin Seong[a], and Soon-Gil Yoona [b],*
[a] School of Nano Science and Technology, [b] Graduate of Analytical Science and Technology (GRAST), Chungnam National University, Daeduk Science Town, 305-764, Daejeon, Korea *Contacting Author: sgyoon@cnu.ac.kr

FC132

16:30 **Synthesis and Characterization of Angstrom-Scale Anatase Titania Atomic Wires**

Chenmin Liu, Hui Sun, and Shihe Yang*
Department of Chemistry, William Mong Institute of Nano Science and Technology, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong *Contacting Author: Prof. Dr. Shihe Yang is with Department of Chemistry, William Mong Institute of Nano Science and Technology, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong (e-mail: chsyang@ust.hk)

FC133

16:45 **Synthesis strategy for 1D magnetic ternary amorphous nanoalloys**

Ming Wen*, Fan Zhang and Qingsheng Wu
Department of Chemistry, Tongji University, 1239 Siping Road, Shanghai 200092, China. *Contacting Author: Ming WEN is with Department of Chemistry, Tongji University, China. (phone: +86-21 65982653 Ex. 8636; fax: +86-2165981097; email: m_wen@tongji.edu.cn).

FC134

17:00 **Characterization, Cathodoluminescence and Field-Emission Properties of Morphology-Tunable CdS Micro/Nanostructures**

Tianyou Zhai*, Xiaosheng Fang, Xijin Xu, Yoshio Bando and Dmitri Golberg
World Premier International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba, Ibaraki 305-0044, Japan *Contacting Author: Tianyou Zhai is with National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba, Ibaraki 305-0044, Japan. (Fax: +81-29-851-6280; zhai.tianyou@gmail.com)

FC135

17:15 **Study on Fabrication and Morphology Evolution of Sandia Octahedral Molecular Sieves Nanowires**

FC136

Lei Liu, Bo Li, Yuming Cui and Xingfu Zhou*
State Key Laboratory of Materials-Oriented Chemical Engineering, College of Chemistry and Chemical Engineering, Nanjing University of Technology, Nanjing, China. *Contacting Author: Xingfu. Zhou is with State Key Laboratory of Materials-Oriented Chemical Engineering, College of Chemistry and Chemical Engineering, Nanjing University of Technology, Nanjing, China. (phone: +86-25-83587773;email: Zhouxf@njut.edu.cn).

17:30 **Cross-section Control of Stacked Nanowires formed by Bosch Process and Oxidation** FC137
Xuan Zuo*, Tao Wang, Ricky M. Y. Ng, Jin He and Mansun Chan
Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong *Contacting Author: Xuan Zuo is with the Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology (tel: +852 2358-8842; fax: +852 2358-1485; e-mail: zuoxuan@ust.hk).

17:45 **Growth of Silicide nanowires and 1D superlattice structures for Thermoelectric Applications** FC138
S.Liang* X.Fang Zhi-Xin GuO
Department of Chemistry, Renmin University of China, Beijing 100872, China Contacting Author: S. Liang (phone: 86-10-62513162; fax: 86-10-62516444; email: sliang@ruc.edu.cn)

18:00 **Selective Shortening Aspect Ratio of Gold Nanorods with Alternative Approaches** FC139
Haowen Huang
School of Chemistry and Chemical Engineering, Hunan University of Science and Technology, Xiangtan, P.R. China. hhwn@iccas.ac.cn

18:15 **Structural Characterization and Cathodoluminescence of Individual BN Layers-Sheathed CaS:Eu nanowires** FC140
Jing Lin *, Yoshio Bando, Yang Huang, Chengchun Tang, Benjamin Dierre, Takashi Sekiguchi and Dmitri Golberg
International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS) and Advanced Electronic Materials Center, National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba, Ibaraki, Japan E-mail: LIN.Jing@nims.go.jp

Nanofabrication Oral Session III — LT-16

Chair: Jianmin MIAO, Nanyang Technological University

11:15 **Atomistic Modeling of Scratching Process based on Atomic Force Microscope: Effects of Temperature** FC141
Hanif Muhammad Khan and Sung-Gaun Kim
Sung-Gaun Kim is with Division of Mechanical and Automotive Engineering, Kongju National University, South Korea. *Contacting Author: Sung-Gaun Kim is with Division of Mechanical and Automotive Engineering, Kongju National University, South Korea. (Phone: +82-041-521-9253; fax: +82-041-555-9123; email: kimsg@kongju.ac.kr).

11:30 **Design of Optical Assistance in Nano-Scale Fabrication for the Flexible Display Panels** FC142
P.S. Pa
Department of Digital Content Design, Graduate School of Toy and Game Design National Taipei University of Education myhow@seed.net.tw

11:45 **Calibration of a 6-dof parallel micromanipulator for nanomanipulation** FC143
Lefeng Wang, Weibin Rong, Mao Feng, Taochou Liu, and Lining Sun

State Key Laboratory of Robotics and System, Harbin Institute of Technology, Harbin, China. (phone: +86-451-86414462; fax: +86-451-86402706; e-mail: lefengwang@126.com).

12:00 **Control the Spin State of Transitonal Atoms on ZnO(10-10) by Surface Chemistry**

Xiaoqing Tian and Jianbin Xu*

Department of Electronic Engineering and Materials Science and Technology Research Center,The Chinese University of Hong Kong, Shatin, N.T., Hong Kong SAR, P. R. China *Contacting Author: jbxu@ee.cuhk.edu.hk

FC144

12:15 **Beam Combination Using Near-Zero Index Metamaterials**

Xingping Wang[1], Yuanming Feng[1], Sujuan Chen[1], Zeyu Zhao[1] and Chongxi Zhou[1, *]

[1] State Key Lab of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences, Chengdu, 610209, China. *Contacting Author: Chongxi Zhou is with State Key Lab of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences, Chengdu, 610209, China (phone: +86-85100929; fax: +86-85101502; e-mail: cxzhou@ioe.ac.cn).

FC145

12:30 Lunch

Chair: István Mátéfi-Tempfli, Université catholique de Louvain

14:00 **Nano-cones Formed on a Surface of Semiconductors by Laser Radiation: Technology, Model and Properties**

*Artur Medvid'

Riga Technical University E-mail: medvids@latnet.lv

FC146

14:15 **Fabrication of Ultra-Sharp Single Atom Tips**

Tsu-Yi Fu*[1], Chia-Lun Chiang[1], Rung-Jiun Lin[1], Jin-Long Hou[1,2], Hong-Shi Kuo[2], Ing-Shouh Hwang[2], and Tien T. Tsong[2]

[1] Department of Physics, National Taiwan Normal University, Taipei, Taiwan, [2] Institute of Physics, Academia Sinica, Taipei, Taiwan phtifu@phy.ntnu.edu.tw

FC147

14:30 **Local Structure characterization of CuPc/TiO_2 Nanocomposites**

Chaloempol Saributr, Wanichaya Mekprasat, Pitiporn Thanangam and Wisanu Pacharapa

College of Nanotechnology Ladkrabang, King Mongkut Institute of Technology Ladkrabang and Thailand Center of Excellence in Physics (ThEP) , Thailand. *Contacting Author: Chaloempol S. is with College of Nanotechnology Ladkrabang, King Mongkut Institute of Technology Ladkrabang, Bangkok, Thailand. (phone: +66 326 4111 ext 3076; email: keng_sari@hotmail.com)

FC148

14:45 **Modeling of 3-D Trench Structures with Corrected Effective Medium Approximation for Model-Based Infrared Reflectrometry**

Chuanwei Zhang, Shiyuan Liu*, Tielin Shi

Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China *Contact author, email: shyliu@mail.hust.edu.cn.

FC149

15:00 **Molecular Dynamics Simulation of Polylactic Acid/ Organoclay Nanocomposites: Effects of Different Organic Modifiers**

Meitang Liu*, Minfeng Pu, and Hongwen Ma

School of materials science and technology, University of Geosciences, Xueyuan Road 29, Beijing 100083, China. *Corresponding author: Phone: +86-010-82320151; Email: mtliu@cugb.edu.cn.

FC150

15:15 **Multifrequency Kelvin Probe Force Microscopy Under Ambient Conditions**

X. D. Ding*, C. Li, R. Y. Zeng and Z. W. Liang, J. B. Xu

FC151

State Key Laboratory of Optoelectronic Materials and Technologies, and School of Physics Science & Engineering, Sun Yat-sen University, Guangzhou 510275, China Department of Electronic Engineering, and Materials Science and Technology Research Center, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong, China * Contacting Auther, Electronic Mail: dingxd@mail.sysu.edu.cn

15:30 **Estimation of AFM Tip Shape and Status in Linewidth and Profile Measurement**

Guoqiang Han, Zhuangde Jiang* and Weixuan Jing
State Key Laboratory for Manufacturing Systems Engineering, Xi'an Shaanxi 710049, PR China *Contacting Author: Zhuang D. Jiang is with Institute of Precision Engineering, Xi'an Jiaotong University, Xi'an Shaanxi, 710049, PR China. (Phone: +86-029-82678616-150; email: galehan@gmail.com).

FC152

15:45 **Nanodiamond Clusters and Their Tranformation into Fullerene at High Temperature: A Tight-Binding Simulation**

Anastassia Sorkin*, Haibin Su** and Tay Beng Kang*
*School of Electrical and Electronic Engineering, Nanyang Technological University **School of Material Science and Engineering, Nanyang Technological University, Singapore Contacting Author: Anastassia Sorkin, School of Electrical and Electronic Engineering, Nanyang Technological University, Block S1, 50 Nanyang Avenue, Singapore, 609775, Singapore (e-mail: asorkin@ntu.edu.sg)

FC153

16:00 Break

Chair: Daniel CHUA, National University of Singapore

Ying Dai, Shandong University

16:15 **Negative-Stiffness Vibration Isolation**

Liu Fang[1,2], Pang Xiangyang[1], Liu Zhigang[1], Zhang Tao[1,2], Huang Hongbiao[1], Zhu Jianqiang[1]
[1]. Joint Laboratory for High Power Laser Physics, Shanghai Institute of Optical and Fine Mechanics, CAS. Shanghai, 201800,China [2]. Graduate University of Chinese Academy of Science, Beijing 100039, China Contacting Author: Liu Fang is with Shanghai Institute of Optical and Fine Mechanics, Chinese Academy of Science. (Phone: +86-21 69918809; email: funlau@siom.ac.cn).

FC154

16:30 **Theoretical Analyzing of Monomers Adsorbing in Nano-slits**

Meitang Liu [1]*, Minfeng Pu[1], Hongwen Ma [1], and Bozhong Mu [2]
[1] School of materials science and technology, China University of Geosciences, Xueyuan Road 29, Beijing 100083, China. [2] Department of Chemistry, East Chinia University of Science and Technology, Meilong Road 130, Shanghai, 200237, China *Corresponding author: Phone: +86-010-82320151; Email: mtliu@cugb.edu.cn.

FC155

16:45 **Wall Angle Control of Reactive Ion Etched Features on a Silicon Substrate**

Alonggot Limcharoen*, Chupong Pakpum and Komgrit Leksakul
[1]Faculty of Industrial Engineering, Chiang Mai University, Chiang Mai,Thailand [2] Western Digital (Thailand) Company Limited BangPa-in Industrial Estate,Ayuthaya, Thailand *Contacting Author: Alonggot Limcharoen is with the Faculty of Industrial Engineering, Chiang Mai University, Chiang Mai, Thailand. (phone: 668-6670-5495; email : numaoy_paditam@hotmail.com).

FC156

17:00 **Polymer film selection for corrosion protection of data storage magnetic material**

Santi Chatruprachewin[1], Laddawan Supadee[2] and Assoc.Prof.Dr.Wisut Titiroongruang[1]

FC157

[1]Faculty of electrical engineering, King Mongkut's Institute of Technology, Ladkrabang, Thailand. 10520 Tel.(66)1826-1164 e-mail: s2610117@kmitl.ac.th [2] Western Digital (Thailand) Co., Ltd., Bangpa-in, Ayutthaya. Tel.(66)352-78633 e-mail:laddawan.supadee@wdc.com

17:15 **Nano-data storage and lithography by near-field optics**

Fuxi Gan and Jingsong Wei
Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Shanghai 201800, China E-mail: fxgan@mail.shcnc.ac.cn

FC158

17:30 **Room Temperature UHV Compatible SiO_2 for Top-Gating an STM-Patterned Quantum Dot**

William Lee[1],*, Giordano Scappucci[2], Daniel Thompson[1,2], Michelle Simmons[1,2]
[1] School of Physics, University of New South Wales, Sydney, NSW 2052, Australia [2] Australian Research Council Centre of Excellence for Quantum Computer Technology, University of New South Wales, Sydney, NSW 2052, Australia * Contacting Email: wct.lee@unsw.edu.au

FC159

17:45 **Statistical Processing of Nanoporous Templates with High-Yield Single-Pore Resolution**

S. Mátéfi-Tempfli[1], M. Mátéfi-Tempfli [1], L. Piraux[1], S. Melinte[2], and A. Vlad[2]*
[1] Laboratoire de Physico-Chimie et Physique des Materiaux, Université catholique de Louvain, B-1348 Louvain la Neuve, Belgium. [2] Laboratoire de Dispositifs Intégrés et Circuits Electroniques, Université catholique de Louvain, B-1348 Louvain la Neuve, Belgium. *Contacting Author: Alexandru Vlad is with Laboratoire de Dispositifs Intégrés et Circuits Electroniques, Université catholique de Louvain, B-1348 Louvain la Neuve, Belgium (phone: +32-10-47-2555; fax: +32-10-47-2598; email:alexandru.vlad@uclouvain.be)

FC160

18:00 **Characterization of Plastically Graded Nanostructured Material**

H.H Ruan*, A.Y. Chen, J. Lu
Department of Mechanical Engineering, The Hong Kong Polytechnic University Hung Hom, Kowloon, Hong Kong *Contacting Author: Phone: 852-2766-4502, Fax: 852-2365-4703, email: mmhhruan@inet.polyu.edu.hk

FC161

18:15 **Theory of screw dislocation and chiral angle controlled carbon nanotube growth**

Feng Ding[1], Boris I. Yakobson[2]
[1)] Institute of Textile and Clothing, Hong Kong Polytechnic University, Kowloon, Hong Kong
[2)] ME&MS and Chemistry Department, Rice University, Houston, TX 77005
E-mail: tcfding@inet.polyu.edu.hk

FC162

Nanoelectronics Oral Session I

LT-17

Chair: Xingwang ZHANG, Institute of Semiconductors, CAS

11:15 **Nanostructured Photon Management for High Performance Solar Cells**

Yi Cui
Department of Material Science and Engineering, Stanford University, Stanford, CA 94305. E-mail: yicui@stanford.edu

KS102

11:45 **A Computational Study on Interfacial Doping and Quantum Transport of Silicide-Silicon Contacts**

Yijian Ouyang, Jyotsna Chauhan, and Jing Guo*
Department of Electrical and Computer Engineering University of Florida, Gainesville, FL, 32611, USA. Email: guoj@ufl.edu

EC101

12:00 **Analysis of Finite Difference Time Domain Technique to Solve the Time-dependent**

EC102

Schroinger Equation in Quantum Structures in Inhomogeneous Medium
Wenting Guo, Jin Lan, Xiaoying Wang, Yangyang Peng and Wenquan Sui*
Zhejiang University, Zhejiang and California International Nano-Systems Institute
Email: goldenglobe99@hotmail.com

12:15 **Determination of the Transmission Coefficients for Quantum Structures Using FDTD Method**
Yangyang PENG, Xiaoying WANG, Kejie LU, Xiaofeng QU, and Wenquan SUI
Nano Electronic Platform, Zhejiang-California Nanosystems Institute, Zhejiang University. EC103
Email: besttor@gmail.com

12:30 Lunch

Chair: Xiaolin WANG, University of Wollongong

14:00 **Effects of technological and geometrical parameters of a tri-gate MOSFET fabricated in a bulk technology**
B.Ramadout[1, 2], G.-N. Lu[2], J.P. Carrère[1], L. Pinzelli[1], C. Perrot[1], M. Rivoire[1] and F. Nemouchi[3]
[1]: STMicroelectronics, 38926 Crolles, France; [2]: Lyon Institute of Nanotechnology (INL), 69621 EC104
Villeurbanne, France;[3]: CEA - LETI Minatec, 38000 Grenoble, France
Email: benoit.ramadout@st.com

14:15 **Electronic Properties of GaP Nanowires of Different Shapes**
Pankaj Srivastava* , Satyendra Singh, Abhay Mishra
CNTL, ABV-Indian Institute of Information Technology and Management (IIITM), Gwalior-474010. India email; pankajs@iiitm.ac.in; Department of Physics, Hindustan College of Science & EC105
Technology, Farah, Mathura-281122. India and Department of Applied Physics, Madhav Institute of Technology & Science, Gwalior –474005. India

14:30 **Influence of Boundary Force on the Performance of Gate-all-around Ge (110) NW FETs with HfO_2 Gate Insulator**
Honghua Xu[1], Xiaoyan Liu[1]*, Gang Du[1], Yuhui He[2], Chun Fan[3], Ruqi Han[1] and Jinfeng Kang[1]
[1] Institute of Microelectronics, Peking University & Key Laboratory of Microelectronic Devices and Circuits, Ministry of education, Beijing 100871,China; [2] Key Laboratory of Nanofabrication EC106
and Novel Devices Integration Technology, Institute of Microelectronics, Chinese Academy of Sciences,Beijing 100029, China; [3] Computer Center of Peking University, Beijing 100871, China
*Contacting Author: Xiaoyan Liu is with Institute of Microelectronics,Peking University, Beijing, China. (phone/fax: +86-10-62757761; *email:xyliu@ime.pku.edu.cn)

14:45 **I-V Curve, Conductance, and Potential Difference of Copper and Gold (110) Nanowires**
Saeideh Mohammadzadeh[1,] *, Reinhard Streiter[1, 2], and Thomas Gessner[1, 2]
[1,] *Center for Microtechnologies, Chemnitz University of Technology, Chemnitz, Germany [2]
Fraunhofer Research Institute for Electronic Nano Systems (ENAS), Chemnitz, Germany EC107
*Contacting Author: E-mail: saeideh.mohammadzadeh@zfm.tu-chemnitz.de Address: Center of Microtechnologies, Chemnitz University of Technology, 09126 Chemnitz, Germany Tel: +49-37153136816

15:00 **Multi-paradigm simulations at the nanoscale: methodology and applications to nano materials**
Haibin Su EC108
Division of Materials Science, Nanyang Technological University *Contacting Author: H.B. Su (hbsu@ntu.edu.sg)

15:15 **A Model for THz Silicon Nanotube Transistor**

Guangcun Shan, Miao Zhang*, and Wei Huang

[1] State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Shanghai, China, [2]Institute of Advanced Materials, Nanjing University of Posts and Telecommunications, Nanjing, China, *Contacting Author: Miao Zhang (fax:+86-21 62513510; email: spinor@163.com).

EC109

15:30 **Neural Network Model for Ballistic Carbon Nanotube Transistors**

R. Yousefi[1], K. Saghafi[2], M. K. Moravvej-Farshi[3], M. Shabani[4]

[1]Contacting Author: Department of Electrical Engineering, Sciences & Research Branch, Islamic Azad University, Tehran, Iran (Email: Yousefi@Novinpardazesh.ir). [2] Department of Electrical Engineering, Shahed University, Tehran, Iran. [3]Advanced Device Simulation Lab, Electrical and Computer Engineering Department, Tarbiat Modares University, Tehran, *Iran.* [4] Islamic Azad University, Nour branch

EC110

15:45 **Numerical Simulation on Novel Nano-Scale Lateral Double-Gate Tunneling Field Effect Transistor**

Frank He, Haijun Lou, Wang Zhou, Lin Chen, Yiwen Xu, Hao Zhuang, Xinnan Lin

Key Laboratory of Integrated Microsystems, Peking University Shenzhen Graduate School, Shenzhen, P.R .China； Key Laboratory of Microelectronic Devices and Circuits, Institute of Micro-electronics, School of Electronics and Computer Science, Peking University, P.R.China E-mail: frankhe@pku.edu.cn Tel: 86-10-62765916 Fax: 86-10-62751789

EC111

16:00 Break

Chair: Yaqing CHI, National University of Defense Technology

16:15 **Organic Thickness Dependence of Organic Field-Effect Transistor Devices based on Pentacene**

Rawat Jaisutti*, Student Member, IEEE, Wittawat Yamwong, Nithi Atthi, Sirapat Pratontep and Tanakorn Osotchan

[1]Center of Nanoscience and Nanotechnology, Department of Physics,Faculty of Science, Mahidol University, Bangkok, Thailand. [2] Thai Microelectronics Center, National Electronics and Computer Technology Center, National Science and Technology Development Agency, Chachoengsao, Thailand. [3] College of KMITL Nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand. *Contacting Author: R. Jaisutti is with the Center of Nanoscience and Nanotechnology, Department of Physics, Faculty of Science, Mahidol University, Bangkok, 10400, Thailand. (phone; +6622015770, fax: +6623547159, email; rawat_phytu@hotmail.com)

EC112

16:30 **Simulation Study on A New Dual-Material Nanowire MOS Surrounding-Gate Transistor**

Wang Zhou, Lining Zhang,Yiwen Xu, Lin Chen and Frank He

[1] The Key Laboratory of Integrated Microsystems, Peking University Shenzhen Graduate School, Shenzhen, China [2] TSRC, School of Electronic Engineering and Computer Science, Peking University, Beijing, China *Contacting Author: Frank He is with TSRC, School of Electronic Engineering and Computer Science, Peking University, Beijing 100871, China (phone: +86-10-62767915, fax: +86-10-62751789, email: hejin@szpku.edu.cn)

EC113

16:45 **Carrier Transport in Molecular Beam Epitaxially Grown GaAs/InAs Core-Shell Nanowires**

Harry E. Ruda*, Joe Salfi, Igor Saveliev, and Marina Blumin

KS113

Centre for Advanced Nanotechnology, University of Toronto, 170 College Street, Toronto, Ont. M5S 3E4, Canada. ruda@ecf.utoronto.ca

17:15 **Study on Electron Mobility in Nanoscale DG MOSFETs with Symmetric, Asymmetric and Independent Operation Modes**

Yiwen Xu, Lin Chen, Lining Zhang,Wang Zhou and Frank He
[1] The Key Laboratory of Integrated Microsystems, Peking University Shenzhen Graduate School, Shenzhen, China [2] TSRC, School of Electronic Engineering and Computer Science, Peking University, Beijing, China *Contacting Author: Frank He is with TSRC, School of Electronic Engineering and Computer Science, Peking University, Beijing 100871, China (phone: +86-10-62767915, fax: +86-10-62751789, email: hejin@szpku.edu.cn)

EC114

17:30 **Macromodeling of Realistic Single Electron Transistors for Large Scale Circuit Simulation**

Haiqin Zhong *, Yaqing Chi, He Sun, Chao Zhang and Liang Fang
School of Computer, National University of Defense Technology, Changsha, China.
*Contacting Author: Haiqin Zhong is with the School of Computer, National University of Defense Technology, Changsha, China. (phone: +86 013755119465; email charlesrain@163.com)

EC115

17:45 **nSET: Novel Simulation Method for Single-Electron Tunnel Device with 1-Dimension Multiple Islands**

Bingcai Sui*, Yaqing Chi, and Liang Fang
National Laboratory for Parallel and Distributed Processing, School of Computer, National University of Defense Technology,Hunan, 410073, China E-mail: Bingcaisui@nudt.edu.cn.

EC116

18:00 **Unified Physical Modeling and Analysis of Nanoscale MOSFET Devices and Circuit Simulation**

Mustafa M. El-MURADI*, Member IEEE , MOHAMED ELMANSOURI*
Electronic and Electric Engineering Department University of Al Fatah, Tripoli-Libya P.O Box 13275 Email: elmradi2005@yahoo.com, mansori82@yahoo.com

EC117

18:15 **The Valence Charge Polarization Induced by the Shorter and Stronger Bonds Between Under-coordinated Gold Atoms**

Xi Zhang,[1] Jer-lai Kuo, [2] Mingxia Gu, [3] Xiaofeng Fan,[2] Ping Bai,[3] Qing Gong Song, [4] and Chang Q Sun[1]*
[1] School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798, Singapore [2] School of Physical and Mathematical Science, Nanyang Technological University, Singapore 639798, Singapore [3] Advanced Photonics and Plasmonics Division, A*STAR Institute of High Performance Computing 1 Fusionopolis Way, Singapore 138632 [4] School of Science, Civil Aviation University of China, Tianjin 300300, China *Corresponding author: Chang Q Sun, email: ECQSun@ntu.edu.sg

EC118

Nanoelectronics Oral Session II

LT-13

Chair: Xin-Ping QU, Fudan University

11:15 **Atomistic Simulation of Graphene Nanoribbon Tunneling Transistors**

Jyotsna Chauhan and Jing Guo
Department of Electrical and Computer EngineeringUniversity of Florida, Gainesville, FL, 32611, USA. Email: guoj@ufl.edu

EC119

11:30 **Comparative Study on Nanostructural tailoring and Capacitance Properties of PPy/CNTs**

EC120

Nanocomposites Prepared by Chemical and Electrochemical Methods

Jie Wang, Jianbo Zhu, Youlong Xu*, Xiaofei Sun, Jingping Wang, and Xianfeng Du
Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education, Xi'an Jiaotong University, Xi' an 710049, PR China. *Contacting Author: Youlong Xu, (phone: 86-29-82665161; fax: 86-29-82665161; email: ylxuxjtu@mail.xjtu.edu.cn)

11:45 **Effect of Anodization Voltage on Electron Field Emission from Carbon Nanotubes in Anodized Alumina Template**

A. Wisitsoraat, D. Phokharatkul, K. Komin, S. Mongpraneet, A. Tuantranont
National Electronics and Computer Technology Center112 Thailand Science Park, Pahol Yothin Rd., Klong Laung, Pathumthani 12120 Thailand Tel: +662-564-6900, Fax: +662-5646756, Email: anurat.wisitsoraat@nectec.or.th

EC121

12:00 **Electrochemical Characterization of Ordered Microporous Carbons Containing Well-dispersed Platinum Nanoparticles**

Chunxia Zhao[1], Yunxia Yang[2], Xi Long[1], Paul Webley*[3] and Wen Chen*
[1] State Key Laboratory of Advanced Technology for Materials Synthesis and Processing; School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, China [2] Petroleum Resources, CSRIO, VIC 3168, Australia [3] Department of Chemical Engineering, Monash University, VIC 3168,Australia *Contacting Authors: Prof. Paul A. Webley: paul.webley@eng.monash.edu.au; Prof. Wen Chen: chenw@whut.edu.cn

EC122

12:15 **Enhanced Field Emission Properties of IrO_2 Coated Carbon Nanotube Bundle Arrays**

Yi-Min Chen[1], Jin-An Chen[1], Ying-Sheng Huang[1,*], Kuei-Yi Lee[1,2], and Kwong-Kau Tiong[3]
[1] Department of Electronic Engineering, National Taiwan University of Science and Technology, 43 Keelung Road, Section 4, Taipei 106, Taiwan [2] Graduate Institute of Electro-Optical Engineering, National Taiwan University of Science and Technology, 43 Keelung Road, Section 4, Taipei 106, Taiwan [3] Department of Electrical Engineering, National Taiwan Ocean University, Keelung 202, Taiwan *Contacting Author: Ying-Sheng Huang is with the Department of Electronic Engineering, National Taiwan University of Science and Technology, Taiwan (phone: +886-2-27336785; fax: +886-2-27333241; e-mail: ysh@mail.ntust.edu.tw)

EC123

12:30 Lunch

Chair: Daniel S P LAU, The Hong Kong Polytechnic University

14:00 **Highly Transparent and Conductive Carbon Nanotube Coatings Deposited on Flexible Polymer Substrate by Solution Method**

Gaozhi Xiao*, Ye Tao, Jianping Lu, and Zhiyi Zhang
Institute for Microstructural Science, National Research Council Canada *Contacting Author: Gaozhi Xiao is with the Institute for Microstructural Science,National Research Council, 1200 Montreal Road, Ottawa, Ontario K1A 0R6,Canada (phone: 1-613-991-6159; e-mail: george.xiao@nrc-cnrc.gc.ca)

EC124

14:15 **Identification of Different Concentrations of Antibody by Electrical Property of DLC Thin Films**

Vittaya Amornkitbamrung*[,1,2], Kridsanapan Srimongkon[1], Narit Faibut[1], and Samarn Saekow[2]
[1] Department of Physics, Faculty of Science, Khon Kaen University, Khon Kaen, Thailand.
[2] Integrated Nanotechnology Research Center, Khon Kaen University, Khon Kaen, Thailand.
*Contacting Author: Vittaya Amornkitbamrung is with the Integrated Nanotechnology Research

EC125

Center; Department of Physics, Faculty of Science, Khon Kaen University, Khon Kaen, 40002, Thailand (phone: +66-4320-3359; fax: +66-4320-3359; e-mail: vittaya@kku.ac.th).

14:30 **Large sensor array based on functionalized graphene devices**

Zhengtang Luo,[1,*] Daniel W. Singer,[1] Matthew E. Berck,[1] Luke A. Somers,[1] Lolita Rotkina, [2] Brett R. Goldsmith,[1] A.T. Charlie Johnson[1]

[1] Department of Physics and Astronomy, University of Pennsylvania,Philadelphia, PA, USA [2] Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA 19104, USA *Contacting Author: Zhengtang Luo is with Department of Physics and Astronomy, University of Pennsylvania, 209 S.33rd St., Philadelphia, PA 19104, USA (phone: 215-573-3659, fax: 215-898-2010, email: zhl@sas.upenn.edu).

EC126

14:45 **Hydrogen Sensors based on Pd-functionalized Single-walled Carbon Nanotubes**

Jun Min Lee[1], Seonghwa Ju[2], Yeongri Jung[2], Sung-Jin Kim[2]*, and Wooyoung Lee[1]*

[1] Department of Materials Science and Engineering, Yonsei University, 262 Seongsanno Seodaemun-gu, Seoul, 120-749, Korea [2] Division of Nano Science, Ewha Womans University, 11-1 Daehyun-Dong,Seodaemun-Gu, Seoul 120-750, Korea E-mail: wooyoung@yonsei.ac.kr (Wooyoung Lee). Telephone: +82-2-32772335 E-mail: sjkim@ewha.ac.kr (Sung-Jin Kim). Telephone: +82 232772335

EC127

15:00 **Direct Growth of Horizontally Aligned Carbon Nanotubes between Electrodes and Its Application to Field-Effect Transistors**

Yasuhiko Hayashi[1]*, B. Jang[1], T. Iijima[1], T. Tokunaga[2], R. A. Afre[1], M. Tanemura[1], and G. A. J. Amaratunga[3]

[1] Department of Frontier Materials, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya 466-8555, Japan [2] Department of Quantum Engineering, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8601, Japan [3] Electrical Engineering Division, Department of Engineering, University of Cambridge, 9 JJ Thomson Avenue, Cambridge CB30DE, United Kingdom E-mail: hayashi.yasuhiko@nitech.ac.jp

EC128

15:15 **Effects of Electrode Contact on Geometry structure and Transport Properties of the Graphene-based Nanomolecule Devices**

Zongling Ding, Jun Jiang[2], Haibo Shu, Xiaoshuang Chen*, and Wei Lu

[1]National Lab. Of Infrared Physics, Shanghai Institute for Technical Physics, Chinese Academy of Sciences, Yu Tian Road 500, Shanghai, China. [2]Department of Theoretical Chemistry, School of Biotechnology, Royal Institute of Technology, Stockholm, Sweden *Contacting Author: Xiao S. Chen is with the National Lab. Of Infrared Physics, Shanghai Institute for Technical Physics, Chinese Academy of Sciences, Yu Tian Road 500, Shanghai, China. (phone: 021-65420850-24309; fax: 021-65310734; e-mail: xschen@mail.sitp.ac.cn)

EC129

15:30 **Ion beam doping of semiconductor nanowires**

C. Borschel, R. Niepelt, S. Geburt, **C. Ronning***

Institute for Solid State Physics, University of Jena. Carsten.Ronning@uni-jena.de

KS111

16:00 Break

Chair: Yanfeng JIANG, North China University of Technology

16:15 **Indentation Creep and Hardness of a Sn-Ag-Cu Solder Reinforced with Ni-Coated Carbon Nanotubes**

Y.D. Han[1,2], H.Y. Jing[1], S.M.L. Nai[3], L.Y. Xu[1], C.M. Tan[2,3], J. Wei[3]*

EC130

[1] School of Materials Science and Engineering, Tianjin University, Tianjin, P.R. China [2] School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore [3] Singapore Institute of Manufacturing Technology, 71 Nanyang Drive, Singapore *Contacting Author: J. Wei is with Singapore Institute of Manufacturing Technology, 71 Nanyang Drive, Singapore 638075 (phone: 65-67938575; fax: 65-67916377; E-Mail: jwei@SIMTech.a-star.edu.sg)

16:30 **Mesoporous Activated Carbon From Amphiphilic Carbonaceous Material and Its Application in EDLC**

Jin Wang, Mingming Chen*, Chengyang Wang, and Jiaming Zheng
Key Laboratory for Green Chemical Technology of Ministry of Education, School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, PR China *Corresponding author: Mingming Chen is with School of Chemical Engineering and Technology, Tianjin University, China (Phone: +86-22-2789-0481; Fax: +86-22-2789-0481; E-mail: chmmxu@gmail.com). EC131

16:45 **Optoelectronic Application of Multi-layer Epitaxial Graphene on a Si Substrate**

R. Olac-vaw*, H.C. Kang, T. Komori, T. Watanabe, H. Karasawa, Y. Miyamoto, H. Handa, H. Fukidome,
T. Suemitsu, M. Suemitsu, V. Mitin and T. Otsuji
[1] Research Institute of Electrical Communication, Tohoku University, Sendai, Sendai, Japan [2] JST-CREST, Japan Science and Technology Agency, Tokyo, Japan [3] Electrical Engineering Department, University at Buffalo, The State University of New York, Buffalo, NY, USA *Contacting Author: Roman Olac-vaw is with the Research Institute of Electrical Communication, Tohoku University (on leave from Electrical Engineering Department, University at Buffalo, The State University of New York, Buffalo, NY, USA). 2-1-1 Katahira, Aoba-ku, Sendai 980-8577, Japan (phone: +81-022-217-6108; fax: +81-022-217-6106; e-mail: roman@riec.tohoku.ac.jp) EC132

17:00 **Relationship Between Electrical Properties and Structure for Modified Poly(3-hexylthiophene) Copolymer Thin Films**

Manas Sittishoktram*, Udom Asawapirom and Tanakorn Osotchan
[1] Center of Nanoscience and Nanotechnology, Department of Physics, Faculty of Science, Mahidol University, Bangkok, Thailand [2] National Nanotechnology Center, Thailand Science Park, Patumtani,Thailand *Contacting Author: M. Sittishoktram is with the Center of Nanoscience and Nanotechnology, Department of Physics, Faculty of Science, Mahidol University, Bangkok, 10400 Thailand (phone: +6622015750; e- mail: nus_phy@hotmail.com) EC133

17:15 **Self-rectifying Resistive Memory based on Au Nanocrystal-Embedded Zirconium Oxide for Crossbar Array Application**

Qingyun Zuo, Shibing Long, Qi Liu, Sen Zhang, Qin Wang,Yingtao Li, Yan Wang, and Ming Liu*
Lab of Nanofabrication and Novel Devices Integrated Technology, Institute of Microelectronics, Chinese Academy of Sciences, No.3, BeiTuCheng West Road, ChaoYang District, Beijing, 100029, China * Contacting Author: Ming Liu (E-mail: liuming@ime.ac.cn, Tel: 86-10-62007699, Fax: 86-10-82995583) EC134

17:30 **Selective Enrichment of Metallic and Semiconducting Single-Walled Carbon Nanotubes and Their Thin Film Properties**

Hongbo Li, Hehua Jin, Jing Zhang, Xiaonan Wen, Qingwen Li*
Suzhou Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences, Suzhou 215125, P. R. China Corresponding author: Qingwen Li, qwli2007@sinano.ac.cn EC135

17:45 **Microstructure and Electrical Properties of In-Situ annealed Carbon Films**

Maziar Shakerzadeh, Beng Kang Tay, Hang Tong Edwin Teo and Chong Wei Tan EC136

School of Electrical and Electronic Engineering, Nanyang Technological University, Nanyang Avenue,Singapore 639798, Singapore

18:00 **Temperature Analysis of Semiconducting Carbon Nanotube Resistance**

Sajjad Dehghani, Mohammad Kazem Moravvej-Farshi, and Mohammad Hossein Sheikhi*
Department of Electrical Engineering, Tarbiat Modares University, Tehran,Iran. *Contacting Author: Mohammad Hossein Sheikhi is with the School of Electrical Engineering, Shiraz University, Shiraz, Iran. (phone: +98-711 6286421; email: msheikhi@shirazu.ac.ir).

EC137

18:15 **Preparation and Opticalelectrical characteristics of conjugated polymer and functionalized multi-walled carbon tube composite**

Ding wen[1], Huangchao[2], Shi xingwu[2], Zhu baorong[2], Song zhongxiao[3], Bie Guojun[4], Liu Chunliang[1], Hou Xun[2]
[1] the Key Laboratory for Physical Electronics and Devices, Ministry of Education, School of Electric and Information Engineering, Xi'an Jiaotong University, Xi'an, China [2] Key laboratory of photonics technology for information, Shaanxi province, School of Electric and Information Engineering, Xi'an jiaotong University, Xi'an, China [3] School of material Engineering, Xi'an Jiaotong University, Xi'an, China [4] Xi-an Institute of Modern Chemistry, Xi'an, China *Contacting Author: Ding wen the Key Laboratory for Physical Electronics and Devices, Ministry of Education, School of Electric and Information Engineering,Xi'an Jiaotong University, Xi'an, China ,710049 (phone: 1-626-395-8477; fax: 1-626-584-9104; email: dingwen@mail.xjtu.edu.cn）.

EC138

Nanoelectronics Oral Session III

LT-15

Chair: Zhisong XIAO, Beihang University

11:15 **A Large Gap of Ar and Mixed Gas at Atmospheric Pressure RF-DBD Glow Discharges**

B. Li, Q. Chen*, Z Liu, Z Wang
Laboratory of Plasma Physics and Materials, Beijing Institute of Graphic Communication, Beijing, China lppmchenqiang@hotmail.com

EC139

11:30 **Atomic Contacts by Clock Movement**

Feiyu Zhou, Zhimao Yang*, Shengchun Yang
MOE Key Laboratory for Nonequilibrium Synthesis and Modulation of Condensed Matter, Xi'an Jiaotong University, Xi'an, China *Contacting Author: Zhimao Yang is with the Department of Materials Physics, Xi'an Jiaotong University, Xi'an, China, 710049, (phone: 86-29-82665995, fax: 86-29-82665995, email: zmyang@mail.xjtu.edu.cn)

EC140

11:45 **Bipolar resistance switching in multiferroic $BiFeO_3$ polycrystalline films**

Kuibo Yin, Mi Li, Yiwei Liu, Congli He, Bin Chen, Jinzhi Wang, Fei Zhuge, Run-Wei Li*, Ping Cui, Xiaoqing Pan
Ningbo Institute of Materials Technology and Engineering (NIMTE), Chinese Academy of Sciences (CAS), Ningbo, Zhejiang315201, P. R. China Email: runweili@nimte.ac.cn

EC141

12:00 **Characterization of Al_2O_3 Films grown by Electron Beam Evaporator on Si Substrates**

Myoung Yone Seo, Edward Namkyu Cho, Chang Eun Kim, Pyung Moon, and Ilgu Yun *
School of Electrical and Electronic Engineering,Yonsei University, 262 Seongsanno, Seodaemun-gu, Seoul 120-749, Korea *Contacting Author: iyun@yonsei.ac.kr

EC142

12:15 **Circuit Design of the Complementary Pixel Structure for a Wide Dynamic Range CIS**

Jinwoo Jung, Bomin Kwon, Jiman Kim, Juhong Park, Namtae Kim*, Yongsu Park**, Jewon Lee

EC143

and Hanjung Song
Department of Nano Engeering, Inje University *Department of Electronics and Intelligent Robotics Engineering ,Inje University **Department of Electronics, Chungcheong University
Email: hjsong@inje.ac.kr

12:30 Lunch

Chair: Chien-Neng LIAO, National Tsing Hua University

14:00 **Electrical Characterization and Conduction Mechanism of High-k $Ti_{1-x}Si_xO_2$ Gate Dielectrics**
Chang Eun Kim[a], Pyung Moon[a], Edward Namkyu Cho[a], Sungyeon Kim[b], Jae-Min Myoung[b], and Ilgu Yun[a,*]
[a] School of Electrical and Electronic Engineering, Yonsei University, 262,Seongsanno, Seodaemoon-gu, Seoul, 120-749, Korea [b] Department of Materials Science and Engineering, Yonsei University, 262,Seongsanno, Seodaemoon-gu, Seoul, 120-749, Korea *Contacting Author: Tel: +82-2-2123-4619, Fax: +82-2-313-2879 E-mail address: iyun@yonsei.ac.kr
EC144

14:15 **Formation of Cu or Cu_2O Nanoparticles embedded in a Polyimide Film for Nanofloating Gate Memory**
Dong Joo Choi and Young-Ho Kim*
Division of Materials Science and Engineering, Hanyang University, Seoul, 133-791, Korea E-mail: kimyh@hanyang.ac.kr
EC145

14:30 **Mechanically Flexible PZT thin films on Plastic Substrates**
Jong Hyun Rho, Joung Ho Ahn, Nae-Eung Lee, Jong-Hyun Ahn*
School of advanced Material Science and Engineering, SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University,Suwon, 440-746, Korea * Contacting Author: Jong-Hyun Ahn, Sungkyunkwan University (SKKU) 300 Cheonceondong, Jangan-gu,Suwon, Gyeonggi do, 440-746, Korea (email:ahnj@skku.edu).
EC146

14:45 **Novel All-Optical Logic Gate Using an Add-Drop Filter and Intensity Switch**
T.Threepak, S.Mitatha and P.P Yupapin
[1,2] Hibrid Computing Research Laboratory, Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok , Thailand [3] Advance Research Center for Photonics, Department of Applied Physics, King Mongkut's Institute of Technology Ladkrabang, Bangkok , Thailand *Contacting Author:T. Threepak is with the Hibrid Computing Research Laboratory ,Faculty of Engineer, King Mongkut's Institute of Technology Ladkrabang, Bangkok , Thailand (phone: +66 1371-7327; email:ktthanun@kmitl.ac.th)
EC147

15:00 **Raman Spectroscopy of Compositional Fluctuations in Spinel Zn_2TiO_4 Nanostructures**
Duangmanee Wongratanaphisan*, Theerapong Santhaveesuk, and Supab Choopun
Applied Physics Research Laboratory,Department of Physics and Materials science, Faculty of Science, Chiang Mai University, Chiang Mai 50200, THAILAND and ThEP Center, Commission Higher on Education, Ministry of Education, 328 Si Ayutthaya Rd., Ratchathewi, Bangkok 10400, THAILAND *Contacting Author: Duangmanee Wongratanaphisan is with the Applied Physics Research Laboratory, Department of Physics and Materials science, Faculty of Science, Chiang Mai University, Chiang Mai 50200, THAILAND. This work was partially supported by grants from Thailand Research Fund (TRF). (phone: -66-53-943375; fax: -66-53-357511; email: dwongrat@chiangmai.ac.th)
EC148

15:15 **Nano-Schottky Contacts Realized by Bottom-up Technique** EC149

D. B. Suyatin[1], J. Trägårdh[1], M. Messing[1], J. B. Wagner[2], L. Montelius[1], H. Pettersson[1,3,*] and L. Samuelson[1]

[1] Solid State Physics/The Nanometer Structure Consortium, Lund University, Box 118, S-221 00, Lund, Sweden;[2] Materials Chemistry, Lund University, Box 124, S-221 00 Lund, Sweden;[3] Center for Applied Mathematics and Physics, Halmstad University, Box 823, SE-301 18 Halmstad, Sweden

15:30 **In-situ Transmission Electron Microscopy Study of Nanotwinned Copper under Electromigration**

Chien-Neng Liao[1]*, Kuan-Chia Chen[1], Wen-Wei Wu[2], Lih-Juann Chen[1], K. N. Tu[3]

[1] Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan, Republic of China. [2] Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan, Republic of China. [3] Department of Materials Science and Engineering, University of California,Los Angeles, CA, USA *Contacting Author: Chien-neng Liao is currently with Department of Materials Science and Engineering, National Tsing Hua University; 101 Sce. 2 Kuang-Fu Rd.,Hsinchu, 30013 Taiwan, Republic of China (phone: +886-3-5723848; fax: +886-3-5722366; email: cnliao@mx.nthu.edu.tw)

EC150

15:45 **Investigation on Memory Characteristics of TiW Alloy Nanocrystals Embedded in Al_2O_3/SiO_2 Stacked Gate Dielectric**

Shiqian Yang, Qin Wang, Shibing Long, Member, IEEE, Manhong Zhang, Chenxin Zhu, Jing Liu, Ming Liu*, Member, IEEE

Laboratory of Nano-fabrication and Novel Devices Integrated Technology, Institute of Microelectronics, Chinese Academy of Sciences, No.3, BeiTuCheng West Road, ChaoYang District, Beijing, 100029, China * Contacting Author: Ming Liu (E-mail: liuming@ime.ac.cn, Tel: +86-10-62007699, Fax: +86-10-82995583)

EC151

16:00 Break

Chair: Ming LIU, The Institute of Microelectronics, CAS

16:15 **Comparative Analysis of Trap-based Program/Erase Behaviors with Tunnel Dielectric for SONOS Flash Memory**

*Dong Hua Li, Yoon Kim and **Byung-Gook Park

School of Electrical Engineering and Computer Science and Inter-university Semiconductor Research Center (ISRC), Seoul National University,Seoul, Korea. (Phone: +82-2 880 7279; E-mail: *donghua0213@snu.ac.kr*)

EC152

16:30 **Fully Integrated Circuit Design Aihara's Chaotic Neuron Model**

Jiman Kim , Jinwoo Jung, Bomin Kwon, Juhong Park, Namtae Kim*, Yongsu Park**, Jewon Lee and Hanjung Song

Department of Nano Engeering, Inje University *Department of Electronics and Intelligent Robotics Engineering ,Inje University **Department of Electronics, Chungcheong University Email: hjsong@inje.ac.kr

EC153

16:45 **Heat pipes-intergrated circuit coolers**

Ravibabu P Rajshekar.K Rohit Kumar Gupta.K

EEE department, ACE College of engineering, JNTUniversity, INDIA.ravi.dsm@gmail.com.

ECE department, CVR College of engineering, JNTUniversity, INDIA.rajshekark4u@gmail.com.

ECE department, CVR College of engineering, JNTUniversity, INDIA.rohitrkg.gupta@gmail.com

EC154

17:00 **Top Contact Organic Field Effect Transistors Fabricated using Photolithographic Processes**
Hong Wang, Zhuoyu Ji, Liwei Shang, Ming Liu*, Xinghua Liu, and Yingquan Peng
Laboratory of Nano-Fabrication and Novel Devices Integrated Technology,Institute of Microelectronics, Chinese Academy of Sciences, Beijing 100029,China; School of Physical Science andTechnology, Lanzhou University, Lanzhou 730000, China. *Contacting Author: Ming Liu with Institute of Microelectronics, Chinese Academy of Science, Beijing (phone: +86-10-8299 5578; fax: +86-10-82995583; email: liuming@ime.ac.cn).
EC155

17:15 **Turbidity Detection of Shrimp Taura Syndrome Virus by Loop-Mediated Isothermal Amplification Reaction**
Assawapong Sappat[1], Wansadaj Jaroenram[2], Wansika Kiatpathomchai[2, 3], Tanom Lomas[1] and Adisorn Tuantranont[1]*
[1]Nanoelectronics and MEMS Laboratory, National Electronics and Computer Technology Center, 112 Pahol yothin Rd., Klong Laung, Pathumthani 12120 THAILAND [2]CENTEX Shrimp, Faculty of Science, Mahidol University, Rama VI Road, Ratchathewi, Bangkok 10400 THAILAND [3]National Center for Genetic Engineering and Biotechnology, 113 Pahol yothin Rd., Klong Laung, Pathumthani 12120 THAILAND Email: assawapong.sappat@nectec.or.th
EC156

17:30 **Wetting Behaviour of Lead Free Solder on Electroplated Ni and Ni-W Alloy Barrier Film**
C. S. Chew*, A. S. M. A. Haseeb and M. R. Johan
Department of Mechanical Engineering, University of Malaya, 50603 Kuala Lumpur, Malaysia. *Contacting Author: C. S. Chew is with Department of Mechanical Engineering, University of Malaya, 50603 Kuala Lumpur, Malaysia (Tel: +603-7967 4492; Fax: +603-79675317, +603-7967 5281; email: chewcheesean@hotmail.com).
EC157

17:45 **Potential Future Generation Nanoscale MOS Device: Trigate (TG) or Double Gate (DG) FinFETs?**
Raisul Islam*, Emran Md. Amin, Md. Zunaid Baten, and Quazi D. M. Khosru
Department of Electrical and Electronic Engineering,Bangladesh University of Engineering and Technology, Dhaka-1000,Bangladesh *Contacting Author: Raisul Islam is with the Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology. (phone: +88-01715066787; email: raisul.islam@ieee.org).
EC158

18:00 **A novel technique to reduce delay in VLSI interconnects.**
Sandeep Saini and M.B. Srinivas
International Institute of Information technology – Hyderabad, India
saini_sandeep@research.iiit.ac.in
EC159

18:15 **The Optical Stability of III-V Nanocrystals**
Jianbing Zhang and Daoli Zhang*
Department of Electronic Science and Technology, Huazhong University of Science and Technology (HUST), Wuhan, China. *Contacting Author: Daoli Zhang, Department of Electronic Science and Technology, HUST, Wuhan, China. (phone: +86-27-87542894; fax: +86-27-87542693; e-mail: zhang_daoli@mail.hust.edu.cn)
EC160

Nanophotonics Oral Session I

LT-11

Chair: Yiping CUI, Southeast University

11:15 **Nanoplate Structure for Photocurrent Enhancement in Thin Film Solar Cell**
PC101

Ming Tang, Shu-Tong Chang*, Zingway Pei[1], Bing-Fong Hsieh
Department of Electrical Engineering, National Chung Hsing University, Taichung 40227, Taiwan
*Contacting Author: Shu-Tong Chang is with Department of Electrical Engineering, National Chung Hsing University, Taichung 40227, Taiwan. (phone: +886-4-22851549 ext. 702; email: stchang@dragon.nchu.edu.tw).

11:30 **Roll to roll fabrication of thin film silicon solar cells on nano-textured substrates.**
B.B. Van Aken, C. Devilee, M. Dörenkämper, M. Goris, M.C.R. Heijna, J. Löffler and W.J. Soppe* PC102
ECN Solar Energy, P.O. Box 1, 1755 ZG Petten, the Netherlands E-mail: soppe@ecn.nl

11:45 **Enhancement in Light Conversion Efficiency of Silicon Solar Cells by using Nanoimprint Anti-reflection Layer**
Z. Y. Chen and K. W. Sun* PC103
Department of Applied Chemistry, National Chiao Tung University, Hsinchu, Taiwan *Email: kwsun@mail.nctu.edu.tw

12:00 **Semiconductor nanowires as a bottom-up approach to realize nanoelectronic and nanophotonic devices**
Lars Samuelson KS114
Lund University, Solid State Physcis/the Nanometer Structure Consortium, Box 118, S-221 00 Lund, Sweden. E-mail: lars.samuelson@ftf.lth.se

12:30 Lunch

Chair: Yiping CUI, Southeast University

14:00 **Structural, Optical, and Electrical Properties of Silicon Nanowires for Solar Cells**
Thomas Stelzner[1]*, Vladimir A. Sivakov[1], Andreas Berger[1,2], Björn Hoffmann[1], Stefaan De Wolf[3], Christophe Ballif[3], Dongfeng Zhang[4], Johann Michler[4], and Silke H. Christiansen[1,2]
[1] Institute of Photonic Technology, Jena, Germany. [2] Max-Planck-Institute of Microstructure Physics, Halle, Germany. [3] Ecole Polytechnique Fédérale de Lausanne (EPFL), Institute of Microengineering (IMT), Neuchâtel, Switzerland. [4] Laboratory for Mechanics of Materials and Nanostructures, Empa Materials Science and Technology, Thun, Switzerland. *Contacting Author: Thomas Stelzner is with Institute of Photonic Technology, Albert-Einstein-Str. 9, D-07745 Jena, Germany (phone: +49-03641-206446; fax: +49-03641-206499; e-mail: thomas.stelzner@ipht-jena.de) PC104

14:15 **Numerical Modeling of the CIGS Thin Film Solar Cell with Varied Defect Density and Ga Content**
Minchao Zhou, Hao Ye, Yong Fu, Dayuan Xiong and Fangmin Guo* PC105
Key Laboratory of Polar Materials and Devices, Ministry of Education, East China Normal University *Contacting Author: fmguo@ee.ecnu.edu.cn

14:30 **Highly efficiency enhancement of ZnO nanorods as an electron transport layer in inverted organic/inorganic solar cells with dye and buffer layer**
Yue Yan，Suling Zhao*，Zheng Xu，Dawei Wang,
Institute of Optoelectronic Technology, Beijing Jiaotong University, Beijing, 100044, China Key Laboratory of Luminescence and Optical Information (Beijing Jiaotong University), Ministry of Education，Beijing 100044，China * Corresponding author: slzhao@bjtu.edu.cn, 86-10-51688675 PC106

14:45 **Strategy toward Two Bands Tandem Organic Dye Sensitized Solar Cell**
Xichuan Yang*, Chao Teng, Yan Hao, Licheg Sun* PC107

State Key Laboratory of Fine Chemicals, DUT-KTH Joint Education and Research Center on Molecular Devices, Dalian University of Technology (DUT), 158 Zhongshan Rd. 116012 Dalian, China. Fax: +86-411-83702185; Tel.:+86-411-39893886; E-mail yangxc@dlut.edu.cn.

15:00 **Novel Mesoporous TiO_2 Spheres for Dye Sensitized Solar Cells**

Y.-B. Cheng[1]*, D. Chen[2], F. Huang[1], R. Caruso[2]

[1] Department of Materials Engineering, Monash University,Melbourne, Victoria 3800 Australia [2] School of Chemistry, The University of Melbourne,Melbourne, Victoria 3010, Australia *Contacting Author: Yi-Bing Cheng, email:yibing.cheng@eng.monash.edu.au

PC108

15:15 **Hybrid Inorganic-Organic Films with Benzaldehyde-Based Chromophore for Electro-Optic Device**

Yuanjing Cui[1], Jingting Hu[2], Jiancan Yu[1], Jingyan Qiu[2], Liying Liu[2], Lei Xu[2] and Guodong Qian[1]*

[1] Department of Materials Science and Engineering, State Key Lab of Silicon Materials, Zhejiang University, Hangzhou 310027, PR China. [2] Department of Optical Science and Engineering, Fudan University, Shanghai, 200433, PR China. *Contacting Author: Guodong Qian is with the Department of Materials Science and Engineering, State Key Lab of Silicon Materials, Zhejiang University, Hangzhou 310027, PR China. (phone: +86-571-87952334; email: gdqian@zju.edu.cn).

PC109

15:30 **Research on the photoelectric characteristics of a double barrier structure with quantum dots-quantum well inserted in central well**

Shengwei Zhu, Jianqiang Han, Lang. Fan, Dayuan Xiong and Fangmin Guo*

Key Laboratory of Polar Materials and Devices, Ministry of Education, East China Normal University *Contacting Author: fmguo@ee.ecnu.edu.cn

PC110

15:45 **Strong Exciton-Photon Coupling in Layered Perovskites Embedded Low-Q Microcavity**

K. Pradeesh and G.Vijaya Prakash*

Nanophotonics Lab, Department of Physics, Indian Institute of Technology Delhi, New Delhi, India-110016 *prakash@physics.iitd.ac.in

PC111

16:00 Break

Chair: Peng JIN, Institute of Semiconductors, CAS

16:15 **Engineering of plasmonic effects in photodetectors and high-efficiency photovoltaics**

Edward T. Yu

The University of Texas at Austin, Email: ety@ece.utexas.edu

KS122

16:45 **Study on the performance of Nano-optoelectronics device: InGaAs/GaAs VLW-QWIP**

D. Y. Xiong, F. M. Guo* W. E. Zhang

Key Laboratory of Polar Materials and Devices, Ministry of Education, School of Information Sciences and Technology, East China Normal University, Shanghai 200241, China, *Contacting Author: fmguo@ee.ecnu.edu.cn

PC112

17:00 **Photoconductive Characteristic in Individual Tungsten Oxide Nanowire**

Li Gong[1], Jian Chen[1]*, Weihong Zhang[1], Shanghui Chen[2] and Fangyan Xie[1]

[1]Instrumentation Analysis & Research Center, Sun Yat-sen University, Guangzhou, PRC [2] Science of Physics and Engineering, Sun Yat-sen University, Guangzhou, PRC *Contacting Author: Jian Chen is with Instrumentation Analysis & Research Center, Sun Yat-sen University, Guangzhou, PRC. (Phone: 8620 84113215; Email: puscj@mail.sysu.edu.cn

PC113

17:15 **Coupled THz waveguide utilizing long-range surface plasmon polaritons on dual-grating**

Dongbin Tian*, Huiwu Zhang, Qiye Wen, Yunsong Xie

PC114

School of Microelectronic and Solid-state Electronic, University of Electronic Science and Technology of China, Chengdu, 610054, China tiandongbin@yahoo.com.cn

17:30 **Design and Analysis of Terahertz Surface-Emitting Distributed-Feedback Lasers with Circular Metal Grating**
S.F. Yu* and X.F. Li
School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798 E-mail : esfyu@ntu.edu.sg
PC115

17:45 **Modeling of THz Concentric Circular Metal Grating with TM Polarization**
X. F. Li* and S. F. Yu
School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798 *xfli@ntu.edu.sg
PC116

18:00 **THz Light Pulse Generation and Storage within an Embedded Optical Waveguide System**
P. Udomariyasap[1], S. Noppanakeepong[1], S. Mitatha[2], and P.P. Yupapin[3]
[1] Department of Telecommunication Engineering, Faculty of Engineering, [2] Hybrid Computing Research Laboratory,Faculty of Engineering, [3] Advanced Research Center for Photonics, Faculty of Science, All authors are with King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand. *Contacting Author: P. Udomariyasap is with the Department of Telecom munication Engineering, Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand. (email:s2610113@kmitl.ac.th).
PC117

18:15 **Broadband Spectrometers Based on Nano-scale Difference Interferometers**
T. Yang, C. C. Li, and H. P. Ho, Member, IEEE
Department of Electronic Engineering, Center for Advanced Research in Photonics, The Chinese University of Hong Kong, Shatin, N. T., Hong Kong SAR, China (phone: +852 2609-8279; fax: +852 2603-5558; e-mail: hpho@ee.cuhk.edu.hk).
PC118

NanoPhotonics Oral Session II

LT-7

Chair: Kok-Wai CHEAH, Hong Kong Baptist University

11:15 **Anti-Bunching from Plasmon Induced Non-Blinking Single CdSe/ZnS Quantum Dot**
Xiao-Wei Wu, Ming Gong, Chun-Hua Dong, Jin-Ming Cui, Yong Yang, Zheng-Fu Han*, Guang-Can Guo
Key Laboratory of Quantum Information, University of Science and Technology of China, CAS, Hefei, 230026, People's Republic of China *Contacting Author: zfhan@ustc.edu.cn
PC119

11:30 **Polarization Symmetry of Photoluminescence from PbS Quantum Dots**
Junjiang Cai and Kohki Mukai[1]
Department of Solid State Materials and Engineering, Graduate School of Engineering, Yokohama National University 79-5 Tokiwadai, Hodogaya-Ku, Yokohama, 240-8501, Japan e-mail:mukai@ynu.ac.jp
PC120

11:45 **Theoretical aspects of photon emission from a single quantum dot nanocavity system**
Guangcun Shan[1,2], Wei Huang[2,3] , Miao Zhang[1]
[1] State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai 200050, China [2] Jiangsu Key Laboratory for Organic Electronics and Information Displays, Institute of Advanced Materials, Nanjing University of Posts and Telecommunications, Nanjing 210003, China [3] Faculty of
PC121

Engineering, National University of Singapore, Singapore 117576, Republic of Singapore Email: spinor@163.com,guangcunshan@mail.sim.ac.cn Fax: +86-21- 62511070

12:00 **Competition between Surface Trapping and Nonradiative Energy Transfer**

Zhenling Yang*, Yanqiang Yang and Qingkun Meng
Center for Condensed Matter Science and Technology, Harbin Institute of Technology, Harbin, China *Contacting Author: Zhen L. Yang is with Center for Condensed Matter Science and Technology, Harbin Institute of Technology, Harbin, China. (phone: +86 451-86418440, email: zlyang713@126.com)

PC122

12:15 **Study on Broadband Emitting Self-Assembled Quantum-Dot Material and Devices**

P. Jin[1], X. Q. Lv[1], N. Liu[1], Z. Y. Zhang[2] and Z. G. Wang[1*]
[1] Key Laboratory of Semiconductor Materials Science, Institute of Semiconductors, Chinese Academy of Sciences, Beijing 100083, P. R. China. [2] Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, S1 3JD, U. K. [*] Contacting Author: Z. G. Wang (phone: 8610-82304250; fax: 8610-82305002; e-mail: zgwang@red.semi.ac.cn).

PC123

12:30 Lunch

Chair: Kok-Wai CHEAH, Hong Kong Baptist University

14:00 **Enhanced UV lasing emission from ZnO-MgO core-shell structure**

H. Y. Yang*[1], S. F. Yu[1] and T. Wu[2]
1 School of Electrical & Electronic Engineering, Nanyang Technological University Singapore 639798 2 School of Physical & Mathematical Sciences, Nanyang Technological University Singapore 639798 hyyang@ntu.edu.sg

PC124

14:15 **A Luminescent Nano-Scale Metal-Organic Framework for Sensing Small Molecules**

Hui Xu[1], Zhongshang Dou[1], Yuanjin Cui[1], Banglin Chen[2] and Guodong Qian[1]*
[1.] Department of Materials Science and Engineering, State Key Lab of SiliconMaterials, Zhejiang University, Hangzhou 310027, PR China. [2.] Department of Chemistry, University of Texas-Pan American, Edinburg, TX 78541-2999, *Contacting Author: Guodong Qian is with the Department of Materials Science and Engineering, State Key Lab of Silicon Materials, Zhejiang University, Hangzhou 310027, PR China. (phone: +86-571-87952334; email: gdqian@zju.edu.cn).

PC125

14:30 **Photonic Nanostructures Self-assembled from Charge Transfer Complexes**

V. A. L. Roy[1&2], Mai-Yan Yuen[1], Wei Lu[1], Steven C. F. Kui[1], Man-Ho So[1], Stephen Sin-Yin Chui[1], and Chi-Ming Che[1]
[1] Department of Chemistry and HKU-CAS Joint Laboratory on New Material, The University of Hong Kong, Pokfulam Road, Hong Kong. [2] Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong. E-mail val.roy@cityu.edu.hk; cmche@hku.hk

PC126

14:45 **Assemblies of CdSe and Polyethylene Glycol Derivatives for Fluorescent Hybrid Microspheres**

Tan Fang, Kaiguo Ma, Yuting Guo, Zilong Li and Haiqing Guo*
the Beijing National Laboratory for Molecular Sciences, State Key Laboratory of Rare Earth Materials Chemistry and Applications, College of Chemistry and Molecular Engineering, Peking University, Beijing, 100871, China *Contacting Author: Haiqing Guo (phone and fax: +86 10-62755702; email:guohq@pku.edu.cn).

PC127

15:00 **Improving The Efficiency of Organic Light Emitting Diodes Using Quantum Well Structure** PC128

Chung-Ming Wu, Shui-Hsiang Su*, Guo-Yuan Lian, and Meiso Yokoyama
School of Electrical Engineering and Information science, Department of Electronic Engineering, I-Shou Universit, Kaohsiung, Taiwan *Contacting Author: Shui-Hsiang Su is with the School of Electrical
Engineering and Information science, Department of Electronic Engineering, I-Shou University , Kaohsiung County , Taiwan (phone: + 886-7-6577711; email: shsu@isu.edu.tw)

15:15 **Synthesis and luminescent behavior of $Mn_{(1-x)}S:Dy_x$/ZnS core-shell nanocrystals**

Lihua Li, Ruishi Xie, Qiang Chen, Xi Yue, Dingquan Xiao and Jianguo Zhu*
College of Materials Science and Engineering, Sichuan University, Chengdu 610064, China
E-mail:lilihua@163.com

PC129

15:30 **Organic 1D Nanostructures for Miniaturized Photonics**

Hongbing Fu,* Yongsheng Zhao, Qiao Liao, JiannianYao
Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, P.R. China *Contacting Author: hongbing.fu@iccas.ac.cn

PC130

15:45 **Photophysical Characteristics of Green Fluorescent Proteins Embedded in Mesoporous Silica Hosts**

Yujie Ma[1], Prayanka Rajendran[1], Christian Blum[1], Dominik Brühwiler[2], and Vinod Subramaniam[1]*
[1] BioPhysical Engineering Group, MESA+ Institute for Nanotechnology and MIRA Institute for Biomedical Technology & Technical Medicine, Faculty of Science and Technology, University of Twente, The Netherlands. [2] Institute of Inorganic Chemistry, University of Zürich, Switzerland. *Contacting Author: Vinod Subramaniam is with the BioPhysical Engineering Group, Faculty of Science and Technology, University of Twente, P.O.Box 217, 7500 AE Enschede, The Netherlands (phone: +31-53-4893158; fax: +31-53-4891105; email: v.subramaniam@tnw.utwente.nl).

PC131

16:00 Break

Chair: Jinsong WEI, Shanghai Institute of Optics and Fine Mechanics, CAS

N. V. Gaponenko, Balarusian State University of Informatic and Radioelectronics

16:15 **CdTe Quantum Dots Modified Fluorescent Polymer Microspheres by Self-assembly**

Xiaoyu Chen, Xiuxue Sun, Ping Li, Jimei Zhang, Shichao Xu, Guo Zheng, and Zhao Dai*
the Key Laboratory of Hollow Fiber Membrane Materials and Membrane Processes, Ministry of Education, School of Environment and Chemical Engineering, Tianjin Polytechnic University, 300160 Tianjin, China *Contacting Author (phone: +86-22-24528172; email: daizhao@gmail.com).

PC132

16:30 **Sol-Gel Synthesis and Luminescence Properties of Titania and Barium Strontium Titanate, doped with Lanthanides, in Porous Anodic Alumina**

Nikolai V. Gaponenko and Taekwon Kim
Laboratory of Nanophotonics, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus (Phone: +375172938869; email: nik@nano.bsuir.edu.by).

PC133

16:45 **Rational Control of Anisotropic Nanocomposites for Engineered Nanocatives and SERS Application**

Tao Chen, Li Huey Tan and Hongyu Chen*
Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University (phone: +65-63168795; fax: +65-67911961; e-mail: hongyuchen@ntu.edu.sg)

PC134

17:00 **Tip-enhanced Rayleigh Scattering and Photoluminescence from Semiconductor Nanoparticles**
Yoshihiro Ogawa and Fujio Minami
Department of Physics, Tokyo Institute of Technology minami@ap.titech.ac.jp
PC135

17:15 **Near Field Properties of Monolayers of Colloidal Polystyrene Microspheres on Silicon**
S. M. Huang[1,*] , Z. A. Wang[1], Z Sun[1], Z. B. Wang[2], Boris Luk'yanchuk[3]
[1] Engineering Research Center for Nanophotonics and Advanced Instrument, Ministry of Education, Department of physics, East China Normal University, North Zhongshan Rd. 3663, Shanghai 200062, P. R. China. [2] Laser Processing Research Centre, School of Mechanical, Aerospace and Civil Engineering, University of Manchester, Sackville Street, Manchester, M60 1QD, UK. [3] Data Storage Institute, DSI Building, 5 Engineering Drive 1, Singapore 117608, Republic of Singapore. *Contacting Author: S. M. Huang is with Engineering Research Center for Nanophotonics & Advanced Instrument, Ministry of Education, East China Normal University, North Zhongshan Rd. 3663, Shanghai 200062, China (phone: 86-21-62233227;fax: 86-21-62232413;email: smhuang@phy.ecnu.edu.cn
PC136

17:30 **Raman Mapping Probing of V_2O_5 Waveguiding Nanoribbons**
Ting Yu[*], Bin Yan, Yumeng You, Chaoling Du, Zhe Zheng, Zexiang Shen
Division of Physics and Applied Physics, School of Physical & Mathematical Sciences, Nanyang Technological University, Singapore 637371, Singapore *Contacting Author: yuting@ntu.edu.sg
PC137

17:45 **Aqueous Solution Syntheses of Palladium Nanorods and Gold Octahedra and Their Assembly**
Yi-Hsiu Chen, Chia-Chien Chang, Hsin-Lun Wu, and Michael H. Huang*
Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan *Contacting Author: Michael H. Huang is with the Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan (phone: +886-3-5718472; e-mail: hyhuang@mx.nthu.edu.tw).
PC138

18:00 **High Purity Separation of Nanoparticle Dimers and Trimers for SERS Hot Spots**
Gang Chen, Yong Wang, Miaoxin Yang, Li Huey Tan, Hongyu Chen*
Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371, Singapore *Contacting Author: phone: +65-63168795; fax: +65-67911961; e-mail: hongyuchen@ntu.edu.sg
PC139

18:15 **High Efficiency Light Extraction of GaAs Semiconductors coated with Au Nanoparticles**
Xiuli Zhou[1], Lumin Wang[2,3], Kai Sun[2]
[1] School of Physical Electronics, University of Electronic Science and Technology of China, Chengdu 610054, China [2] Department of Materials Science and Engineering, University of Michigan, Ann Arbor, MI 48109, USA [3] Department of Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI 48109, USA *Contacting Author: zxli@uestc.edu.cn
PC140

Nanobiology Oral Session

LT-1

Chair: Zhongze GU, Southeast University

11:15 **A More Efficient Pathway for Synthesis of Zinc-doped Superparamagnetic Iron Oxide Nanocrystals with Enhanced Saturation Magnetization**
Chen Feng, Wenbo Bu*, Jianlin Shi*
State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Chinese Academy of Sciences, 1295 Dingxi Road, Shanghai 200050, China
BC101

Corresponding author: Jianlin Shi, email: jlshi@mail.sic.ac.cn; Wenbo Bu, email: wbbu@mail.sic.ac.cn

11:30 **A Synthetic Strategy of Quantum Dot-Bioconjugate**

Qiangbin Wang[1]*, Hao Yan[2,3], Dong-Kyun Seo[2]

[1] Suzhou Institute of Nano Tech and Nano Bionics, Chinese Academy of Sciences, Suzhou, 215125, China [2] Department of Chemistry and Biochemistry, Arizona State University, Tempe, 85287, USA 3 The Biodesign Institute, Arizona State University, Tempe, 85287, USA E-mail: qbwang2008@sinano.ac.cn

BC102

11:45 **Catalytic Behaviors in Modulating Enzymatic Activity through Different-sized Gold Nanoparticles**

Chung-Shu Wu[1], Chia-Tien Wu[1], Chieh Chen[1], Chung-Chih Huang[1], Yu-Lin Yeh[1], Yuh-Shyong Yang[2], and Fu-Hsiang Ko*[1]

[1]Institute of Nanotechnology, and Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu 300, Taiwan [2]Department of Biological Science and Technology, National Chiao Tung University, Hsinchu 300, Taiwan *Contacting Author: Fu-Hsiang Ko is with the Institute of Nanotechnology, and Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu 300, Taiwan (phone: +886-3-5712121; e-mail: fhko@mail.nctu.edu.tw).

BC103

12:00 **Electrochemical Behavior of Gold Nanoparticles Modified Nitrogen Incorporated Diamond-like Carbon Electrode and Its Application in Glucose Sensing**

Aiping Liu, Erjia Liu *, Guocheng Yang, Wenguang Ma, and N.W. Khun

School of Mechanical and Aerospace Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore *Contacting Author: mejliu@ntu.edu.sg, liuaiping1979@gmail.com

BC104

12:15 **Kinetic Study of Protein Formation and Digestion by Quartz Crystal Microbalance**

Tippavan. Hongkacharn*, Verawat Champreda, Toemsak Srikhirin, Thidarat Wangkam and Tanakorn Osotchan

Center of Nanoscince and Nanotechnology, Department Physics, Faculty of Science, Mahidol University, Bangkok, Thailand National Center for Genetic Engineering and Biotechnology (BIOTEC), National Science and Technology Development Agency, Thailand *Contacting Author: Tippavan Hongkacharn is with the Department Physics, Faculty of Science, Mahidol University, Bangkok, Thailand (Phone: +66 2 2015750; e-mail: ying_wow@hotmail.com)

BC105

12:30 Lunch

Chair: Deling KONG, Nankai University

14:00 **Engineering the Optical Properties of Gold Nanocages for Biomedical Applications**

Claire M. Cobley, **Younan Xia***

Department of Biomedical Engineering, Washington University, St. Louis, MO 63130, USA. Email:xia@biomed.wustl.edu

KS119

14:30 **Micro-Diaphragm Resonating Biosensors in Higher Frequency Modes**

M. Olfatnia, T. Xu, J.M. Miao, L.S. Ong

School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore Email: m070056@ntu.edu.sg

BC106

14:45 **Monodisperse and Water-Soluble LaF_3/$LaPO_4$: Ce,Tb Nanocrystals via a Microfluidic**

BC107

Reactor for Shape-Control and Bio-Label

Xiaoxu Zhu[1], Qinghong Zhang[2], Yaogang Li[2] and Hongzhi Wang[1]*

[1] State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, Donghua University [2] Engineering Research Center of Advanced Glasses Manufacturing Technology, MOE, Donghua University, Shanghai 201620, People's Republic of China *Contacting Author: Hongzhi Wang, phone: 021-67792881; fax: 021-67792855; e-mail: wanghz@dhu.edu.cn.

15:00 **Quantum Dots Modified Molecular Beacons as Fluorescent DNA Sensors with Different Acceptors**

Zhao Dai*, Ping Li, Xiuxue Sun, Jimei Zhang, Shichao Xu, Xueying Yin, and Guo Zheng

Key Laboratory of Hollow Fiber Membrane Materials and Membrane Processes, Ministry of Education, School of environment and Chemical Engineering, Tianjin Polytechnic University, 300160 Tianjin, China *Contacting Author (phone: +86-22-24528172; email: daizhao@gmail.com).

BC108

15:15 **Replication of Label-free Guided Mode Resonance Filter for Protein-sensors using UV Nanoimprinting Process with Metallic Nano Stamp**

Sungwoo Choi(1), Eikhyun Cho(1), Byungwook Kim(1), Jiseok Lim(1), Jeongwon Han(1), You Ra Heo(1), Seok-min Kim(2), Miroo Kim(3), Hyungil Jung(3) and Shinill Kang*(1)

[1]Nano Fabrication and Micro Optics National Research Laboratory, School of Mechanical Engineering, Yonsei University , Seoul, Korea [2]School of Mechanical Engineering, Chung-Ang University, Seoul, Korea [3]Department of Biotechnology, Yonsei University, Seoul, Korea *Contacting Author: Phone: +82-(02)-2123-2829, Fax: +82-(02)-362-2736, E-mail address: snlkang@yonsei.ac.kr

BC109

15:30 **Bio-Sensing and Monitor System Design with Micro Array Probes on an Active RFID Tag**

Jium-Ming Lin and Zhong-Qing Hou

707, Sec. 2 Wu-Fu Rd. Hsin-Chu, Taiwan, 30012 *Contacting Author: Jium-Ming Lin, jmlin@chu.edu.tw

BC110

15:45 **Gold Nanoparticles based Colorimetric Assay for Bacterial Enzyme Identification and Inhibitors Screening**

Rongrong Liu and Bengang Xing*

Division of Chemistry and Biological Chemistry, School of Physical & Mathematical Sciences, Nanyang Technological University, Singapore, 637371 *Contacting Author: Bengang Xing is with the Division of Chemistry and Biological Chemistry, School of Physical & Mathematical Sciences, Nanyang Technological University, Singapore, 637371 (phone:65-63168758; e-mail: bengang@ntu.edu.sg).

BC111

16:00 Break

Chair: Donglu SHI, University of Cincinnati

Kuo Chu HWANG, National Tsing Hua University

16:15 **A Facile "Green" Synthesis of Ascorbic acid –Capped CdSe Nanoparticles**

[a, b]Oluwatobi .S. Oluwafemi* and [b]Johannes .R. Botha

[a] Department of Chemistry and Chemical Technology Walter Sisulu University, Private Bag XI, Mthatha 5117, Eastern Cape, South Africa [b] Department of Physics, Nelson Mandela Metropolitan University, P.O box 77000, Port-Elizabeth, 6031, South Africa. Corresponding author, email: oluwafemi.oluwatobi@gmail.com

BC112

16:30 **Fluorescent super parpamagnetic nanoparticles for medical diagnosis and treatment**

Donglu shi[1,6], H. S. Cho[1], Chris Huth[1], Hong Xu[2], H. C. Gu[2], G. M. Pauletti[3], Z. Y. Dong[4], J. Lian[5], R. C. Ewing[5]

[1] Department of Chemical and Materials Engineering, University of Cincinnati, Cincinnati, Ohio 45221 [2] Med - X Institute, Shanghai Jiao Tong University, Shanghai 200030, China [3] James L. Winkle College of Pharmacy, University of Cincinnati, Cincinnati, OH 45267 [4] Department of Internal Medicine, College of Medicine, University of Cincinnati, Cincinnati, Ohio 45221 [5] Departments of Geological Sciences, Nuclear Engineering & Radiological Sciences and Materials Science & Engineering, University of Michigan, Ann Arbor, Michigan 48109, [6] The Institute for Advanced Materials and Nano Biomedicine, Tongji University, Shanghai, China

BC113

16:45 **Mass-Sensitive and Resistive Detection of Bioanalytes - Synthetic Antibodies and Plastic Replicae**

Franz L. Dickert[1,]*, Peter A. Lieberzeit[1], Stefan Aigner[1], Christoph Langsam[1], Chonlatid Sontimuang[2] and Roongnapa Suedee[2]

[1] University of Vienna, Department of Analytical Chemistry and Food Chemistry, Vienna, Austria [2] Department of Pharmaceutical Chemistry, Prince of Songkla University Hat Yai, Thailand. Contacting Author: phone: +43/1/4277-52317, fax: +43/1/4277-9523, e-mail: Franz.Dickert@univie.ac.at

BC114

17:00 **Multiplex Bioassay with Photonic Suspension Array**

Yuanjin Zhao and Zhongze Gu*

[1]State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, Nanjing 210096, China. [2]Laboratory of Environment and Biosafety, Research Institute of Southeast University in Suzhou, Dushu Lake Higher Education Town, Suzhou 215123, China phone: 86-25-83795635; e-mail:gu@seu.edu.cn

BC115

17:15 **Quantum Dots Decorated Single Walled Carbon Nanotubes for Multimodal Cellular Imaging**

Ning Du, Bingdi Chen, Hui Zhang, and Deren Yang*

State Key Lab of Silicon Materials and Department of Materials Science and Engineering, Zhejiang University, Hangzhou, China. *Contacting Author: phone: 86-571-8795-3003; fax: 86-571-8795-2322; e-mail: mseyang@zju.edu.cn).

BC116

17:30 **RecA protein mediated nano-scale patterning of DNA scaffolds**

Christoph Wälti*, Rajan Sharma, Giles Davies

School of Electronic and Electrical Engineering, University of Leeds, LS2 9JT *Contacting Author: Dr C Wälti, c.walti@leeds.ac.uk

BC117

17:45 **Sensing Humidity Using Virus-Nanoparticle Assembly**

Chuanbin Mao,* Aihua Liu, and Gopal Abbineni

Department of Chemistry & Biochemistry, University of Oklahoma, Norman, Oklahoma 73019, USA. *Contacting Author: Phone: +1-405-325-4385, Fax: +1-405-325-6111, e-mail: cbmao@ou.edu

BC118

18:00 **A Portable Electrochemical Sensor for Caffeine and (-)Epigallocatechin gallate (EGCG) Based on Molecularly Imprinted Poly(Ethylene-co-Vinyl-Alcohol) Recognition Element**

I-Cheng Chung[1], Chih-Chun Chang[1], Han-Sheng Chiu[1], Shih-Fan Jiang[1], Mei-Hwa Lee [2], Bin-Da Liu [3],Chun-Yueh Huang[4,]* and Hung-Yin Lin[1,]*

[1]Department of Chemical and Materials Engineering, National University of Kaohsiung, Kaohsiung 811, Taiwan [2]Department of Materials Science and Engineering, I-Shou University, Kaohsiung 840, Taiwan [3]Department of Electrical Engineering, National Cheng Kung University,

BC119

Tainan 701, Taiwan [4]Department of Electrical Engineering, National University of Tainan, Tainan 700, Taiwan linhy@ntu.edu.tw

18:15 **Disposable Sensors Based on Chitosan Film Doped With Multi-Wall Carbon Nanotubes** BC120

Pornpimol Sritongkham and Adisorn Tuantranont
Nanoelectronics and MEMS Laboratory, National Electronics and Computer Technology Center (NECTEC) Pathumthani 12120, Thailand E-mail: pornpimol.sritongkham@nectec.or.th

Nanophysics Oral Session LT-12

Chair: Yugang WANG, Peking University

11:15 **An Innovative Monitoring of Residual Layer Thickness and Uniformity in Nanoimprint** TC101

Hong Hocheng*, and Wei-Hsuan Hsu
Department of Power Mechanical Engineering, National Tsing Hua University *Contacting Author: Hong Hocheng (Professor of National Tsing Hua University) hocheng@pme.nthu.edu.tw.

11:30 **Characteristics of Carbon Nanotube Based Micro-Bubble Generator for Thermal Jet Printing** TC102

Wenli Zhou[1, 2,]*, Yupeng Li[1], Weijun Sun[1], and Sanping Wan[1]
[1]Department of Electronic Science and Technology, Huazhong University of Science and Technology, Wuhan, China [2]Wuhan National Laboratory for Optoelectronics, Wuhan, China
Contact author: Wenli Zhou (phone: +86-27-87540028; email: wlzhou@mail.hust.edu.cn)

11:45 **Fabrication of intensity based fiber optic pH Sensor** TC103

Sarmila Basak [A] , Shibabrata Basak [B,]*, Rajesh Kumar [C] and P.K.Samanta [B,D]
[A] Department of Material Science, Jadavpur University, Jadavpur, India.[B]Department of Physics, IIT Kharagpur, Kharagpur, India.[C]Department of Physics, Sikkim Manipal Institute of Technology, Majitar, Sikkim, India.[D]Ghatal R. S. Mahavidyalaya, Ghatal, Paschim Medinipur,West Bengal,India
*Corresponding author: dolysona@gmail.com

12:00 **DNA Hybridization Enhancement using Piezoelectric Microagitation through Liquid Medium Coupling** TC104

Thitima Maturos[1], Kiattimant Rodaree[1], Tawee Pogfay[1], Sastra Chaotheiang[2], Kata Jaruwongrangsee[1],Anurat Wisitsorraat[1], Tanom Lomas[1], and Adisorn Tuantranont[1]
Nanoelectronics and MEMS laboratory, National Electronics and Computer Technology Center, Klong Luang, Pathumthani, Thailand National Center for Genetic Engineeting and Biotechnology, Klong Luang, Pathumthani, Thailand *Contacting Author: phone: 66-2-564-6900 ext. 2111; fax: 66-2-564-6756; e-mail: adisorn.tuantranont@nectec.or.th

12:30 Lunch

Chair: Wenli ZHOU, Huazhong University of Science and Technology

Wibool Piyawattanametha, National Electronics and Computer Technology Center

14:00 **Gels nad aerogel from colloidal nanocrystals** TC106

N. Gaponik,* A. Wolf, A.-K. Herrmann, T. Hendel, N. C. Bigall, V. Lesnyak, and A. Eychmüller
Physical Chemistry, TU Dresden, Bergstr. 66b, 01062 Dresden, GERMANY *Contacting Author: nikolai.gaponik@chemie.tu-dresden.de

14:15 **Hydrogen Dependent Surface Morphology Study of Plasma Deposited SiNx:H Films for two Gas Systems SiH4/NH3 and SiH4/N2** TC107

Siddheshwar Chopra[1], R.P. Gupta[2] and Souri Banerjee[*]
BITS, Pilani, Rajasthan

14:30 **Low- and high-content nano-loaded electroactive polyvinylidene fluoride polymer**

Supasarote Muensit[a,*] and Prissana Rakbamrung
Material Physics Laboratory, Physics Department, Prince of Songkla University, Songkhla, Thailand. aNANOTEC CENTER of Excellence at Prince of Songkla University, Songkhla, Thailand. *Contacting Author:. E-mail:supasarote.m@psu.ac.th TC108

14:45 **Optimal Design of 3-D Carbon Micro-electrode Array for Dielectrophoretic Manipulation of Nanoparticles in Fluids**

Zirong Tang*, Jie Gong, Rizwan Malik, Tielin Shi, Wuxing Lai and Shiyuan Liu
Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China. *corresponding author, 1037 Luoyu Road, Wuhan, China 430074 (phone: 86-27-87792241; fax: 86-27-87792413; e-mail: zirong@ mail.hust.edu.cn) TC109

15:00 **Solid Freeform Fabrication of Functionalized Ceramic Dental Crown via Selective Slurry Extrusion Process**

Anping Xu*, Dongbin Zhu, Yunxia Qu and Yushan Liu
School of Mechanical Engineering, Hebei University of Technology, Tianjin 300130, China
*Corresponding Author: Anping Xu, E-mail: xap@hebut.edu.cn TC110

15:15 **Large Area Graphene Layer Synthesis**

Kuen-Liang Chang[1]*, Kai-Hung Hsu[1], Chien-Min Sung[1,2],Ting-Ying Wu[1]

[1]Department of Material and Mineral Resources Engineering, National Taipei University of Technology, Taipei, Taiwan, R.O.C.[2]KINIK Company, Taipei, Taiwan, R. O. C. *Contacting Author: phone: 886-2-2771-2171-2738; fax: 886-2-2731-7185; email: oldbag195014@hotmail.com). TC111

15:30 **Microstructure of AZ91 Magnesium Alloys Subjected to Surface Mechanical Attrition Treatment**

HOU Li-feng[1,2], WEI Ying-hui[1,2]*, XU Bing-she[1,2],
[1] College of Materials Science and Engineering, Taiyuan University of Technology, Taiyuan 030024, P R China [2] Key Laboratory of Interface Science and Engineering in Advanced Materials of Taiyuan University of Technology, Ministry of Education, Taiyuan 030024, P R China
Corresponding author. Tel: +86 351 6018685; fax: +86 351 6018683 E-mail address: yhwei@public.ty.sx.cn TC112

15:45 **Piezomagnetic properties and shielding properties of amorphous and nanocrystalline powders / butyl rubber composite films**

XUXueJiao, ZHUZhengHou，SONGHui，WANZhenZhen，PENGHuan and HUANG JunFu
Department of Material Science and Engineering , NanChang University,NanChang, JiangXi, China
Phone: +86-13755633280. Email:z00708@sina.com.cn TC113

16:00 Break

Chair: Anping XU, Hebei University of Technology

Farzad Nasirpouri, Sahand University of Technology

16:15 **SiO_2-CNTs doped Nafion Membranes Applied in High Temperature PEM Fuel Cells**

Feng Xu, Shichun Mụ and Mu pan
State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan TC114

University of Technology, Wuhan 430070, China E-mail address: msc@whut.edu.cn

16:30 **DNA-templated Sunlight-induced Silver Nanowires**

Minqiang Li*, Liangbao Yang and Jinhuai Liu
Hefei Institute of Intelligent Machines, Chinese Academy of Sciences,Hefei 230031, People's Republic of China *E-mail address: mqli@iim.ac.cn

TC115

16:45 **Antibacterial Properties of AISI 420 Stainless Steel Implanted by Ag/Cu ions**

Hanshuang Zhang, Hongwei Ni*, Rongsheng Chen, Kaifu Huo, Wei Li, Weiting Zhan
Key Laboratory for Ferrous Metallurgy and Resources Utilization of Ministry of Education, School of Materials and Metallurgy, College of Chemical Engineering and Technology, Wuhan University of Science andTechnology, Wuhan 430081, China. *Corresponding author: Phone: +86-27-68862856, E-mail: nihongwei320@sohu.com

TC116

17:00 **A New Particle Detector Based on Processed Plastic Scintillating Fiber**

Yongjian Xu, Chundong Hu and Jun Li
Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China phone: +86-551 5592746; email: yjxu@ipp.ac.cn

TC117

17:15 **Synthesis and Purifications of Amorphous Carbon Nanotubes**

M. N. Ng* and M. R. Johan
Advanced Materials Research Laboratory, Department of Mechanical Engineering, University of Malaya, 50603 Kuala Lumpur, Malaysia *Contacting Author: Tel: +603-7967 4492; Fax: +603-7967
5317, +603-7967 5281; email: mengnee85@yahoo.co.uk

TC118

17:30 **Binarization Algorithm of Passport Image Based on Global Iterative Threshold and Local Analysis**

Zhiwen WANG [1,2], Shaozi LI [1],Songzhi SU[1], Guoqing XIE [3]
[1.] Cognitive Science Department of Xiamen University, Xiamen 361005, China; [2.] Department of Computer & Engineering, Guangxi University of Technology, Liuzhou,545006, China; [3.] Faculty of Software，Fujian Normal University，Fuzhou ,350007，China wzw69@126.com; szlig@xmu.edu.cn; songzhi@126.com; xgq72@163.com

TC119

17:45 **In vivo Real Time Imaging with Micromachined based Dual-axes Confocal Microscope**

W. Piyawattanametha[1-4] and M. J. Mandella[1,3]
[1]Edward L. Ginzton Laboratory, Stanford University, Stanford, CA 94305,USA. [2]National Electronics and Computer Technology Center (NECTEC),Pathumthani 12120, Thailand.[3]James H. Clark Center for Biomedical Engineering & Sciences Stanford University, Stanford, CA 94305, USA E-mail:wibool@gmail.com

TC120

18:00 **Effect of size and periodicity on magnetization of nickel dot arrays**

F. Nasirpouri[1,]*, A. Nogaret[2] and S.J. Bending[2]
[1]Department of Materials Engineering, Sahand University of Technology, Tabriz, Iran [2]Department of Physics, University of Bath, Bath BA2 7AY, UK *Contacting Author: F. Nasirpouri (Nasirpouri@sut.ac.ir)

TC121

18:15 **Magnetic tunable segments in multilayered nanowires**

F. Nasirpouri[1,]* and A. Nogaret[2]
[1]Department of Materials Engineering, Sahand University of Technology, Tabriz, Iran [2]Department of Physics, University of Bath, Bath BA2 7AY, UK Email: Nasirpouri@sut.ac.ir

TC122

Tuesday - Jan 5, 2010

Nanofabrication Oral Session I — LT-18

Chair: George X.S. ZHAO, National University of Singapore

10:45 **Functional Boron Nitride Nanotubes**
Dmitri Golberg*, Yoshio Bando, Chengchun Tang, Chunyi Zhi
International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Namiki1-1, Tsukuba, Ibaraki 305-004, Japan. KS206
E-mail: GOLBERG.Dmitri@nims.go.jp

11:15 **Investigation of Inner Surface of Silicon Microchannels Fabricated by Electrochemical Method**
Pengliang Ci [1], Jing Shi [1], Li Sun [1], Tao Liu [1], Lianwei Wang [1]*, and Paul K. Chu [2]
[1] Laboratory of Polar Materials and Devices, Ministry of Education, and Department of Electronic Engineering, East China Normal University, Shanghai 200241, China, [2] Department of Physics and Material Sciences, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China, FC201
E-mail: lwwang@ee.ecnu.edu.cn

11:30 **Low-Temperature Fabrication and Characterization of Ion-Induced Ge Nanostructures**
A. Miyawaki[1], T. Hayashi[1], P. Ghosh[1], M. Tanemura[1], *, Y. Hayashi[1], and T. Tokunaga[2]
[1]Department of Frontier Materials, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, FC202
Nagoya, Aichi, 466-8555, Japan. [2]Department of Quantum Engineering, Nagoya University, Hurou-cho, Chikusa-ku, Nagoya, Aichi, 464-0814, Japan, E-mail: tanemura.masaki@nitech.ac.jp

11:45 **Photocatalytic Decompositions of Gaseous HCHO over Ag/TiO_2 Nanotube Arrays**
Jingjing Du, Wen Chen*, Chunxia Zhao, Ying Dai
State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, and School of Materials Science and Engineering, Wuhan Uninversity of Technology, Wuhan 430070, China, FC203
E-mail: chenw@whut.edu.cn

12:00 **Photoreflectance Study of Strained GaAsN/GaAs T-junction Quantum Wires Grown by MOVPE**
Pawinee Klangtakai, Sakuntam Sanorpim*, Ryuji Katayama, and Kentaro Onabe
1Department of Physics, Faculty of Science, Chulalongkorn University, Phayathai Rd., Pathumwan, Bangkok 10330, Thailand 2Center of Innovative Nanotechnology, Chulalongkorn University, Bangkok, 10330 Thailand 3Institute for Materials Research (IMR), Tohoku University, Sendai, 980-8577 Japan 4Department of Advanced Materials Science, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba, 277-8561, Japan. E-mail: sakuntam.s@.chula.ac.th FC204

12:15 **Preparation of Composition-tunable Cadmium-rich CdS Nanotubes and Their Photocatalytic Performance**
Yuying Huang, Fengqiang Sun*, Zhenxun Huang and Qingsong Wu FC205
School of Chemistry and Environment, South China Normal University, E-mail: fqsun@scnu.edu.cn; fengqiangsun@yahoo.com.cn

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Giridhar Kulkarni, Jawaharlal Nehru Centre for Advanced Scientific Research

Sekhar Chandra Ray, University of the Witwatersrand

16:15 **Synthesis of Chalcopyrite $CuInSe_2$ Nanoparticles via a Facile Solvothermal Method**
Huiyu Chen[1], Seong-Man Yu[2], Dong-Wook Shin[2], and Ji-Beom Yoo[1, 2,]*
[1]School of Advanced Materials Science & Engineering (BK21), Sungkyunkwan University, Suwon, Republic of Korea. [2]SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon, Republic of Korea. E-mail:jbyoo@skku.edu — FC206

16:30 **Synthesis of One-dimensional (1D) Ge-based Ternary Oxide Nanostructures**
Yan Chaoyi, and Lee Pooi See*, IEEE member
School of Materials Science and Engineering, Nanyang Technological University, Singapore. *Contacting Author: Lee Pooi See is with School of Materials Science and Engineering, Nanyang Technological University, Singapore, (phone: 65-67906661; fax: 65-67909081; email: pslee@ntu.edu.sg) — FC207

16:45 **Electrochemical Performance of multi-walled Carbon Nanotube/Chitosan Composite**
Tingkai Zhao*, Tiehu Li
School of Materials Science, Northwestern Polytechnical University, Xi'an, China. *Contacting Author: Dr. Tingkai Zhao is working in the School of Materials Science, Northwestern Polytechnical University, 127# Youyi West Road, Xi'an 710072, China(phone: 86-29-8846-0337; fax: 86-29-8846-0337; email: ztk@nwpu.edu.cn). — FC208

17:00 **Template Synthesis of Hierarchically Ordered Nanoporous Oxide Membrane**
Xinyi Zhang, Dan Li, and Paul A Webley
Department of Chemical Engineering, Monash University, Clayton, VIC3800, Australia. (phone: 61-3-99051958; E-mail: xinyi.zhang@eng.monash.edu.au) — FC209

17:15 **The synthesis and photoelectric response of single-crystalline V_4O_7 Nanowires**
Jing Xu, Chenguo Hu*, Huayong Han, Mingquan He, Buyong Wan, Chuanhui Xia
Department of Applied Physics, Chongqing University, Chongqing, 400044, China. *Contacting author: Chenguo Hu is with Department of Applied Physics, Chongqing University, Chongqing, China. (phone: +86 23-65104741; email: hucg@cqu.edu.cn) — FC210

17:30 **The Use of Electroless Plating Deposition to Prepare Pd/γ-Al_2O_3 Nanofiber Catalyst**
Weimin Kang, Quanxiang Li, Bowen Cheng, Yuanlin Ren, and Xupin Zhuang
Tianjin Municipal Key Lab of Fiber Modification and Functional Fiber, Tianjin Polytechnic University, Tianjin, China, 300160 (*Contacting Author: Phone: +86+22+24528018; bowen63@126.com) — FC211

17:45 **Preparation of Novel Layered AgBr-Based Inorganic/Organic Nanosheets by Pulsed Laser Ablation in Aqueous Media**
Chun He[1,]*, Dong Shu[2], Mudar Abou Asi[1], Dehua Xia[1], and Minhua Su[1]
[1]School of Environmental Science and Engineering, Sun Yat-sen University, Guangzhou, 510275, China, [2]School of Chemistry and Environment, South China Normal University, Guangzhou, 510006, China, *Contacting Author: hechun@mail.sysu.edu.cn — FC212

18:00 **Dendritic Pt-Cu Bimetallic Nanocrystals with a High Electrocatalytic Activity towards** — FC213

Methanol Oxidation

Jintao Zhang, Jizhen Ma, Jianwen Jiang and X. S. Zhao*
Department of Chemical and Biomolecular Engineering, National University of Singapore, 4 Engineering Drive 4, Singapore 117576, Singapore. *Contacting Author: X. S. Zhao is with Department of Chemical and Biomolecular Engineering, National University of Singapore, 4 Engineering Drive 4, Singapore 117576, Singapore (phone: (65) 6516-4727; fax: (65) 6779-1936; e-mail: chezxs@nus.edu.sg

18:15 **Synthesis of CdS nanotubes by a paired cell method**

Yang Xiu-chun, Li Xiao-ning, Zhao Yin, Zou Xiao, Lu Wei, Hou Jun-Wei
School of Materials Science and Engineering, Tongji University, Shanghai 200092, China

FC214

Nanofabrication Oral Session II

LT-14

Chair: Aoneng CAO, Shanghai University

10:45 **Cell-based Biosensor System Using Micropatterned Polymer Nanofiber**

Hyun Jong Lee, Eunji Jang, Saemi Park, P. S. Keshava Murthy and Won-Gun Koh*
Department of Chemical and Biomolecular Engineering, Yonsei University, Republic of Korea. *Contacting Author: W.-G. Koh, E-mail:bml@yonsei.ac.kr.

FC215

11:00 **Effect of Calcination Temperature on the Electrospun MFe_2O_4 ($M=Ni_{0.25}$-$Cu_{0.25}$-$Zn_{0.5}$)**

Ekaphan Swatsitang [1,2], Likkhasit Wannasen[1], and Santi Maensiri [1,2]
[1]Small & Strong Material Group (SSMG), Department of Physics, Faculty of Science, Khon Kaen University, Khon Kaen, 40002 Thailand. [2]Intergrated Nanotechnology Research Center (INRC), Faculty of Science, Khon Kaen University, Khon Kaen, 40002 Thailand. Contacting Author: Ekaphan Swatsitang; Email address: ekaphan@kku.ac.th, Dr. Santi Maensiri; Tel.: +66-43-202222 to 9 ext. 12248; Fax: +66-43-202374; Email address: sanmae@kku.ac.th; santimaensiri@gmail.com

FC216

11:15 **Nanofountain Probes for Direct-Write Nanomanufacturing and *In Vitro* Single Cell Studies**

Owen Y. Loh and Horacio D. Espinosa*
Dept. of Mechanical Engineering, Northwestern University, o-loh@northwestern.edu, espinosa@northwestern.edu

FC217

11:30 **Nearly Monodispersed Perylene Nanotablets: Easy Fabrication and Unique Optical Properties**

Zhe-Chen Wang, Yan-Ping Ma, Yan-Xia Zhao, Xun-Lei Ding, and Sheng-Gui He*
Beijing National Laboratory for Molecular Sciences, State Key Laboratory for Structural Chemistry of Unstable and Stable Species, Institute of Chemistry, Chinese Academy of Sciences, Zhongguancun, Haidian, Beijing 100190, P. R. China. *Contacting Author, E-mail: shengguihe@iccas.ac.cn Fax: +86-10-62559373;Tel: +86-10-62536990

FC218

11:45 **Controlled Alignment of Electrospun Nanofiber on Inkjet Printed Patterns on Flexible Substrate**

Chavis Srichan, Chatdanai Lumdee, Andrew J. Medford, Tanom Lomas, Adisorn Tuantranont*
Nanoelectronics and MEMS Laboratory, National Electronics and Computer Technology Center, Thailand, E-mail * adisorn.tuantranont@nectec.or.th

FC219

12:00 **Hierarchical Self-Assembly of 1D and 2D Ordered Silver Nanoparticle Arrays on Block Copolymer Templates**

FC220

Zhongtao Shi[a], *, Yanfen Qin[a] , Youbin Yu[a] , Min Han[b]， and Guanghou Wang[b]
[a] School of Science, Ningbo University of Technology, Ningbo, China; [b] National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China. *Contacting Author: Zhongtao Shi (phone: +86-574-87081630; fax: +86-574-87616027; email: shizht@nbut.cn).

12:15 **Hybrid Synthesis and Processing Schemes for Highly-Ordered Polyaniline Nanoarchitectures**
A. Vlad[1], P. Jedrasik[2], C.A. Dutu[1], D.A. Serban[1], P. Guillet[3], C.-A. Fustin[3], U. Södervall[2], J.F. Gohy[3] and S. Melinte[1]*
[1]Laboratoire de Dispositifs Intégrés et Circuits Electroniques, Université catholique de Louvain, B-1348 Louvain la Neuve, Belgium. [2]Department of Microtechnology and Nanosciences MC 2, Chalmers University of Technology, SE-412 96 Göteborg, Sweden. [3]Unité de Chimie des Matériaux Inorganiques et Organiques, Université catholique de Louvain, Place L. Pasteur 1, B-1348 Louvain-la-Neuve, Belgium *Contacting Author: Sorin Melinte (phone: +32-10-47-9309; fax: +32-10-47-2598; email:sorin.melinte@uclouvain.be)
FC221

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Hongyu CHEN, Nanyang Technological University

Pooi See LEE, Nanyang Technological University

16:15 **Strategies for Controlling Nanoscale Assembly**
Federico Rosei
Canada Research Chair in Nanostructured Organic and Inorganic Materials INRS Energie, Materiaux et Telecommunications, Université du Québec 1650 Boul. Lionel Boulet, J3X 1S2 Varennes (QC), Canada. Email: rosei@emt.inrs.ca
KS212

16:45 **Polymer nanoparticles with Active Carboxyl Groups: Preparation, Structure and Hydrophilicity**
Xiuxue Sun, Zhao Dai*, Jimei Zhang*, Ping Li, Shichao Xu, Yang liu, Yanmin Yang, Guo Zheng Key Laboratory of Hollow Fiber Membrane Materials and Membrane Processes, Ministry of Education, School of environment and Chemical Engineering, Tianjin Polytechnic University, 300160 Tianjin, China *Contacting Author (phone:+86-22-24528172; email: daizhao@gmail.com).
FC222

17:00 **Transfer Printing using O_2-Plasma treated PDMS Stamps without Adhesive Layer**
Jeehoon Kim and Jong-Hyun Ahn*
School of Advanced Materials Science and Engineering, SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, Suwon, 440-746, Korea. *Contacting Author: Jong-Hyun Ahn (e-mail: ahnj@skku.edu).
FC223

17:15 **V_2O_5/polypyrrole Core-shell Nanotubes for Gas Sensor**
Wei Jin, Wen Chen*, Yu Lu, Chunxia Zhao and Ying Dai
State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, and School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, China, * Contacting Author: Wen Chen (phone: +86-27 87651107; fax: +86-27 87864580; email: chenw@whut.edu.cn)
FC224

17:30 **The dendritic PAMAM Synthesis on the DBD Amine Grafted PET Surface**
Juan Li, Lizhen Yang*, Qiang Chen
Laboratory of Plasma Physics and Materials, Beijing Institute of Graphic Communication, 102600, Beijing, China. *Contacting Author: Lizhen Yang (Tel:+86-10-6026-1099, email: lppmchenqiang@hotmail.com)
FC225

17:45 **Block Copolymer Nanotemplates as Versatile Platforms for Hybrid Multifunctional Nanostructures**
Dong Ha Kim
Department of Chemistry and Nano Science, Ewha Womans University, 11-1 Daehyun-Dong, Seodaemun-Gu, Seoul 120-750 Korea dhkim@ewha.ac.kr
FC226

18:00 **Controlled Growth of Nano- and Bio-Arrays on Patterned Substrates**
Hua Zhang,* Bing Li, Xiaozhu Zhou, Gang Lu, Xiehong Cao, Freddy Boey
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore. *Contacting Author: Hua Zhang (phone: 65-67905175; fax: 65-6790-9081; email:HZhang@ntu.edu.sg)
FC227

18:15 **Silver Nanoparticles on Poly(ethylene oxide) and Hydroxyethyl Cellulose Nanofiber**
Narahari Mahanta, Suresh Valiyaveettil*
Department of Chemistry, National University of Singapore, 3 Science Drive 3, Singapore 117543
*Contacting Author: phone:0065163659; email: chmsv@nus.edu.sg
FC228

Nanofabrication Oral Session III

LT-16

Chair: Xinglong WU, Nanjing University

10:45 **Fabrication of well ordered Zn nanorod arrays by ion irradiation method at room temperature and effect on crystal orientations**
Masaki Kutsuna, Pradip Ghosh*, Masato Kudo, Masaki Tanemura and Yasuhiko Hayashi
Department of Frontier Materials, Graduate School of Engineering, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya, 466-8555, Japan, E-mail: pradipnit@yahoo.co.in
FC229

11:00 **Scanning Probe Microscopy-based Characterization of ZnO Nanorods**
Christian Teichert*[1], Yue Hou[1], Igor Beinik[1], Xinyi Chen[2], Y. F. Hsu[2], Aleksandra B. Djurišić[2], Wolfgang Anwand[3], Gerhard Brauer[3]
[1]Institut für Physik, Montanuniversität Leoben, Austria. [2]Department of Physics, University of Hong Kong, P.R. China. [3]Institut für Strahlenphysik, Forschungszentrum Dresden-Rossendorf, Germany. *Contacting Author: Christian Teichert (phone:43-3842-402-4663; fax: 43-3842-402-4663; e-mail: teichert@unileoben.ac.at)
FC230

11:15 **Stable Aqueous Dispersions of ZnO Nanoparticles for Ink-Jet Printed Gas Sensors**
Ahmed S. G. Khalil[1], Sonja Hartner[2], Moazzam Ali[1], Anoop Gupta[2], Hartmut Wiggers[2], and Markus Winterer[1]
[1] Nanoparticle Process Technology and CeNIDE, Duisburg-Essen University, Duisburg, Germany. [2] Institute for Combustion and Gas Dynamics and CeNIDE, Duisburg-Essen University, Duisburg, Germany. *Contacting author: Ahmed S. G. Khalil, (phone: +49 2033791183; fax: +49203 379 4453;e-mail : ahmed.s.g.khalil@uni-due.de).
FC231

11:30 **Structural and Optical Properties of AlxZn1-xO Alloys by Sol-gel Technique**
Min Wei , Hong Deng, Xueran Deng, Chunrong Yang, Jinju Chen
FC232

State Key Laboratory of Electronic Thin Films and Integrated Devices , the School of Microelectronics and Solid State Electronics ,University of Eletronic Science and Technology of China, Chengdu, P.R. China, phone:-86-28-83207281; email: minwei@uestc.edu.cn, hdeng@uestc.edu.cn

11:45 **Synthesis and Photoluminescence of Ga Doped ZnO Flowers**

Gao Hong, Xu Lingling, Liu Jia, Lv Wei, Li Zeming, Zhang Xitian

Heilongjiang Key Laboratory for Advanced Functional Materials and Excited State Processes, Department of Physics, School of Physics and Electronic Engineering, Harbin Normal University, Harbin 150025, P.R. China, E-mail: xtzhangzhang@hotmail.com — FC233

12:00 **Designing, Measuring, and Controlling Molecular- and Supramolecular-Scale Properties for Molecular Devices**

Paul S. Weiss,* Senior Member

California NanoSystems Institute, University of California, Los Angeles, Los Angeles, CA 90095, USA, psw@cnsi.ucla.edu; Departments of Chemistry and Physics, The Pennsylvania State University, University Park, PA 16802, USA, stm@psu.edu — KS218

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Jr Hau HE, National Taiwan University

Yong YANG, Shanghai Institute of Ceramics, CAS

16:15 **Fabricating ZnO nanowires-based Humidity Sensor via Dielectrophoresis Method**

Yun Wang, John T. W. Yeow*, Senior Member IEEE, Yu-Tung Yin and Liang-Yih Chen*

Yun Wang and John Yeow are both with Department of System Design Engineering, University of Waterloo, waterloo, Ontario, Canada, N2L 3G1, Yu-Tung Yin and Liang-Yih Chen are both with Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, 106, Taiwan. *Contacting Author: John and Chen have equal contribution for the report. The main contact email: sampras@mail.ntust.edu.tw. — FC234

16:30 **NO Gas Sensing Properties of ZnO Wire-like Thin Films Synthesized by Thermal Oxidation of Sputtered Zn Metallic Films in Air**

Nguyen Le Hung, Eunseong Ahn, Hooncheol Jung, Hyojin Kim*, Soon-Ku Hong, and Dojin Kim — FC235

Department of Materials Science and Engineering, Chungnam National University, *Contacting Author: Hyojin Kim (phone: 82-42-821-6636; fax: 82-42-822-3206; email:hyojkim@cnu.ac.kr).

16:45 **Copper Seed Layer Using Atomic Layer Deposition for Cu interconnect**

Dae-Yong Moon[1], Tae-Suk Kwon[1], Byung-Woo Kang[2], Woong-Sun Kim[2], Baek Mann Kim[3], Jae Hong Kim[3], and Jong-Wan Park*[2]

[1]Division of Nanoscale Semiconductor Engineering, [2]Division of Materials Science & Engineering, Hanyang University, Soul, Korea [3]Research & Development Division, Hynix, Icheon-si, Kyoungki-do, Korea, *Contacting Author: Jong-Wan Park (phone: +82-2-2220-0386; email: eako37@hanyang.ac.kr) — FC236

17:00 **Y_2O_3:Eu^{3+} Luminescent Nanofibers From Electrospun PVA/$Y(NO_3)_3$/$Eu(NO_3)_3$ Composite Fibers** — FC237

Yuming Chen, Qingrong Qian, Xinping Liu, Liren Xiao, and Qinghua Chen*
College of Chemistry and Materials Science, Fujian Normal University and Fujian Modified Plastic Research and Develop technology Institue, Fuzhou 350007, China. *Contacting Author: Qinghua Chen is with College of Chemistry and Materials Science, Fujian Normal University, Fuzhou 350007, China (Phone: +86 8344 1949; fax: +81 043 251 1231; email: cqhuar@pub5.fz.fj.cn).

17:15 **Conformal Photoresist Coating for Critical Dimension Improvement**
Laddawan Supadee and Assoc.Prof.Dr.Wisut Titiroongruang
Electrical engineering faculty, King Mongkut's Institute of Technology, Ladkrabang, Bangkok Thailand. s1060031@kmitl.ac.th and ktwisut@kmitl.ac.th
FC238

17:30 **Electrical properties of $Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3$ (PMN-PT) epitaxial films grown on Si substrates**
Juan Jiang,[a] Nak-Jin Seong,[a] Hyun-Hee Hwang,[b]Won-Jae Lee[c] and Soon-Gil Yoon[a,z]
[a]School of Nano Science and Technology, Graduate of Analytical Science and Technology (GRAST), Chungnam National University, Daeduk Science Town, 305-764, Daejeon, Korea[b]Room 206, Business Incubator Building 233-5, Gasan-dong, Guemcheon-Gu,153-801,Seoul, Korea[c]Department of Nano Technology, Dong-Eui University, Busan, 614-714, Korea*Contacting Author: sgyoon@cnu.ac.kr
FC239

17:45 **Fabrication of ZnO Nanostructures: Effect of Organic and Inorganic Compounds**
P. K. Samanta [1, 2]*, S. Basak [1] and P. Roy Chaudhuri[1], MEMBER, IEEE
1Department of Physics & Meteorology, Indian Institute of Technology, Kharagpur, India
2Department of Physics, Ghatal R. S. Mahavidyalaya, Ghatal, Paschim Medinipur, India, E-mail: pijush.samanta@gmail.com
FC240

18:00 **Whispering-Gallery Mode Ultraviolet Laser ZnO Nano-/Micro-rods**
C. X Xu*, J. Dai, G. P. Zhu, C. G. Lv, Y. P. Cui
Advanced Photonics Center, School of Electronic Science and Engineering, Southeast University, Nanjing 210096, China, Email: xcxseu@seu.edu.cn
FC241

18:15 **Ce-doped ZnO nanorods by electrodeposition**
F. Fang,[1] A. M. C. Ng,[1] X. Y. Chen[1], A. B. Djurišić,[1*] and W. K. Chan[2]
[1]Dept. of Physics, The University of Hong Kong, Pokfulam Road, Hong Kong, [2]Dept. of Chemistry, The University of Hong Kong, Pokfulam Road, Hong Kong, *Contacting Author: Dr. A. B. Djurišić is with the Department of Physics, The University of Hong Kong, Pofulam Road, Hong Kong, P. R. China. (phone: +852 28597946; email: dalek@hkucc.hku.hk).
FC242

Nanofabrication Poster Session I

ATRIUM

14:00

Preparation of Carbon Nanofibers Using Ferric Nitrate from the V-type Pyrolysis Flame
Yuanchao Liu*, baomin Sun, Zhaoyong Ding and Wei Li
School of energy and power engineering north china electric power university, beijing ,china
*Contacting Author Yuanchao Liu is with the School of Energy and Power Engineering, North China Electric Power University, Beijing, China (phone: +86 10-80798745; email:ycliu_999@126.com)
FP201

Synthesis and Characterization of Carbon Nanotubes from the V-type Pyrolysis Flame
Baomin Sun, Yuanchao Liu*, Zhaoyong Ding and Wei Li
School of energy and power engineering north china electric power university, beijing ,China
FP202

*Contacting Author Yuanchao Liu is with the School of Energy and Power Engineering, North China Electric Power University, Beijing, China (phone: +86 10-80798745; email:ycliu_999@126.com)

A New Modeling Method for the Pattern Library of Interconnect Parasitic Capacitances in VLSI

Hui Qu*[1], Xiaoyu Xu[1], *Member, IEEE*, and Zhuoxiang Ren[2], *Senior Member, IEEE*
[1]Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China. [2]Mentor Graphics Corporation, San Jose, CA, 95131, USA. *Contacting Author: Hui Qu is with the Institute of Electrical Engineering, Chinese Academy of Sciences; No.6, Beiertiao Street, Zhongguancun, Haidian District, Beijing, 100190, China (e-mail: quhui@mail.iee.ac.cn).

FP203

A novel and facile route for the synthesis of water-soluble cadmium sulfide quantum dots

Li Zhen, Liu Yanyan, Fang Yaoguo, Peng Liwei, Liu Tiebing, Wu Minghong*
Shanghai Applied Radiation Institute, Shanghai University, 333 Nanchen Road, Baoshan, Shanghai 200444, China. *Contacting Author: Wu Minghong is with Shanghai Applied Radiation Institute, Shanghai University, China. (Phone: +86-21 66304220; fax: +86-21 66135275; email: mhwu@staff.shu.edu.cn)

FP204

A novel chelating surfactant templating pathway for preparation of Co_3O_4/silica mesoporous composite

Kui Niu, Mingqing Chen*, Zhongbin Ni, and Chengwu Fu
School of Chemical and Material Engineering, Jiangnan University, Wuxi, China. *Contacting Author: Mingqing Chen is with School of Chemical and Material Engineering, Jiangnan University, 1800 Lihu Road, Wuxi, China. (Tel.: +86-510-89880678; fax: +86-510-85917763; E-mail: mqchen@jiangnan.edu.cn).

FP205

A Simple Route to High-temperature Phase Metal Oxide nanoparticls by Laser Ablation in Liquid

Peisheng Liu[1,2]*, Weiping Cai[2], Xiangdong Luo[1]*, Weiping Jing[1] and Jinglian Hu[3]
[1]Jiangsu Key Laboratory of ASCI Design, Nantong University, Nantong 226019, P.R. China [2]Key Laboratory of Materials Physics, Anhui Key Laboratory of Nanomaterials and Nanotechnology, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei 230031, P.R. China [3]School of Materials Science and Engineering, Anhui Key Laboratory of Metal Materials and Processing, Anhui University of Technology, Ma-An-Shan, 243002, P.R. China. *Contacting Authors: Peisheng Liu and Xiangdong Luo are with Jiangsu Key Laboratory of ASCI Design, Nantong University, China (phone: +86-513-85012704; fax: +86-513-85012700; Email: psliu@issp.ac.cn , luoxd@ntu.edu.cn)

FP206

A Study of Conjugation of FePt/ZnS Nanocore-shell Structure with Different Sequences of DNAs

Ho Chang and Sheng-Hung Wu
Department of Mechanical Engineering, National Taipei University of Technology E-mail address: f10381@ntut.edu.tw

FP207

Assembly of Inorganic-Organic Hybrid Network via Hydrogen Bonding and Its Reinforcing Effects on Thermoplastics

[a]Mingliang Du*, [b]Baochun Guo* and [b]Demin Jia
[a] Key Laboratory of Advanced Textile Materials and Manufacturing Technology, Ministry of Education, Zhejiang Sci-Tech University, Hangzhou 310018, China.[b]Department of Polymer Materials and Engineering, South China University of Technology, Guangzhou 510640, China. * To

FP208

whom all correspondences should be addressed. du@zstu.edu.cn, Fax: 86-571- 86843255, Tel:86-571-86843255 (ML Du); Email: psbcguo@scut.edu.cn, Fax: 86-20-22236688, Tel: 86-20-87113374 (BC Guo).

Atomic Structure of Hydrous Ruthenium Oxide Coating on Carbon-Nanotube for Supercapacitor

Yuli Lin* and H.-S Huang

Institute of Engineering Science, Chung Hua University, Hsinchu, Taiwan *Contacting Author: Yuli Lin is with the Institute of Engineering Science and Department of Mechanical Engineering, Chung Hua University, Hsinchu, Taiwan (phone: +886 3-5185494; email:yulilin@chu.edu.tw). FP209

Behaviors of the Different Dispersers on the Morphology of the Porous TiO_2 Films

Yu Zou, Ding Ren, JiFu Du, HaiYang Dai, ChangYong Zhan, NingKang Huang*

Key Lab. of Radiation Physics and Technology, Ministry of Education; Institute of Nuclear Science and Technology, Sichuan University, ChengDu, Sichuan, P. R. China, 610064 *Contacting Author: NingKang Huang, Tel.: +86-28-85412230; Fax: +86-28-85410252; Email address: huang_072@163.com FP210

Catalytic Growth and Characterization of Single-Crystalline Aluminum Nitride Nanowires

Hue-Min Wu*and Jaw-Yeu Liang

Department of Physics, Chinese Culture University, Taipei 111, Taiwan *Corresponding author: hueminwu@faculty.pccu.edu.tw FP211

Characterization and Photocatalytic Activity of Titanate Nanotube using a Solvothermal Route

Qingfeng Sun, Haipeng Yu*, Yixing Liu, Yongzhi Cui, Qiongfang Yu, and Liyang Luo

Key laboratory of Bio-based Material Science and Technology of Ministry of Education, Northeast Forestry University, China E-mail: fengsunqing@sohu.com; yuhaipeng20000@yahoo.com.cn; yxl200488@sina.com *Contacting Author: Haipeng Yu is with the Key laboratory of Bio-based Material Science and Technology of Ministry of Education, Northeast Forestry University; Hexing road 26, Harbin, 150040, China. (phone: 86-451-8219-1756; email: yuhaipeng20000@yahoo.com.cn). FP212

Chemical Structure of Photocatalytic Active Sites in Nanosize TiO_2

Tung-Li Hsiung and H. Paul Wang*

Department of Environmental Engineering, National Cheng Kung University, Tainan 701, Taiwan. *Contacting Author: H. Paul Wang is with Department of Environmental Engineering and Sustainable Environmental Research Center, National Cheng Kung University, Tainan 701, Taiwan. (phone: +886-6-2763608; fax: +886-6-2752790; email: wanghp@mail.ncku.edu.tw). FP213

Constriction Feffomagnetic Patterned Thin Film By AFM Scratch Lithography

Kyungmin Jang*, Yoshifumi Ishibashi, Daisuke Iwata, Hidenori Suganuma, Tsutomu Yamada, and Yasushi Takemura

Department of Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan *Contacting Author: Kyungmin Jang is with the Department of Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan (phone: +81-45-339-4154; fax: +81-45-339-4154; email: d09gd193@ynu.ac.jp) FP214

Controllable Synthesis of Straight and Branched CdTe Nanowires Using CdO as Precursor

Sheng Liu, Chun-Yan Yang, Wen-Hua Zhang*, and Can Li*

State Key Lab of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, 457 Zhongshan Road, Dalian, China. *Contacting Authors: Can Li and Wen-hua Zhang are with FP215

State Key Lab of Catalysis, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, 457 Zhongshan Road, Dalian, 116023, China (phone: +86-411-84379070; +86-411-84379252; email: canli@dicp.ac.cn; whzhang@dicp.ac.cn).

Controlled Growth of Carbon Nanotubes Using Zinc Oxide Nanotubes as the Catalyst

SHIH-FONG LEE[1] , YUNG-PING CHANG[1], LI-YING LEE[1,2]

[1]Department of Electrical Engineering, Dayeh University, No. 168, University Road, Da-Tsuen, Changhua, Taiwan 51505, R.O.C. [2]Department of Electronic Engineering, Chung Chou Institute of Technology, No. 6, Lane 2, Section 3, Shanjiao Road, Yuanlin, Changhua, Taiwan 510, R.O.C. *Corresponding author e-mail address:ypc@cht.com.tw

FP216

Controlled Growth of Disordered Si Nanowire Arrays at Room Temperature for Self-Cleaning and Anti-Reflection Applications

Yu-An Dai, Hung-Jr Chang, Chin-An Lin, and Jr-Hau He*

Small Lab of Institute of Photonics and Optoelectronics, & Department of Electrical Engineering, National Taiwan University, Taipei, 106, Taiwan, ROC *Contacting Author: Jr-Hau He is with Institute of Photonics and Optoelectronics, & Department of Electrical Engineering, National Taiwan University, Taipei, 106. (phone: +886-2-33669646; email: jhhe@cc.ee.ntu.edu.tw).

FP217

Controlled large strain of Si in the NiSi/Si/NiSi nanowire heterostructure

W. W. Wu[1]*, K. C. Lu[2]*, K. N. Chen[3]*, and C. W. Wang[1]

[1]Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan [2]Department of Materials Science and Engineering, National Cheng Kung University, Taiwan, Taiwan [3]Department of Electronics Engineering, National Chiao Tung University, Hsinchu, Taiwan *Contacting Authors: W. W. Wu is with National Chiao Tung University, Taiwan (phone: 886-3-571-2121 ext 55395; fax: 886-3-572-4727; e-mail: wwwu@mail.nctu.edu.tw). K. C. Lu is with National Cheng Kung University, Taiwan (phone: 886-6-275-7575 ext 62900; fax: 886-6-234-6290; e-mail: kclu@mail.ncku.edu.tw). K. N. Chen is with National Chiao Tung University, Taiwan (phone: 886-3-513-1558; fax: 886-3-572-4361; e-mail: knchen@mail.nctu.edu.tw).

FP218

Dielectric Constant Controlled Solvothermal Synthesis of a TiO_2 Photocatalyst with Tunable Crystallinity: A Strategy for Solvent Selection

Jian J. Wu, Xu J. Lü, and Fu Q. Huang*

CAS Key Laboratory of Materials for Energy Conversion, Shanghai Institute of Ceramics, Chinese Academy of Sciences (SICCAS), 1295# Dingxi Road, Shanghai 200050, P. R. China (P.R.C). *Contacting Author: Fax: +86 21 5241 6360, Email: huangfq@mail.sic.ac.cn,

FP219

Dielectrophoretic Addressable Deposition of Arc-SWCNTs for High-throughput Screening FET Arrays

Wei Guo[1], Zengpei Dou[1], Xiaoxue Tian[2], Hongfang Sun[1]*, Yanyi Huang[3], Dongsheng Xu[2], Yuanfang liu[1]

[1]Dept. Chemical Biology, College of Chemistry and Molecular Engineering, Peking University [2] State Key Laboratory for Structural Chemistry of Unstable and Stable Species, College of Chemistry and Molecular Engineering, Peking University [3] Dept. Advanced Materials and Nanotechnology, College of Engineering, Peking University *Contacting Author: Dr. Hongfang Sun is in the Beijing National Laboratory for Molecular Sciences, Department of Chemical Biology, College of Chemistry& Molecular Engineering, Peking University, Beijing 100871, China. (phone/fax: 86-10-62754127, shf@pku.edu.cn)

FP220

Direct Single-Step Micromolding Method For Patterning Of Various Nanomaterials FP221

Radha B[1] & Kulkarni G. U. *
Chemistry and Physics of Materials Unit and DST Unit on Nanoscience, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur P.O., Bangalore 560 064, India *Contacting Author is with Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India (phone : +91-80-2208 2814; fax: +91-80-22082766; e-mail: kulkarni@jncasr.ac.in)

Effect of Oxide Layer on Al-induced Crystallization of Amorphous $Si_{1-x}Ge_x$ Thin Films

Tianwei Zhang, Fei Ma, Kewei Xu*
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FP222

Effect of Process Parameters on Perpendicular Coercivity of Co_3Pt Thin Films

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FP223

Effects of Reaction Conditions on Preparation of $FePO_4 \cdot 2H_2O$ and Properties of $LiFePO_4$ by Solution Precipitation Route

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FP224

Effects of Additives on Sintering of Nanocrystalline Hydroxyapatite

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FP225

Effects of Applied Voltage on Barrier Oxide Layer in Porous AAO Fabrication

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FP226

Effects of Potassium Hydroxide Post-Treatments on the Field-Emission Properties of Thermal Chemical Vapor Deposited Carbon Nanotubes

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FP227

Electrochemical Behavior of Zn Anodes in Zn/Air Batteries for Nano-roughened ZnO Structure Synthesis

FP228

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Enhanced Efficiency of Thermal Interface Materials with Cu@C Nanoparticles

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FP229

Enhanced Roughness of Porous TiO_2 Photoanode with Hollow Carbon Sphere Templates

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FP230

Enhanced Wet Etching of Patterned GaN with Heavy-Ion Implantation

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FP231

Enhancement of Ordering and Perpendicular Magnetic Properties of CoPt Films by adding Ag Underlayer

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FP232

Enhancing the rectification efficiency by changing ion species and introducing concentration gradients

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FP233

Fabrication and Magnetic Properties of Electrospun $Ti_{0.9}V_{0.1}O_2$ Nanofibers

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Fabrication and Magnetorheological Property of Nano-sized Magnetic Particles

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FP235

Fabrication of Dimension-tunable Si Nanopillar Arrays with Antireflection and Self-Cleaning Properties

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FP236

Fabrication of FePt Nano-Islands for Ultra-High Density Magnetic Recording Media

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FP237

Fabrication of Nano-Scale Cu Bond Pads with Seal Design in 3D Integration Applications

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FP238

Fabrication of novel $ZnS/ZnAl_2S_4$ nanocomposite using a facile solvothermal route

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FP239

Fabrication of Si Nanowire Arrays Selectively Formed on Pre-Patterned (001)Si Substrates

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FP240

Fabrication of The SnO_2/Al_2O_3 Catalysts Through Electrospinning

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Fabrication of Truncated Rhombic Dodecahedral Cu_2O Nanocages and Nanoframes

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FP242

Fabrication of Two-dimensional Multiscale Patterns by Holographic Lithography

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FP243

Fabrication, Mechanical Properties and Fracture Toughness of Thermoplastic Polyolefin Filled with Carbon Nanofibers

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FP244

Facile and Efficient Decoration of Magnetic Nanoparticles on Functionalized Multi-wall Carbon Nanotubes

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FP245

Fe thin film of thickness 90nm produces large horizontal displacement by magnetic torque

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FP246

Ferroelectric domain and d_{33} measurement in the $BiPbFeO_3$ film

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FP247

Gas detection using Carbon nanotubes and metal ligand Carbon nanotubes Gas Sensor

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FP248

Gas ionization sensors with CNT/Ni field cathodes

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Growth of Porous ZnO Nanowires by Thermal Oxidation of ZnS Nanowires

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FP250

Growth of ZnO Nanostructures by Electrodeposition

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FP251

High Perfermance Light-Colored Rubber Nanocomposites

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FP252

High-energy Heavy Ion Beam Annealed Ion-implantation-synthesized SiC Nanocrystallites and Photoluminescence

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FP253

Hydrothermal Synthesis and Characterization of Monodisperse CeO_2 Nanospheres

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FP254

Improved Carbon Nanotube Supported Pt Nanocatalyts with Lyophilization Method

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FP255

Improvement of Interfacial Adhesion Strength and Thermal Stability of Cu/cap barrier/low-k Dielectric Stack by Plasma Treatment on the Surface of Cu Film

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Influence of Nickel Nanoparticle-Substitution on Dielectric Properties of P(BN)ZT Ceramics FP257

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Investigation Based On NEMS Double Si_3N_4 Resonant Beams Pressure Sensor FP258

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Effects of host and shape on nonlinear optical properties of CdS nanorods and nanoparticles FP259

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Large-scale Syntheses of Uniform ZnO Nanorods and Ethanol Gas Sensors Application FP260

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Large-scale synthesis of Sb_2S_3 spikes by hydrothermal reaction FP261

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Microstructure and Magnetic Properties of the FePt Film on a Membrane of Anodized Aluminium Oxide FP262

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Microstructure and Resistivity of Machinable AlN/h-BN Ceramic Nanocomposites FP263

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Microwave-Assisted Synthesis of Water-dispersed Core/(Doped) Shell Quantum Dots
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FP264

Molecular dynamics simulation of Argon-atom bombardment on graphene sheets
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FP265

Molecular study of titania nanotube and titania nanopowder
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FP266

Nanofluidic Diode Generated by pH Gradient inside Track-etched Conical Nanopore
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FP267

Optimized Conditions for THz Photonic Crystal Fabrication with Excimer Laser
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FP268

Synthesis of ZnO Nanoparticles by Spray-Pyrolysis Method and Their Photocatalytic Effect
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PH-Tuned Synthesis of Gold Nanoplates Using Star CD-PDMAEMA
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FP270

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Piezoelectric evaluation of UV-illuminated PZT films by piezorsponse force microscopy

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FP271

Preparation and Characterization of nickel nanorods via microwave hydrothermal route

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Scanning Parameters Optimization for Digital PI Controller

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Surface hardening of NiTi shape memory alloy in-duced by surface nanocrystallization via surface me-chanical attrition treatment

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Nanoelectronics Oral Session I

LT-17

Chair: Xiaosheng FANG, National Institute for Materials Science

10:45 **Spin filtering in a quantum ring with Rashba coupling**

B. Tanatar[1]* and V. Moldoveanu[2]
[1]Department of Physics, Bilkent University, Bilkent 06800 Ankara, Turkey, [2]National Institute of Materials P.O. Box MG-7, Bucharest-Magurele, Romania, *Contacting Author: email: tanatar@fen.bilkent.edu.tr

EC201

11:00 **Nano-Scale Early-Design-Stage Prediction for Crosstalk-Induced Power**

Ahmad Atghiaee*, Student Member, IEEE, Nasser Masoumi, Member, IEEE, and Payman Zarkesh-Ha, Senior Member, IEEE

[1] Advanced VLSI Laboratory, School of ECE, University of Tehran, Iran. [2] School of ECE, University of New Mexico, Albuquerque, USA. *Contacting Author: Ahmad Atghiaee is with Advanced VLSI Laboratory, School of ECE, University of Tehran; North Kargar Ave., P.O.Box 14395 – 413, Tehran, Iran (phone: 98-21-6111-4362; e-mail:a.atghiaee@ieee.org).

EC202

11:15 **Effect of Technology Scaling on Program and Read Window in Phase Change Memories** EC203

Stefania Braga*, Alessandro Cabrini, and Guido Torelli
University of Pavia, Department of Electronics, Via Ferrata 1, 27100, Pavia, Italy, Mail: stefania.braga@unipv.it

11:30 **Semiconductor Nanowires for Energy Conversion**

Peidong Yang
Department of Chemistry, University of California, Berkeley, CA 94720.

KS221

12:00 **Electron charge transfer along quantum nanosystems**

Satarin K.K.*, Polivnikova T.N., Gainullin I.K.
Moscow State University, Physics Faculty, E-mail: satarin@ph-elec.phys.msu.ru

EC204

12:15 **Local Structure Investigation of Indium Oxynitride Thin Films by X-ray Absorption Fine structure**

K. Amnuyswat[1], P. Thanomngam[1,3], S. Sopitpan[2], A. Sungthong[1], S. Porntheeraphat[1] and J. Nukeaw[1,3]
[1] College of KMITL Nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand, [2] Thai Microelectronic Center, National Science and Technology Development Agent, Patumtani, Thailand, [3] Thailand Center of Excellence in Physics, CHE, 328 Si Ayutthaya Rd. Bangkok 14000 *Contacting Author: Kittiphong Amnuyswat (phone: +66-86-9020207; email: kaswat@gmail.com)

EC205

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Rongming WANG, Beihang University

16:15 **The Model of Nano-scale Copper Particles Removal from Silicon Surface in high pressure CO_2+H_2O and CO_2+H_2O+IPA cleaning solutions**

Xin Tan[1], Jiajue Chai[1], Xiaogang Zhang [1]* and Jiawei Chen [2]*
1) Department of Chemistry, Renmin University of China, Beijing, China 2) China State Key Laboratory of Geological Processes and Mineral Resources, China, University of Geosciences, Beijing, China, *Contacting Author: Xiaogang Zhang (phone: 86-10-62516958; fax: 86-10-62515601; email: zhang_xg@ruc.edu.cn)

EC206

16:30 **Theoretical Study on the Peanut-Shaped Dimers and Nanotubes Consisted of C_{50} Cages**

Hongcun Bai and Yuanhe Huang*
College of Chemistry, Beijing Normal University, Beijing 100875, P. R. China. *Contacting Author: Y. Huang (E-mail: yuanhe@bnu.edu.cn)

EC207

16:45 **Modeling & Simulation of Nanowires as sensors**

[1]Lamba,V.K., [2]Engles, D., [3]Malik,S.S,.
[1]Deptt of ECE, HCTM kaithal, 2Deptt of ECE, GNDU Amritsar, 3Deptt of Physics, GNDU Amritsar.

EC208

17:00 **Modeling of Temperature Sensor Built on GaN Nanostructures**

Asghar Asgari
Photonics Group, Research Institute for Applied Physics, University of Tabriz, Tabriz 51665-163, Iran School of Electrical, Electronic and Computer Engineering, The University of Western

EC209

Australia, Crawley, WA 6009, Australia, asgari@tabrizu.ac.ir

17:15 **Subband Structure and Effective Mass of Strained SiGe (110) Inversion Layer for PMOSFET**
Wei-Chin Wang, Shu-Tong Chang*, and Bing-Fong Hsieh
Department of Electrical Engineering, National Chung Hsing University, Taichung 40227, Taiwan. *Contacting Author: Shu-Tong Chang (phone: +886-4-22851549 ext. 702; email: stchang@dragon.nchu.edu.tw). EC210

17:30 **Quantum Mechanical Effect on Determining Threshold Voltage of Trigate FinFET Using Self-Consistent Analysis**
Emran Md. Amin, Md. Zunaid Baten, Raisul Islam and Quazi D. M. Khosru
Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka-1000, Bangladesh, email: emranmdamin@yahoo.co.in EC211

17:45 **Structural and Electronic Properties of poly(fluorene-pyrrole) copolymer: Time Dependent Density Functional Theory Investigation**
Rungtiwa Chidthong[1]* Pornpimol Maitarat [2, 3] Supa Hannongbua [2, 3]
[1]Department of Chemistry, Faculty of Science and Technology, Nakhon Pathom Rajabhat University,Nakhon Pathom, Thailand 73000 [2]Department of Chemistry, Faculty of Science, Kasetsart University, Jatuchak, Bangkok, Thailand 10900 [3]Center of Nanoscience, Kasetsart University, Bangkok, Thailand 10900, *E-mail: rungtiwa@npru.ac.th EC212

18:00 **Tunability of a Quantum Dot based FET for multiple valued logic circuits: A modeling and simulation approach**
Arvind Pawan R.[1], Ajay Srinath[2], V.K.Chaubey[3]
Birla Institute of Technology and Science, Pilani, India, [1]rarvind.bits@gmail.com, [2]ajay.srinath@gmail.com, [3]vkster@gmail.com EC213

18:15 **A Quantum Mechanical Transport Approach to Analyze of DG Silicon Nanowire Transistor**
Fatemeh Karimi *, Reza Hosseini**
* Islamic Azad University Central branch, Tehran, Iran, fm_karimi779@yahoo.com
** Islamic Azad University Science & Research branch, Tehran, Iran. rezaho61@yahoo.com EC214

Nanoelectronics Oral Session II **LT-13**

Chair: Quan LI, The Chinese University of Hong Kong

10:45 **Fabrication of Stable Contacts for Carbon Nanotube Using Eutectic Alloy**
Daehyun Park [1], and D. Jeon [1, 2,]*
[1]Nano Systems Institute, Seoul National University [2]Department of Physics Education, Seoul National University, Seoul 151-748,South Korea *Contacting Author: D. Jeon (Phone: +82-2-880-9116; email: jeon@snu.ac.kr). EC215

11:00 **Hole Mobility in SiGe Inversion Layers: Dependence on Surface Orientation, Channel Direction, and Strain**
Bing-Fong Hsieh, Shu-Tong Chang, Ming-Hong Lee*
Department of ElectricalEngineering, National Chung Hsing University, Taichung 40227,Taiwan.(email:stchang@dragon.nchu.edu.tw) *Contacting Author: Ming-Hong Lee is with the institute of Electro-Optical Science and Technology, National Taiwan Normal University, Taipei, Taiwan.(email: mhlee@ntnu.edu.tw). EC216

11:15 **Highly Efficient Cross-linked PbS Nanocrystal/C_{60} Hybrid Heterojunction Photovoltaic Cell** EC217

S. W. Tsang,[1, §] H. Fu,[1] R. Wang,[2] J. Lu,[1] K. Yu,[2] and Y. Tao[1, *]
[1]Institute for Microstructural Sciences, 2Steacie Institute for Molecular Sciences, National Research Council of Canada, Ottawa, Ontario, Canada K1A 0R6 §Presenting Author: sai-wing.tsang@nrc-cnrc.gc.ca, *Corresponding Author: ye.tao@nrc-cnrc.gc.ca

11:30 **Graphene Nanosheet Counter-Electrodes for Dye-Sensitized Solar Cells**
D. W. Zhang[1], X. D. Li [1, 2], S. Chen[1], H. B. Li[1], Z Sun[1], X. J. Yin[2], S. M. Huang[1*]
[1]Engineering Research Centerfor Nanophotonics & Advanced Instrument, Ministry of Education, Department of Physics, East China Normal University, North Zhongshan Rd. 3663, Shanghai 200062, P. R. China. [2]Advanced Materials Technology Centre, Singapore Polytechnic, 500 Dover Rd., 139651 Singapore. *Contacting Author: S. M. Huang (phone: 86-21-62233227;fax: 86-21-62232413;email: smhuang@phy.ecnu.edu.cn)
EC218

11:45 **Influence of Gold Particle Size on Melting Temperature of VLS Grown Silicon Nanowire**
Yanfeng Jiang* Yamin Zhang
Microelectronic Center, College of Information Engineering, North China University of Technology, Beijing, 100144, China, E-mail address: yfjiang@ncut.edu.cn
EC219

12:00 **Study of an Novel Self-Alignment Method for Silicon Nanowire**
Yanfeng Jiang Yamin Zhang
Microelectronic Center, College of Information Engineering, North China University of Technology, Beijing, 100144, China, E-mail address: yfjiang@ncut.edu.cn
EC220

12:15 **Facile Fabrication of Si Nanowires Arrays for Solar Cell Applications**
Xiaocheng Li*, Beng Kang Tay
School of Electrical & Electronic Engineering, 50 Nanyang Avenue, Singapore 639798
Email: xiaocheng@ntu.edu.sg
EC221

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Hadas Shtrikman, Weizmann Institute of Science

16:15 **Effect of Quantum Capacitance on Switching Speed in T-CNFETs**
Hailiang Zhou, Minxuan Zhang, and Yue Hao
National Laboratory forParallel and Distributed processing, School of Computer, National University of Defense Technology, Changsha, Hunan, 410073,China School of Microelectronics, Xidian University, Xi'an, Shanxi, 710000, China. Contacting Email: hlzhou@nudt.edu.cn
EC222

16:30 **Optical and Electrical Properties of Silicon Nanoparticles**
Anoop Gupta[1]*, Sonja Hartner[1], Hartmut Wiggers [1,2]
[1]Institute for Combustion and Gasdynamics (IVG), University of Duisburg-Essen, Duisburg, Germany. [2] Center for Nanointegration Duisburg-Essen (CeNIDE), University of Duisburg- Essen, Duisburg, Germany. *Contacting Author: Anoop Gupta (phone: 49-203-379-3769; fax: 49-203-379-3087; email: anoop.gupta@uni-due.de).
EC223

16:45 **Nanotube Substituted Source/Drain Regions Carbon Nanotube Transistors for VLSI Circuits**
Shibesh Dutta, Student Member, IEEE, Balakrishnan Shankar, Amrita Vishwa Vidyapeetham
Balakrishnan Shankar is with the Mechanical Engineering Department, Amrita Vishwa
EC224

Vidyapeetham, INDIA (email: bala@amritapuri.amrita.edu).*Contacting Author: Shibesh Dutta is a student of the Electronics & Communication Engineering Department, Amrita Vishwa Vidyapeetham, INDIA (email: shibesh_06ec53@students.amrita.ac.in).

17:00 **Preparation, Mechanical and Electrical Properties of Carbon Micro- and Nanocoils**
Hui Bi*, Kaichang Kou, Zhichao Wang, Jiaoqiang Zhang
School of Science, Northwestern Polytechnical University,Xi'an, China. *Contacting Author: Hui Bi (phone: 86-13891987909; email:bihui_1981@yahoo.com.cn) — EC225

17:15 **Self-Assembly of Nanoparticles: Toward to Biological Functions, Inorganic Viruses, and Microscale Electronic Components**
Nicholas A. Kotov — KS209
Departments of Chemical Engineering, Materials Science and Engineering, Biomedical Engineering, University of Michigan, Ann Arbor, MI; kotov@umich.edu.

17:45 **n-type conductivity in oxygen ion implanted nanocrystalline diamond films**
X.J. Hu*, H.J. Liu, J.P. Pan, L.P. Lu
College of Chemical Engineering and Material Science, Zhejiang University of Technology, Hangzhou *Contacting Author: huxj@zjut.edu.cn — EC226

18:00 **Luminous Efficiency Enhancement of Organic Light-Emitting Diodes by an External Electron Source**
Chi-Shing Li, Shui-Hsiang Su*, Tzu-Min Lin , Hsiang-Yu Chi and Meiso Yokoyama
school of Department of Electronic Engineering, Ishou University, Kaohsiung County, Taiwan, *Contacting Author: Shui-Hsiang Su (phone:886-7-657-7711; email: shsu@isu.edu.tw). — EC227

18:15 **Field Emission Properties of Graphite Nanotubes**
Wang Shuxia, Chen Weizhong, He Yelu
Applied Physics Department, Chongqing University, Chongqing, 400044 — EC228

Nanoelectronics Oral Session III — LT-15

Chair: Ming LIU, The Institute of Microelectronics, CAS

10:45 **Complete Formation Sequence of InAs Quantum Dots on Lattice-Mismatched InGaAs/GaAs Substrates**
Songphol Kanjanachuchai and Teerawat Limwongse
Semiconductor Device Research Laboratory (Nanotec Center of Excellence), Department of Electrical Engineering Faculty of Engineering, Chulalongkorn University, Bangkok 10330, Thailand — EC229

11:00 **Phase Transformation Experimental Study of IC Chip Power Supplying grounding on Ferroelectric Ceramic Porous Material**
Zhenhai Zhang[1*], Zhanzhong Cui[1], Jinglong Yan[2], and Kejie Li[1]
[1]School of Mechatronics Engineering, Beijing Institute of Technology, Beijing, P. R. China. [2]North China System Engineering Institute, Beijing, P. R. China. [*]Contacting Author: Zhenhai Zhang is with School of Mechatronics Engineering, Beijing Institute of Technology; 5 South Zhongguancun Street, Haidian District, Beijing, 100081, P. R. China (phone:-86-13691397429; e-mail:tigerzzh@126.com). — EC230

11:15 **Preparation of Nanorod-like Anatase TiO_2 Nanocrystals and Their Photovoltaic Properties**
Qinghong Zhang,[*] Shuang Li, Yaogang Li and Hongzhi Wang — EC231

State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, Donghua University, Shanghai 201620, China. *Corresponding author, fax: +86-21-67792855, email: zhangqh@dhu.edu.cn

11:30 **Preparation of SnO_2 Nanowires by Solvent-free Method using Mesoporous Silica Template and its Gas Sensitive Properties**

Haijiao Zhang, Zhijin Tan, Ruofei Wu, Chunlei Zhang, Wenming Shi, and Zheng Jiao*
Institute of Nanochemistry and Nanobiology, School of Environmental and Chemical Engineering, Shanghai University, Shangda Rd. 99, Shanghai 200444, P. R. China. *Contacting Author: Zheng Jiao is with the Institute of Nanochemistry and Nanobiology, Shanghai University, Shanghai, China. (phone:+86-21-66137803; fax: :+86-21-66135275; email: zjiao@shu.edu.cn)

EC232

11:45 **Single Electron transistor based Reconfigurable Flip Flop**

Rathnakannan.K , Vanaja Ranjan.P and S.H.Thilagar
DEEE,Anna University

EC233

12:00 **Thermal Conductivity Reduction in an Individual Single Crystalline Bi Nanowire by Size Effect**

Jong Wook Roh[1,a)], Kedar Hippalgaonkar[2,a)], Joohoon Kang, Seunghyn Lee[1], Jin Hee Ham[1], Renkun Chen[2], Arun Majumdar[2], Woochul Kim[3] and Wooyoung Lee[1,*]
[1]Department of Materials Science and Engineering, Yonsei University, 134 Sinchon, Seoul 120-749, Korea [2]Department of Mechanical Engineering, University of California, Berkeley, California 94720, USA [3]School of Mechanical Engineering, Yonsei University, 134 Sinchon, Seoul 120-749, Korea *Contacting Author: Wooyoung Lee

EC234

12:15 **Thermoelectric effect and charge density distribution in the TiO_2-$SrTiO_3$ hetero-structure**

H.L. Kwok[1*]
[1]Center of Advanced Materials & Related Technology and Dept. of ECE, University of Victoria, BC, Canada *Corresponding author: e-mail: hlkwok@ece.uvic.ca, Phone: 250-7218685, Fax: 250-7216052.

EC235

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Weili LIU, Shanghai Institute of Microsystem and Information Technology, CAS

16:15 **Fabrication and Characterization of Twin Poly-Si Thin Film Transistors EEPROM with Nitride Trapping Layer**

Yung-Chun Wu*, Min-Feng Hung, Ji-Hong Chiang, Lun-Jyun Chen, Chiang-Hung Chen
Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan, R.O.C. *Contacting Author: Yung-Chun Wu is with the Department of Engineering and System Science, National Tsing Hua University, No. 101, Section 2, Kuang-Fu Road, Hsinchu, Taiwan, R.O.C. (phone: 886-3-5715131 ext. 34287; fax: 886-3-5720724; e-mail: ycwu@ess.nthu.edu.tw).

EC236

16:30 **FPGA Leakage Power Reduction Using CLB-Clustering Technique**

Mohammad Mehdi Tohidi and Nasser Masoumi
Advanced VLSI lab, school of ECE, University of Tehran Tehran, Iran

EC237

16:45 **Interconnect Design in Nanoscale FPGAs** EC238

Mohammad Mehdi Tohidi and Nasser Masoumi
Advanced VLSI lab, school of ECE, University of Tehran Tehran, Iran

17:00 **Organic-Inorganic Hybrid Circuit with Organic Memory and MOSFET**

Xing H. Liu, Zhuo Y. Ji, De Y. Tu, Li W. Shang, Ming Liu* and Chang Q. Xie
Key Laboratory of Nanofabrication and Novel Devices Integration Technology, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, China. *Contacting Author: Ming Liu with Institute of Microelectronics, Chinese Academy of Science, No. 3, West Road of North TuCheng, ChaoYang District, Beijing, 100029, China (phone: +86-10-8299 5578; fax: +86-10-8299 5583; email: liuming@ime.ac.cn).

EC239

17:15 **Preparation of Nanostructures Thermoelectric Materials Using PLA Technique**

T. Kumpeerapun*[1], J. Hirunlabh[1], J. Khedari[2], H. Scherrer[3], V. Kosalathip[4], W. Phangream[4], and P. Limsuwan[4]
[1]Faculty of Energy, Environmental and Materials, King Mongkut'sUniversity of Technology Thonburi, Bangkok 10140, Thailand. [2]Building Technology Division, Faculty of Architecture, Kasetsart University, Bangkok 10900, Thailand. [3]Ecole Nationale Supérieure des Mines de Nancy, Parc de Saurupt, CS14234, 54042 Nancy Cedex, France. [4]Department of Physics, Faculty of Science, King Mongkut's University of Technology Thonburi, Bangkok 10140, Thailand. *Contacting Author: T. Kumpeerapun is with the Faculty of Energy, Environmental and Materials, King Mongkut's University of Technology Thonburi: 126 Pracha-utid Road, Bangmod, Toongkru,, Bangkok 10140, Thailand. (phone: 66-2470-8867; email: taswal.kum@kmutt.ac.th).

EC240

17:30 **Electrodeposited the Gold/Manganese Oxides as Nano Supercapacitor**

Yi Hu*, Jiun-Shing Liu
Department of Material Engineering, Tatung University.40 ChungShan North Road, 3rd Section Taipei 104, Taiwan, R.O.C. *Contacting Author: Yi Hu Phone: 886-2-25925252-3411-103, E-mail: huyi@ttu.edu.tw

EC241

17:45 **Reliability Analysis of Lithium-Ion battery based on recent advancement in Nanotechnology**

Pawan Kumar Kotak, Manish Sharma
Acropolis Institute of Technology and Research, Indore

EC242

18:00 **Construction and operation of sub-10 nm Vertical Molecular Transistors**

Elad Mentovich and Shachar Richter*
Tel Aviv University, Ramat Aviv, Tel Aviv 69978, Israel

EC243

18:15 **CdS-FePt Based Photoelectrochemical Sensor for Detection of H_2O_2**

Zhao Yue*, Marco Zanella, Waqas Khalid
[1]College of Information Technical Science, Nankai University, Weijin road 94, Tianjin 300071, China [2]Department of Physics, Marburg University, Marburg 35037,Germany *Contacting Author: Zhao Yue is with College of Information Technical Science,Nankai University, China (E-mail:Lunarey@gmail.com; Phone:+86-13652079984)

EC244

Nanoelectronics Poster Session I

ATRIUM

14:00

Anthrylenes with End-Capping Diphenyl moiety for Blue Organic Light-Emitting Diodes

Jeong Keun Park[1], Kum Hee Lee[1], Seul Ong Kim[1], Jung Sun Park[2], Ji Hoon Seo[2], Young Kwan Kim[2,*], and Seung Soo Yoon[1*]
[1] Department of Chemistry, Sungkyunkwan University, Suwon, Korea [2] Department of

EP201

Information Display, Hongik University, Seoul, Korea Email: ssyoon@skku.edu, kimyk@wow.hongik.ac.kr

A Molecular Dynamics Study of Thermal Conductivity in Graphene Nanoribbons

G.C. Loh [1*], J. Shiomi [3], H.B. Su [2], S. Maruyama [3], and B.K. Tay [1]
[1] School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
[2] School of Materials Science and Engineering, Nanyang Technological University, Singapore
[3] Department of Mechanical Engineering, The University of Tokyo, Tokyo, Japan Contacting Author: G.C. Loh is with the School of Electrical and Electronic Engineering, Nanyang Technogical University; 50 Nanyang Avenue, Singapore
639798 (phone: +65-6790-5454; email: lohg0003@ntu.edu.sg)

EP202

A Novel Symmetric Hetero-metal String Complex Ru2Ni3(dpzpda)4Cl2

Caixia Yin* and Shie-Ming Peng
[1]Key Laboratory of Chemical Biology and Molecular Engineering of Ministry of Education, Institute of Molecular Science, Shanxi University, Taiyuan, China [2]Department of Chemistry, National Taiwan University, Taipei,10617 Taiwan,ROC. (phone: -86-351-7011022; email: yincx@sxu.edu.cn)

EP203

A Stable Red Organic Light-emitting Diode Based on a Pentacene Derivative

X. D. Luo [a)], P. S. Liu a), B. D. Ding [a), b)*], Li Wang[c)], W. Q. Zhu[c)], X. Y. Jiang[c)], and Z. L. Zhang[c)]
[a)] Jiangsu Key Laboratory of ASIC, Nantong University, Nantong, 226019,China [b)] Department of Chemistry, Nantong University, Nantong, 226019,China [c)] Department of Materials Science, Shanghai University, Jiading Campus, Shanghai, 201800, China E-mail: luoxd@ntu.edu.cn (X.D.Luo), dbd@ntu.edu.cn (B.D.Ding)

EP204

A study on the electronic transport for the low-field quantum Hall devices and quantum metrology

Da-Ren Hang*,[1] and K. A. Cheng[2]
[1]Department of Materials and Optoelectronic Science, National Sun Yat-sen University, Kaohsiung 804, Taiwan, R.O.C. [2]Department of Electronic Engineering, Lunghwa University of Science and Technology, Taoyuan 333, Taiwan, R.O.C. *Contacting Author: Da-Ren Hang is with Department of Materials and Optoelectronic Science, National Sun Yat-sen University, Kaohsiung 804, Taiwan, R.O.C. (phone: 886-7-5252000 Ext 4066; Email: drhang@faculty.nsysu.edu.tw)

EP205

A Study on the simple structural phosphorescent Organic Light-Emitting Diodes

Hoe Min Kim*, Ji Hyun Seo[1], Eun Young Choi[1], Jun Ho Kim[1], Kum Hee Lee[2], Seul Ong Kim[2], Seung Soo Yoon[2], and Young Kwan Kim[1]
[1]Department of Information display, Hongik University, Seoul 121-791, Korea [2]Department of Chemistry, Sungkyunkwan University, Suwon 440-746, Korea *Contacting Author: Seung Soo Yoon with the Department of Chemistry, Sungkyunkwan University, Suwon 440-746, Korea (phone: 82-31-290-7071; fax: 82-31-290-7075; e-mail: ssyoon@skku.edu). **Contacting Author: Young Kwan Kim with the Department of Information display, Hongik University, Seoul 121-791, Korea (phone: 82-2-320-1646; fax: 82-2-3141-8928; e-mail: kimyk@wow.hongik.ac.kr).

EP206

Amperometric Immunosensor For HIV p24 in Serum Based on Polyelectrolyte/Gold Magentic Nanoparticle Multilayers Modified Electrode

Ning GAN [1*], Feng WANG[1], Fei LIU [2], Lei ZHENG[2]
[1]The State Key Laboratory Base of Novel Functional Materials and Preparation science, Faculty of Material Science and Chemical Engineering of Ninbo University, Ningbo, 315211, China ;
[2] Nanfang Medical University, Guangzhou,414000,China ganning@nbu.edu.cn

EP207

Analysis and Modeling of Nano-Crystalline Silicon TFTs on Flexible Substrate with Mechanical Strain

M. H. Lee[1,*,] S. T. Chang[2], J.-J. Huang[3], G.-R. Hu[3], Y.-S. Huang[3], and C.-C. Lee[3]

[1] Institute of Electro-Optical Science and Technology, National Taiwan Normal University, Taipei, Taiwan [2] Department of Electrical Engineering, National Chung Hsing University, Taichung, Taiwan [3] Display Technology Center (DTC), Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan [*]Tel: 886-2-29338260 ext. 407 / Fax: 886-2-86631954 email: mhlee@ntnu.edu.tw

EP208

Analytic Model of A Silicon Nanowire pH Sensor

Yun Seop Yu[*], Hyung-Kun Park[1], Sung Woo Hwang[2], and Doyeol Ahn[3]

[1]Information and Communication Engineering Department, Korea University of Technology and Education, Chungnam, 330-708, Korea [2]Research Center for Time-domain Nano-functional Devices and Department of Computer & Electronics Engineering, Korea University, Seoul, Korea [3]Institute of Quantum Information Processing & Systems, University of Seoul, Seoul, Korea [*]Contacting Author: Y. S. Yu is with Department of of Information & Engineering, Hankyong National University, 67 Seokjeong, Anseong, Gyeonggi, 456-749, Korea(phone: +82-31-670-5293; e-mail: ysyu@hknu.ac.kr)

EP209

Atomic Structure of the Ag/Ge(111)-(R3xR3) Surface: from STM Observation to Theoretical Study

L.-W. Chou, [1,2] H. C. Wu, [1,3] Y.-R. Lee, [1] J.-C. Jiang, [2] C. Su, [4,*] and J.-C. Lin [1,3,*]

[1.]Inst. of Atomic and Molecular Sciences, Academia Sinica, Taiwan [2.]Dept. of Chemical Engineering, National Taiwan University of Science and Technology, Taiwan [3.]Dept. of Chemistry, National Taiwan Normal University, Taiwan [4.]Inst. of Organic and Polymeric Materials, National Taipei University of Technology, Taiwan E-mail: jclin@po.iams.sinica.edu.tw and f10913@ntut.edu.tw

EP210

Characterization of Copper Phthalocyanine Thin Film Photovoltaic on PET Substrate Prepared by Electron-Beam Evaporation Technique

Jiti Nukeaw[1,2] and Benchapol Tunhoo[*1,2]

[1] College of Nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Chalongkrung Rd., Ladkrabang, Bangkok 10520, Thailand [2] ThEP Center, CHE, 328 Si Ayuthaya Rd., Bangkok 10400, Thailand. [*]Contacting Author: Benchapol Tunhoo is with the College of Nanotechnology, King Mongkut' s Institute of Technology Ladkrabang, Bangkok, Thailand (phone: 662-326-4411; fax: 662-3264733; email: ktbencha@kmitl.ac.th).

EP211

Characterization of RuO_2 Nanocrystals Deposited on Carbon Nanotubes by Reactive RF Sputtering

Yu-Chen Su[1], Ching-An Chen[1], Yi-Min Chen[1], Ying-Sheng Huang[1,*,] and Kuei-Yi Lee[1,2]

[1]Department of Electronic Engineering, National Taiwan University of Science and Technology, 43 Keelung Road, Section 4, Taipei 106, Taiwan [2]Graduate Institute of Electro-Optical Engineering, National Taiwan University of Science and Technology, 43 Keelung Road, Section 4, Taipei 106, Taiwan [*]Contacting Author: Ying-Sheng Huang is with the Department of Electronic Engineering, National Taiwan University of Science and Technology, Taiwan (phone: +886-2-27336785; fax: +886-2-27333241; e-mail: ysh@mail.ntust.edu.tw)

EP212

Charge Transport Model of gate solution AlGaN/GaN High Electron Mobility Transistors

A. Asgari [1, 2,*], L. Rajabi Bonab [1]

[1]Photonics Group, Research Institute for Applied Physics, University of Tabriz Tabriz 51665-163, Iran [2] School of Electrical, Electronic and Computer Engineering, The University of Western

EP213

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Coagulation Method for Preparing Antimony-Doped Tin Oxide(ATO)/Poly(methyl methacrylate) Nano-composites and Their Electrical Conductivity and Thermal Stability

Binghai Dong, Tao Jiang*, Zuxun Xu, Jun Ren, Shimin Wang
Ministry of Education Key Laboratory for the Green Preparation and Application of Functional Materials, Hubei University, 430062,Wuhan, PR Chian

EP214

Contact Behavior of Focused Ion Beam-Deposited Pt on p-type Si Nanowire

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Crystallization Kinetics of Amorphous Ga-Sb films Extended for Phase-change Memory

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EP216

Decrease the OFF State Current of Carbon Nanotube Field Effect Transistors via Continuous Repeated Gate Sweeping

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EP217

Dependence of Electrical Properties on Thermal Temperature in Nanocrystalling SnO_2 Thin Films

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Depth Profiles and Chemical Bonding States of Graded Doping and Ultra-Thin HfLaO High-k Dielectrics Deposited on Silicon Substrate

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Design, Fabrication and Performance of SO_2 Sensor based on LaF3 Solid-Electrolyte

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Detection of CO and NH_3 Mixed Gas using Single-Walled Carbon Nanotubes

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Diarylamino-Substituted Stilbene Derivatives for Blue Organic Light-Emitting Diodes

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EP222

Dielectric Properties of Binary $BaTiO_3$/PVDF and Graphite doped GN/$BaTiO_3$/PVDF nanocomposites

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EP223

Dielectric Response of polyvinylidene fluoride loaded with silicon carbide nanoparticles

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Effect of Monolayer-Protected Ag Nanoparticles and Nature of Self-Assembled Monolayers on Organic Hetero-Junction Solar Cells

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Effect of Oxygen Partial Pressure on the Electrical Properties of the LSCO/AZO Heterojunction

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Effect of TiO_2 Nanoparticles on Dielectric Properties of CuO Ceramics

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Effects of Device and Peripheral Parameters on Transconductance of Silicon Nanowire Transistors

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Effects of Os Inserted Layers on the Structures and Magnetic Properties of the FePt Film

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Effects of Zn Doping on the $In_{15}Sb_{85}$ Phase Change Recording Thin Films

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Electrical Characteristics of Carbon Nanotube Network fabricated by a Simple Transfer Method

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Electrical Characteristics of $Ga_3Te_2Sb_{12}$ with High Thermal Stability for PRAM

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Electrical Conductivity of Polyvinylidene Fluoride Nanocomposites Filled with Carbon Nanotubes and Nanofibers

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Electrical, Structural and Thermal Investigation of $Ge_1Sb_4Te_7$ films with Nitrogen Doping

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Electron eigen states in quantum dots revealed by temperature derivative capacitance spectroscopy

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Enhanced Magnetic Properties in FePt (001) Epitaxial Thin films by Cu Capping Layer

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Epitaxial ZnO/4H-SiC Heterojunction Diodes

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Fabrication and Optical Absorption of Size-tunable Core-shell Structured ZnO Nanotube-CdTe Arrays

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Fabrication of Si/SiO_2/Au nanoparticles/HfO2 MOS Capacitor Structure by Spin Coating Method

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Ferroelectric and magnetic behavior of $Pb(Zr_{0.52}Ti_{0.48})O_3$ based Magnetoelectric nanocomposite films

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Field Emission Characteristics of Different Surface Morphologies of ZnO Nanostructures Formed on Carbon Nanotubes

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Field Emission from GaN/AlN Nano-Films on Si Substrate Prepared by Pulsed Laser Deposition

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Flexible and Transparent Touch Sensor using Single-Wall Carbon Nanotube Thin-Films

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Flexible Thin Flim Transistor Using Printed Single-Walled Carbon Nanotubes

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Growth and Characterizations of $CoFe_2O_4$-ZnO Nanocomposite Thin Films EP245

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High Sensitivity Electrochemical Detection of Salbutamol using Carbon Nanotubes in Anodized Alumina Nanopores

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High-Efficiency and Color Stable Deep-Blue Organic Light-Emitting Diodes

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Highly Adhesive, Transparent and Conductive Single-Walled Carbon Nanotube Film

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Highly Conductive Aligned Carbon Film for Interconnect Application

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Highly Efficient Organic Light-Emitting Diodes based on the Red Phosphorescent Emitter Sensitized by the Green Emitting Iridium Complex

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Highly Efficient Red Phosphorescent Ir(Ⅲ) Complexes for OLEDs Based on Carbonylated Arylpyridine Ligands

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Highly Sensitive Si nanowire-based Gas Sensors for Detection of a Nerve Agent

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Impact of Structural Parameters on Reduction of Short Channel Effects and Improvement of Switching Speed in Double Gate SOI MOSFET with Metal Source-Drain

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Improved Infrared Emissions of Er^{3+}-Tm^{3+} Codoped Al_2O_3 Thin Films: The Role of Cross Relaxation among Rare Earth Ions

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Improvement of Thermal Stability of Cu/Cu(Zr)/p-SiOC:H Film Stack Using an Ultra-thin Zr(Ge) Alloy Film as an Exhaustion Interlayer

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In-situ Synchrotron X-ray Diffraction measurement of Epitaxial FeRh Thin Films

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Interfacial Nature of Resistive Switching Effect in Perovskite-Oxide Thin Film Devices

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Introducing Time-dependant Sources for Solving Time- domain Schroinger Equation using FDTD Method

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Investigation of Resistive Switching Behavior using Ti/ZnO Nanobelt/Ti for Non-Volatile Memory Application

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Investigation of the Formation of $BaTiO_3$ Oriented Aggregated Particles under Ultrasonic Irradiation

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Nanophotonics Oral Session

LT-11

Chair: Xiao Wei SUN, Nanyang Technological University

10:45 **Wavelength Division Multiplexer of Surface Plasmon Polaritons Using Dual-periodical Arranged Metal Gap Waveguide**

X. Q. Yu* and S. N. Zhu
[1]Physics Department, Southeast University, Nanjing, 211189, China [2]National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China *Contacting Author: X. Q. Yu is with Physics Department, Southeast University, Nanjing, 211189, China, (phone: +86-25-52090600; email: xqyu@seu.edu.cn)

PC201

11:00 **ZnO nanorod LED**

Xiao Wei SUN
School of Electrical and Electronic Engineering Nanyang Technological University Singapore

PC202

11:15 **High Efficient Self-assembly CdSe/ZnS Quantum dots Light-Emitting Devices in Organic Matrix**

A. Uddin and C.C. Teo[1]
School of Photovoltaic and Renewable Energy Engineering, The University of New South Wales, Sydney, Australia [1]School of Materials Science and Engineering, Nanyang Technological University; Singapore 639798

PC203

11:30 **Enhanced WDM using a Gaussian Pulse within a Nano-waveguide**
P. Youplao[1], C. Vongchumyen[1], S. Mitatha[1] and P.P.Yupapin[2]
[1]Hybrid Computing Research Laboratory,Faculty of Engineering [2]Advanced Research Center for Photonics, Faculty of Science, All authors are with King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand. [*]Contacting Author: S. Mitatha is with the Hybrid Computing Research Laboratory, Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand. (e-mail:kmsomsak@kmitl.ac.th).
PC204

11:45 **CdS Nanowires/Nanobelts Electronic and Photonic Devices**
Lun Dai, G. G. Qin
Department of Physics and State Key Lab for Mesoscopic Physics, Peking University, Beijing 100871, China [*]Contacting Author: lundai@pku.edu.cn; qingg@pku.edu.cn
PC205

12:00 **Broadband Mid-Infrared Generation Using One-Dimensional Photonic Bandgap Waveguides**
Ritwick Das[1] and K. Thyagarajan[2]
[1]Mediterranean Technology Park 08860, Castelldefels (Barcelona), Spain [2]Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016, India
[*]Contacting Author: K. Thyagarajan Email: ktrajan@physics.iitd.ac.in
PC206

12:15 **Focusing by Varying the High-refractive-index Square Dielectric Rods**
Sujuan Chen, Chongxi Zhou[*], Chuaikai Qiu
State Key Laboratory of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences [*]Contacting Author:Chongxi Zhou
PC207

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Xiao Wei SUN, Nanyang Technological University

16:15 **Three dimensional SnO_2/ZnO Hierarchical Nanostructures: Fabrication and Lasing Properties**
Chuanwei Cheng,[1] Bo Liu,[1] Huiying Yang,[2] Weiwei Zhou,[1] Li Sun,[1] Handong Sun,[1] Siu Fung Yu,[2] Hao Gong,[3] Jixuan Zhang,[3] Hong Jin Fan[1,*]
[1]Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, 637371 Singapore [2]Division of Microelectronics, School of Electrical and Electronic Engineering, Nanyang Technological University. 637371 Singapore [3]Division of Materials Science and Engineering, National University of Singapore, 117576 Singapore
[*]Contacting Author: fanhj@ntu.edu.sg
PC208

16:30 **Effectively enhanced the haze of ZnO thin-film by ZnO and ZnO hollow nanoparticles**
Dison Huang and Shih-Shou Lo[*]
Nano Opto-electron Device Laboratory, Department of Photonics, Feng-Chia University,100, Wenhwa Rd. Seatwen Taichung,Taiwan. [*]Contacting Author: Shih-Shou Lo is with the Nano Opto-electron Device Laboratory, Department of Photonics, Feng Chia University, No.100, Wenhwa Road, Taichung, Taiwan, 40724, R.O.C. (phone:+886 -4-24517250 ext.5041; fax:+886-4-24510182; email: sslo@fcu.edu.tw).
PC209

16:45 **Shaped nanomembranes: From fundamental perception to new concepts and applications** KS215

Yongfeng Mei and **Oliver G. Schmidt**
Institute for Integrative Nanosciences, IFW Dresden, Helmholtzstr. 20, 01060 Dresden, Germany.
o.schmidt@ifw-dresden.de

17:15 **Controlled Fabrication of Gold@Conducting Polymers Core-Shell Nanostructures**
Shuangxi Xing, Li Huey Tan and Hongyu Chen*
Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore. *Contacting Author: Hongyu Chen is with the Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371, Singapore (phone: +65-63168795; fax: +65-67911961; e-mail: hongyuchen@ntu.edu.sg; website: http://www.ntu.edu.sg/home/hongyuchen/).
PC210

17:30 **Encapsulation of Hydrophobic Nanocrystals by Diblock Copolymers**
Jun Xu and Hongyu Chen*
Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371, Singapore *Contacting Author: Hongyu Chen is with the Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371, Singapore (phone: +65-63168795; fax: +65-67911961; e-mail: hongyuchen@ntu.edu.sg; website: http://www.ntu.edu.sg/home/hongyuchen/).
PC211

17:45 **Fabrication of Complex Nanostructures by Colloidal Chemistry**
Hongyu Chen*
*Contacting Author: Hongyu Chen is with the Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371, Singapore (phone: +65-63168795; fax: +65-67911961; e-mail: hongyuchen@ntu.edu.sg; website: http://www.ntu.edu.sg/home/hongyuchen/).
PC212

18:00 **Rational Assembly of Nanoparticles Clusters with Specific Formulae by Colloidal Reaction**
Yong Wang, Gang Chen, Miaoxin Yang, and Hongyu Chen*
Division of Chemistry and Biological Chemistry, Nanyang Technological University, Singapore 637371. *Contacting Author: Hongyu Chen is with the Division of Chemistry and Biological Chemistry, Nanyang Technological University, Singapore 637371 (phone: +65-63168795; email: hongyuchen@ntu.edu.sg).
PC213

18:15 **Third-Order Optical Nonlinearity of Cadmium Sulfide Nanoparticles Loaded in Mesostructured Silica Materials**
Jiaqi Li, Hangrong Chen*, Yu Chen, Peng Jiang, Chenyang Wei, and Jianlin Shi*
State Key Laboratory of High Performance Ceramics and Superfine Microstructures, Shanghai Institute of Ceramics, Chinese Academy of Sciences, 1295 Dingxi Road, Shanghai 200050, China
*Corresponding author: hangrong Chen, email: hrchen@mail.sic.ac.cn; Jianlin Shi, email: jlshi@mail.sic.ac.cn
PC214

Nanophotonics Poster Session I

ATRIUM

14:00

Design of Antireflective Subwavelength Grating Structure for Infrared Medical Imaging
Xun Zheng, Soonkyu Je, Byungwook Kim, Jongmyeong Shim, Shinill. Kang*
Nano Fabrication and Micro Optics National Research Laboratory, School of Mechanical
PP201

Engineering, Yonsei University , Seoul, Korea *Contacting Author: Shinill. Kang is with the Nano Fabrication and Micro Optics National Research Laboratory, School of Mechanical Engineering, Yonsei University; 134, Sinchon-dong, Seodaemun-gu, Seoul, 120-749, Korea (Phone: +82-(02)-2123-2829, Fax: +82-(02)-362-2736, E-mail address: snlkang@yonsei.ac.kr)

Aqueous Synthesis of Thiol-Capped Water-Soluble Fe-doped ZnSe nanocrystals

Ruishi Xie, Lingyun Liu, Lihua Li, Yuanli Li, Qiang Chen, Xi Yue, Dingquan Xiao and Jianguo Zhu* PP202

College of Materials Science and Engineering, Sichuan University,Chengdu 610064, China

Construction and Investigation of A DNA Sensing System Based on A Magnetic Molecular Beacon Probe

Shichao Xu, JuanYang, Jimei Zhang*, Zhao Dai, Bo Sun, Tielin Feng, Yan Zi

[1] School of Environmental and Chemical Engineering, Tianjin Polytechnic University Tianjin, China [2] School of Chemistry, Nankai University, Tianjin, China *Contacting Author: Jimei Zhang is with the School of Environmental and Chemical Engineering; 63#, Chenglin Rd, Hedong District, Tianjin City, 300160, China (phone:86-22-2452-8172, email: zhangjimei@tjpu.edu.cn). PP203

Control of Regioregularity by Photo Cross-linking of Polythiophenes

Sehwan Kim, Yuna Kim, Jeonghun Kim, and Eunkyoung Kim*

Department of Chemical and Biomolecular Engineering, Yonsei University 262 Seongsanno, Seodaemun-gu, Seoul 120-749, Korea PP204

Electron Transport in the Long-Range Charge-Recombination Dynamics of Single Encapsulated Dye Molecules on TiO_2 Nanoparticle Films

Edwin K. L. Yeow* and Xiangyang Wu

Division of Chemistry and Biological Chemistry, School of Physical & Mathematical Sciences, Nanyang Technological University, Singapore, 637371 *Contacting Author: Edwin K. L. Yeow is with the Division of Chemistry and Biological Chemistry, School of Physical & Mathematical Sciences, Nanyang Technological University, Singapore, 637371 (phone:65-63168758; e-mail: edwinyeow@ntu.edu.sg). PP205

Dye-sensitized Solar Cell using Natural Dyes as Sensitizers

Huizhi Zhou, Liqiong Wu*, Qingqing Miao, Gang Xin and Tingli Ma*

State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian, China. *Contacting Author: Tingli Ma is with the State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian, China. (phone: +86-411-39893820; email: tinglima@dlut.edu.cn) PP206

Exciton Wavefunction Coupled Surface Plasmon Resonance for Indium-doped p-ZnO Nanowires with Perforated Aluminum Circle Hole Arrays on Si Substrate

Chia-Hui Fang, Chung-Yuan Tsai, Jen-Cheng Wang, and Tzer-En Nee*

Department of Electronic Engineering, Chang Gung University, Tao-Yuan 333, Taiwan, Republic of China *Contacting Author: Tzer-En Nee is with the the Department of Electronic Engineering, Chang Gung University, Tao-Yuan 333, Taiwan, Republic of China. (phone: +886-3-2118800 ext. 5791; fax: +886-3-2118507, E-mail: neete@mail.cgu.edu.tw) PP207

Fabrication of highly transparent ZnO/PVB nanocomposite films with novel UV-shielding properties

Xiao-Fei Zeng, Xue Li, Xia Tao, Zhi-Gang Shen, Jian-Feng Chen*

Research Center for High Gravity Engineering Technology, Ministry of Education, Beijing University of Chemical Technology, Beijing 100029, PR China *Contacting Author: Jianfeng Chen is with Research Center for High Gravity Engineering Technology, Ministry of Education, Beijing PP208

University of Chemical Technology, China. (phone: +86-10 64446466; fax:+86-10 64444784; email: chenjf@mail.buct.edu.cn).

Crystal Growth and Photoluminescence Properties of Eu3+-doped Y3Al5O12 Nanocrystals by High-energy Ball Milling

Hyun Kyoung Yang[1], Jong Won Chung[1], Soung Wook Park[1], Jung Hyun Jeong[1],*, Ki-wan Jang[2], Ho Sueb Li[2], Soung Soo Yi[3]

[1] Department of Physics, Pukyong National University, Busan 608-737, Republic of Korea PP209

[2] Department of Physics, Changwon National University, Changwon 641-773, Republic of Korea

[3] Department of Electronic Materials Engineering, Silla University, Busan 617-736, Republic of Korea. *Contacting Author: J. H. Jeong is with the Department of Physics, Pukyong National University, Busan 608-737, Republic of Korea (phone: 82-51-629-5564; fax: 82-51-629-5549; e-mail: jhjeong@pknu.ac.kr).

High Efficiency InGaP/GaAs Solar Cell with Sub-wavelength Structure on AlInP Window Layer

Min-An Tsai[1], Peichen Yu[2], C. H. Chiu1, H. C. Kuo[2], T. C. Lu[2] PP210

Department of Electrophysics, Department of Photonics and Institute of Electro-Optical Engineering, National Chiao-Tung University, Hsinchu, 30010, Taiwan, R.O.C.

Hydrothermal Synthesis and NIR-to-blue, Green, Organge and White Upconversion Luminescence in $Yb^{3+}/Tm^{3+}/Er^{3+}/Ho^{3+}$-doped $Na_{0.5}Gd_{0.5}WO_4$

Zhiguo Xia*, Jiayue Sun, and Haiyan Du

[1] School of Materials Sciences and Technology, China University of Geosciences, Beijing 100083, China [2] College of Chemistry and Environmental Engineering，Beijing Technology and Business University，Beijing 100037, China *Contacting Author: Zhiguo Xia is with School of Materials Sciences and Technology, China University of Geosciences, Beijing 100083, China. (phone: +86-10 82322759; e-mail: xiazg426@yahoo.com.cn) PP211

Integrated Micro-and Nano Optical Cavities on a Chip for Supersensitive Sensing

Yingzhan yan*, Zhe Ji, Shubin yan, Jijun Xiong and Wendong Zhang

National Key Laboratory For Electronic Measurement Technology, North University Of China, Taiyuan, ShanXi Province, China (+86-351-3920398; email: yyz712@gmail.com) PP212

Junction Temperature of High-Power LED Packages with Diamond film

Cheng-Yi Hsu[1] and Yuli Lin[1],*

Institute of Engineering Science, Chung Hua University, Hsinchu, Taiwan *Contacting Author: Yuli Lin is with the Institute of Engineering Science and Department of Mechanical Engineering, Chung Hua University, Hsinchu, Taiwan (phone: +886 3-5185494; email:yulilin@chu.edu.tw). PP213

Localized-surface-plasmon Enhanced Luminescence from Porous Silicon by Gold Nanoparticles

Hui Wang, Zhenghua An*, Qijun Ren, Hengliang Wang, Zhanghai Chen, and Xuechu Shen

[1]. Laboratory of Advanced Materials, Fudan University, Han-dan Road 220#, Shanghai 200433, China [2]. State-key Surface Physics Laboratory and Physics Department, Fudan University, Shanghai 200433, China * Contacting author: Zhenghua An is with Laboratory of Advanced Materials, State-key Surface Physics Laboratory and Physics Department, Fudan University. Han-dan Road 220#, Shanghai 200433, China. Phone/Fax: +86-21-51630255. E-mail: anzhenghua@fudan.edu.cn. PP214

Luminescence Properties of Bi^{3+} ions co-doped $Gd_2O_3:Eu^{3+}$, Tb^{3+} nanophosphors

Jong Won Chung[1], Byung Kee Moon[1], Jung Hyun Jeong[1],*, Jung Hwan Kim[2] PP215

[1] Department of Physics, Pukyong National University, Busan 608-737, Republic of Korea
[2] Department of Physics, Dong Eui University, Busan 614-714, Republic of Korea *Contacting Author: J. H. Jeong is with the Department of Physics, Pukyong National University, Busan 608-737, Republic of Korea (phone: 82-51-629-5564; fax: 82-51-629-5549; e-mail: jhjeong@pknu.ac.kr).

On the physical properties of In_2O_3 films prepared by atomic layer deposition using tri-methyl-indium and nitrous oxide

Wei-Hsu Chi, Kuo-Yi Yen, Shao-Cian Li, Jyh-Rong Gong*, Cuo-Yo Nieh, and Shih-Chang Liang PP216
the Department of Physics, National Chung Hsing University, Taiwan, R O. C. (*Electronic mail:jrgong@phys.nchu.edu.tw ;Tel: +886-4-2284-0427 ;Fax: +886-4-2285-8583.)

Optical and structural features of silicon-rich a-SiNx::H thin films

Sarab Preet Singh[1], C.J. Oton[2], P. Srivastava[1], Sanatanu Ghosh[1], and G. Vijaya Prakash[1,]*
[1] Nanostech and Nanophotonics labs, Department of Physics, Indian Institute of Technology Delhi, New Delhi-110016, India [2] Optoelectronics Research Centre, University of Southampton, Southampton, SO17 1BJ, UK *E-mail: prakash@physics.iitd.ac.in PP217

Optical Properties of Single-Crystalline Wurtzite Aluminum Nitride Nanowires

Hue-Min Wu*and Jaw-Yeu Liang
Department of Physics, Chinese Culture University, Taipei 111, Taiwan * Corresponding author: Dr. Hue-Min Wu Associate Professor, Dept. of Physics Chinese Culture University Taipei 111, Taiwan E-mail: hueminwu@faculty.pccu.edu.tw PP218

Performance Enhancements in Optoelectrical Properties of InGaN/GaN Light-emitting Diodes with Micro-hole Arrayed Indium-tin-oxide Layer

Chia-Hui Fang, Jen-Cheng Wang, and Tzer-En Nee*
the Department of Electronic Engineering, Chang Gung University, Tao-Yuan 333, Taiwan, Republic of China. *Contacting Author: Tzer-En Nee is with the the Department of Electronic Engineering, Chang Gung University, Tao-Yuan 333, Taiwan, Republic of China. (phone: +886-3-2118800 ext. 5791; fax: +886-3-2118507, E-mail: neete@mail.cgu.edu.tw) PP219

Characterization of the Structure of Ionic Liquid by SAXS Analytical Method

E Cheng, Wei-Min Mao, and Zi-Jian Lv
First and second authors are with School of Materials Science and Engineer, University of Science and Technology Beijing, Beijing, China. Third author is with Shen Yang Normal University, the College of Chemistry and Life Science, 100034, ShenYang, China. * Contacting Author: E Cheng is with Powder Meltallurgy Institute, Central Iron and Steel Research Institute, Xue Yuan Nan Lu 76#, 100081, Beijing, China. (phone.: +86-010-13301088089; email: yizhengsmith @gmail.com). PP220

Nanobiology Oral Session LT-1

Chair: Jiao Sun, Shanghai Jiaotong University

10:45 **A Preliminary Study on A Highly Porous Nano Calcium Phosphate Bioceramic Scaffolds for Bone Tissue Engineering**

Yu Feng, Wei Li*, Zhiling Yan and Yunmao Liao
State Key Lab of Oral Disease, West China College of Stomatology, Sichuan University, 14 Renminnan Road, Chengdu 610041,China. *Contacting Author: Wei Li is with State Key Lab of Oral Disease, West China College of Stomatology, Sichuan University, China. (phone:+86-28 BC201

85502894;fax: +86-28 85582167; email: leewei2000@sina.com)

11:00 **Binding of Nanoplastics onto a Cellulose Film**
Priyanka Bhattacharya[1,2], Ran Chen[1], Mercy Lard[1,3], Sijie Lin[1], and Pu-Chun Ke[*1,2]
[1]Department of Physics and Astronomy, Clemson University, Clemson, SC, USA. [2]Center for Optical Materials Science and Engineering Technologies, Clemson University, Clemson, SC, USA. [3]Department of Physics, Lund University, Lund, Sweden. [*]Contacting Author: Pu Chun Ke is with the Department of Physics and Astronomy, Clemson University; 118 Kinard Laboratory, Clemson University, Clemson, SC, 29631, USA (phone: 1-864-656-0558; fax: 1-864-656-0805; email: pcke11@clemson.edu). BC202

11:15 **Corrosion Behavior of DLC-coated NiTi Alloys in the Presence of Serum Proteins**
Ruiqiang Hang[1], Shengli Ma[1,*] and Paul K. Chu[2]
[1]State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, China. [2]Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China [*]Contacting Author: Shengli Ma, phone: 86-29-82668395; email: slma@mail.xjtu.edu.cn) BC203

11:30 **Effect of Extraction Motheds on Micro/Nano Particles Leaching from C. lanceolata Wood**
MA Qing-zhi, PENG Wan-xi, WU Yi-qiang, ZHANG Xu, DENG He-ping
Central South University of Forestry and Technology, 410004 Changsha, Hunan Province, P.R. China BC204

11:45 **Effects of Alkaline Extraction on Micro /Nano Particles of Eucalyptus urophydis Wood**
PENG Wan-xi[1], WU Yi-qiang[1], WU Shu-bin[2], ZHANG Dang-quan[1]
[1]School of Materials Science and Engineering, Central South University of Forestry and Technology, Changsha 410004; [2]State Key of Pulp and Paper Engineering, South China University of Technology, Guangzhou 510640 BC205

12:00 **Effects of Hydroxyapatite Nanoparticle on Remineralization of Artificial Root Caries in Vitro**
Junjun Jing, Shengbin Huang, Bin He, and Yuqing Hao[*]
State Key Laboratory of Oral Diseases, Sichuan University, No. 14, 3rd Section Renmin South Road, Chengdu, Sichuan 610041, China. [*]Contacting Author: Tel./fax: +86 +28 85503469. E-mail address: hyqluxi@126.com (Y. Hao). BC206

12:15 **Evaluating Biocompatibility of Semiconductive Gallium Nitride, Flat and Nano-Structured Silicon Chips by Cell Viability, Adhesion and Growth**
Yu-Ting Kang and Ta-Jen Yen
Department of Materials Science and Engineering School of National Tsing Hua University, Hsinchu, 300, Taiwan (R.O.C.) Contacting Author: Ta-Jen Yen is with the Department of Materials Science and Engineering School of National Tsing Hua University, Hsinchu, 300, Taiwan (R.O.C.) (phone:+886-3-5742171 ; fax:+ 886-3-5722366 ; email: tjyen@mx.nthu.edu.tw) BC207

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Yong Han, Xi'an Jiaotong University

16:15 **Fabrication of Nano-structured HA/CNT Coatings on Ti_6Al_4V by Electrophoretic Deposition** BC208

for Biomedical Applications

Bokai Zhang [1], Chi Tat Kwok [2], Fai Tsun Cheng [3], Hau Cheung Man [4]

[1,2] Department of Electromechanical Engineering, University of Macau, [3] Department of Applied Physics, [4] Department of Industrial & Systems Engineering, The Hong Kong Polytechnic University, China

16:30 **Hardware Implementation of a Pulse-type Neuron with a Synapse Function for Hodgkin-Huxley Model**

Bomin Kwon, Jinwoo Jung, Jiman Kim, Juhong Park, Jewon Lee, Namtae Kim*, Yongsu Park** and Hanjung Song

Department of Nano Engineering, Inje University *Department of Electronics and Intelligent Robotics Engineering ,Inje University **Department of Electronics, Chung Cheong University

*Contacting Author: Hanjung Song is with the Department of Nano Engeering, Inje University (phone:+82-55-320-3873)

BC209

16:45 **Ion Beam Nanobiology**

L.D. Yu[a,b], P. Nimmanpipug[c], V.S. Lee[c] and S. Anuntalabhochai[d]

[a] Plasma and Beam Physics Research Facility, Department of Physics and Materials Science, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand [b] Thailand Center of Excellence in Physics, Commission on Higher Education, 328 Si Ayutthaya Road, Bangkok 10400, Thailand [c] Computer Simulation and Modeling Laboratory, Department of Chemistry, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand [d] Molecular Biology Laboratory, Department of Biology, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand

*Contacting Author: L.D. Yu

BC210

17:00 **Nanocoating of Montmorillonite/Mg-beta-Tricalcium Phosphate on Orthodontic Titanium Miniscrews**

Wen You Zhou[1,*], A. Bakr M. Rabie[1], Ricky W. K. Wong[1] and Bin Tang[2]

[1]Discipline of Orthodontics, Faculty of Dentistry, The University of Hong Kong, Hong Kong

[2]Department of Mechanical Engineering, The University of Hong Kong, Hong Kong

*Contacting Author: Wen You Zhou

BC211

17:15 **Preparation and Characteristics of Ag/ SiO_2 Nancomposite**

LiaoYan, Chen Qiang*, Cai Huiping, Zhu Huiqin

Laboratory of Plasma Physics and Materials, Beijing Institute of Graphic Communication, 102600, Beijing, China. *corresponding author: Qiang Chen Email: lppmchenqiang@hotmail.com Tel: 0086-10-6026-1099 Fax: 0086-10-6026-1099

BC212

17:30 **Preparation and characterization of well ordered mesoporous diopside nanobiomaterial**

Jie Wei[1*], Junfeng Jia[1], Xin Jiang[1],Xiaohui Wu[1],Chenglong Dai[1], Shicheng Wei[2], Jung-Woog Shin[3], Changsheng Liu[1]

[1]Key Laboratory for Ultrafine Materials of Ministry of Education, East China University of Science and Technology, Shanghai 200237, P.R.China [2]Center for Biomedical Materials and Tissue Engineering, Academy for Advanced Inter- disciplinary Studies, Peking University, Beijing 100871, P.R.China [3]Department of Biomedical Engineering, Inje University, Gimhae, Gyeongnam, 621-749, Republic of Korea

BC213

17:45 **Ultraviolet-enhanced wettability and bioactivity of self-organized TiO_2 nanotube layer**

Lan Zhang, Yong Han*

State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, China *Contacting Author: Yong Han. State Key Laboratory for Mechanical Behavior of

BC214

Materials, Xi'an Jiaotong University, Xi'an 710049, China (phone: +86 02982665580; fax:,+86 02982663453; e-mail: yonghan@mail.xjtu.edu.cn)

18:00 **Toxicity of TiO_2 Nanomaterials Influenced by Dispersion Medium in C. elegans**
Wenwen Zhang, Liping Tong, Wu Lijun, An Xu*
Key Laboratory of Ion Beam Bioengineering, Institute of Plasma Physics, Chinese Academy of Sciences,Hefei, Anhui, P.R. China *Contacting author; email: anxu@ipp.ac.cn — BC215

18:15 **Synthesis of Hydroxyapatite Film Utilizing Carbon Nanotubes as Template**
Lifang Niu, Huiyi Kua, and Daniel H. C. Chua*
Department of Materials Science and Engineering,National University of Singapore, 7 Engineering Drive 1, Singapore 117574 *Contacting author: Daniel H. C. Chua (Phone: 65-65168933, fax: 65-67763604, email: msechcd@nus.edu.sg) — BC216

Nanobiology Poster Session I — ATRIUM

14:00

Silica Nanoparticles Induce Apoptosis in Human Endothelial Cells via Reactive Oxygen Species
Xin Liu, Jiao Sun *
Shanghai Biomaterials Research & Testing Center / shanghai Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, Shanghai ,China * Corresponding author: E-mail: jiaosun59@yahoo.com .Address: No.716, Xie-tu Road, Shanghai 200023, P.R. China. Phone: 0086-21-63034903 Fax: 0086-21-63011643 — BP201

Synthesis and Cellular Biocompatibility of Two Types of Nanophase Hydroxyapatite with Different Ca/P Molar Ratio
Yantao Zhao [1,2], Yumei Zhang [1*], Yimin Zhao [1], Shuxun Hou [2] , Paul K. Chu [3*]
[1] School of Stomatology, Fourth Military Medical University, Xi'an 710032, China [2] Department of Orthopedics, The 304th Clinical Branch of the General Hospital of People's Liberation Army, Beijing, 100037, China. [3] Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong *Contacting Author: Yumei Zhang; Paul K. Chu. (Phone: +86-29-84776090; email: wqtzym@fmmu.edu.cn). — BP202

Synthesis of fluorapatite nanorods enamel prism-like structure in porous alumina template
Jie Wei[a,b], Xiaochen Liu[a], Junfeng Jia[b], Yifei Zhang[a], Chengjie Wang[a], Shicheng Wei[a,c], Changsheng Liu[b]
[a] Center for Biomedical Materials and Tissue Engineering, Academy for Advanced Inter-disciplinary Studies, Peking University, Beijing 100871, P.R.China [b] Key Laboratory for Ultrafine Materials of Ministry of Education, East China University of Science and Technology, Shanghai 200237, P.R.China cSchool and Hospital of Stomatology, Peking University, 100081, Beijing — BP203

The effect of nanohydroxyapatite solution on the occluding ability of dentinal tubule
Jing Yang [1] Kehua Que [2] Bin Guo* [2]
[1] Tianjin Stomatological Hospital of Nankai University, TianJin city, China [2] State Key Laboratory of Oral Diseases, Sichuan University, China *Contacting Author: Guobin, State Key Laboratory of Oral Diseases, Num 14, Section 3, Road Renminnan, Wuhou district, Chengdu city, Sichuan province, China. Tel:862885503561. Email:denthua@126.com — BP204

A Study on the Preparation and Characterization of Plasmid DNA and Drug-containing Magnetic Nano-liposomes for the Treatment of Tumor — BP205

Zi-yu Wang, Li Wang, Dong-sheng Zhang
School of Medicine, Southeast University,Nanjing 210009, China *Contacting Author: Dong-sheng Zhang, male, professor, b7712900@ jlonline.com. Tel: 86-25-83272502

Surface Modification of Biodegradable Poly (butylene Succinate) by Gas PIII

Junhui Ji*, Huaiyu Wang, and Wei Zhang*
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BP206

Bacterial Disinfection and Osteoblast Behaviors on Ag Plasma-Modified Polyethylene

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BP207

Binding Studies of L-Tryptophan to Human Serum Albumin with Nanogold-structured Sensor by Piezoelectric Quartz Crystal Impedance Analysi

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BP208

Bioactivity and Mechanical Properties of White Portland Cement Paste with Carbon Nanotubes

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BP209

Co-Delivery of Hydrophobic and Hydrophilic Drugs from Polymeric Ethosomes by Microemulsions

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BP210

Detection of Dopamine via FRET between Alexa Fluors

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BP211

Effect of iron oxide nanoparticles on PC12 Cells by MTS and p53

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BP212

Effect of Surface Topography of Zirconia Coating on its Bioactivity and Osteoblast Response

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BP213

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Electrochemical characteristics of TiO_2 nanotubes with different diameters

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BP214

Electrochemical deposition of high density gold nanoparticles on indium/tin oxide electrode for fabrication of superoxide anion biosensor

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BP215

Electrospun Chitosan Nanofiber for Tissue Engineering

Yun Mi Kang[1], Jae Hoon Ko[2], E Sle Kim[1], Gyeong Hae Kim[1], Goh Woon Park[1], Young Hwan Park[2], Byoung Hyun Min[1], Bong Lee[3], Jae Ho Kim[1] and Moon Suk Kim[1,*]
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BP216

Effect of Particle Size on the Sonochemical Synthesis of Silica-coated Magnetite Composite

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BP217

Folic Acid Conjugated mPEG-PEI-Sebacoyl Acid as a Non-Viral Vector for Nucleic Acid Delivery

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BP218

FRET-Based Optical Biosensor Based on ZnO Nanorods Arrays

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BP219

Hybridization of ODNs with Core-Shell Structure of Fe_3O_4 Nanoparticles and CS\ALG composite structure

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BP220

Hydrothermal Synthesis and Bio-mineralization of Hydroxyapatite Nanorod

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BP221

Impact Of Structure Parameters and Operation Conditions On Performance Of Nanoscale BioFET

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BP222

In situ Atomic Force Microscope Observation of Self-Assembly Adsorption of Bovine Serum Albumin on Silica and Gold Nano Film

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BP223

In Vivo Release of Bovine Serum Albumin From a Small Intestinal Submucosa Gel

E Sle Kim[1], Yun Mi Kang[1], Ju Young Lee[2], Gyung Hae Kim1, Kkot Nim Kang[3], Da Yeon Kim[3], Goh Woon Park[1], Bong Lee[3], Jae Ho Kim[1] and Moon Suk Kim[1,*]

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BP224

Influence of Annealing on Cytocompatibility of Anodized Nanoscale Titania Surfaces

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BP225

Interaction between functional group and ssDNA inserted on chemically modified solid-state nano/micro-channel

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BP226

Investigating the Adsorption Mechanism of Bovine Serum Albumin on Crystal Surface by Steering Atomic Force Microscopy

BP227

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Label-free Detection of Glucose based on Quantum Dots

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BP228

Mesoporous Silica Nanotubes Incorporating with CdS Quantum Dots for Controlled Release of Ibuprofen

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BP229

Nanowire Field Effect Transistor With its Sub-picomolar Label-free Biosensing Capability Toward a Gene Mutation

Chi-Chang Wu[1], Fu-Hsiang Ko[1,*], Ting-Siang Su[1], Bo-Syuan Li[1], and Wen-Fa Wu[2]
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BP230

Preparation and Antibacterial Performance of TiO_2 Nanotube Arrays Loaded with Ag Nanoparticles

Hairong Wang[1]， Kaifu Huo [1,2*], and Paul K Chu[2]
[1]The Hubei Province Key Laboratory of Refractories and Ceramics Ministry, Province Jointly-Constructed Cultivation Base for State Key Laboratory, College of Materials and Metallurgy, Wuhan University of Science and Technology, Wuhan 430081, China.2Department of Physics & Materials Science, [2]City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China *Contacting Author: Kaifu Huo, Electronic mail: kfhuo@wust.edu.cn

BP231

SnO_2:Zn^{2+} Ultrathin Nanowires with Visible-Light Photocatalytic Activity

Zonglong Zhu, Wei Liu, Zheng Xu
School of Chemistry and Chemical Engineer, Nanjing University, Nanjing, 210093, People's Republic of China E-mail: zhengxu@nju.edu.cn

BP231

Nanophysics Oral Session

LT-12

Chair: Jun CAI, North China Electric Power University

Prashanthi Kovur, Indian Institute of Technology, Bombay

10:45 **Nanopowders of the barium zirconium titanate for applications in electronic devices**

Supasarote Muensit[a,*] and Nawal Binhayeeniyi
Material Physics Laboratory,Physics Department, Prince of Songkla University, Songkhla,

TC201

Thailand. [a]NANOTEC CENTER of Excellence at Prince of Songkla University, Songkhla, Thailand. [*]Contacting Author: Supasarote MUENSIT, Material Physics Laboratory, Physics Department, Prince of Songkla University, Songkhla 90112 Thailand.

11:00 **Controlling Enironmental Pollution by Application of Inartificial Nano Material**
Zengliang Yu[a*], Dongqing Cai[a], Jiang Jiang[a], Yuejin Wu[a], Xiangqin Wang[a], Dan Liu[a], Xu Wang[a], Hong Zhang[a], Yi Tang[a] TC202
[a] Key Laboratory of Ion Beam Bioengineering , Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China [*]Corresponding Author Prof. Zengliang Yu Email: zlyu@ipp.ac.cn

11:15 **Investigation magnetism state of undoped surface of 4H-SiC**
Lin Yu[1], Donghong Liu[1], Ying Dai[1,*] , Baibiao Huang[2] TC203
[1] School of Physics, Shandong University, Jinan 250100, P. R. China [2] State Key Laboratory of Crystal Materials, Shandong University, Jinan 250100, P. R. China

11:30 **Investigation on Microstructure and Magnetic Properties of $(Fe_{50}Co_{50})_{73.5}Cu_1Nb_3Si_{13.5}B_9$**
Yuxin Wang, Xiang Li, Biao Yan*, Yu Zhang, Chunfeng Du, and Shenqiang Zhao
School of Materials Science and Engineering, Tongji University; Shanghai Key Lab of D&A for Metal-Functional Materials [*]Contacting Author: Biao Yan is with the Shanghai Key Lab of D&A for Metal-Functional Materials, School of Materials Science and Engineering, Tongji University, (phone: +86-21 65981178; fax:+ 86-21 65983462; email: yanbiao@vip.sina.com). TC204

11:45 **Length Effect of (15,15) Single-Walled Carbon Nanotube on Its Energy and Young's Modulus Studied Using Linear Scaling Quantum Mechanical Method**
J. Cai TC205
School of Nuclear Science and Engineering,North China Electric Power University, Beijing 102206, P. R. China

12:00 **Dominance of broken bonds and nonbonding electrons in low-dimensional systems**
Chang Q Sun
School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798 and School of Physical Science, Xiangtan University, Hunan 411105 TC206

12:15 **Novel Atomic Dynamics at W (111) Surfaces**
Tsu-Yi Fu[*1], Weng-J. Wong [1], and Tien T. Tsong[2] TC207
[1] Department of Physics, National Taiwan Normal University, Taipei, Taiwan [2] Institute of Physics, Academia Sinica, Taipei, Taiwan [*]Contacting Author:Tsu-Yi, Fu

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Minghong WU, Shanghai University

Zengliang YU, Institute of Plasma Physics, CAS

16:15 **Optical and FTIR Studies of CdSe Quantum Dots**
Nor Aliya Hamizi[*], Mohd Rafie Johan TC208
Advanced Materials Research Laboratory, Department of Mechanical Engineering, University of Malaya, Kuala Lumpur 50630, Malaysia

16:30 **Preparation and Magnetic Properties of Magnetite Nanoparticles by Sol-gel Method**

Hongzhang Qi*, Biao Yan , and Chengkui Li
Shanghai Key Lab. of D&A for Metal-Functional Materials,School of Materials Science and EngineeringTongji University,1239 Siping Road, Shanghai 200092, China *Contacting Author: Hongzhang Qi is with Shanghai Key Lab. of D&A for Metal-Functional Materials, School of Materials Science and Engineering, Tongji University (phone: +86-13774228796; Email: qhzsh wh@gmail)

TC209

16:45 **Preparation,Structure and Properties of Mg-based Bulk amorphous and nanocrystalline materials**

Chunfeng Du*, Hongzhang Qi, Biao Yan , and Leding Guan
Shanghai Key Lab. of D&A for Metal-Functional Materials,School of Materials Science and Engineering, Tongji University,1239 Siping Road, Shanghai 200092, China *Contacting Author: Chunfeng Du is with Shanghai Key Lab. of D&A for Metal-Functional Materials,School of Materials Science and Engineering, Tongji University,1239 Siping Road, Shanghai 200092, China (phone:+86-13482478620;Email:duchunfeng@live.cn)

TC210

17:00 **Synthesis and Characterization of spherical $LiNi_{0.7}Co_{0.15}Mn_{0.15}O_2$ via Co-precipitation**

Xinxin Tan[a,b], Weidong Wang[b], Yougen Tang[a,*], Haiyan Wang[a], Qianqian Ding[b]
[a] College of Chemical and Chemical Engineering, CentralSouthUniversity, Changsha 410083, PRChina [b] Shenzhen Tianjiao TechnologyCo., Ltd. Shenzhen 518119.PRChina
* Corresponding author. Tel.: +86 731 88830886; fax: +86 731 88879616. E-mail address: ygtang@mail.csu.edu.cn.

TC211

17:15 **The Coulomb Interaction and Volume Compress Effect on Spin and Orbital Moment of NiO**

Chewa Thassana[1*], Wicharn Techitdheera [1]
[1]Department of Applied Physics, Faculty of Science, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand. [2]College of KMITL nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand. *Contacting Author: Chewa Thassana is with the Department of Applied Physics, Faculty of Science, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand.

TC212

17:30 **Magnetic Characterization and Self-heating of Various Magnetic Nanoparticles for Medical Applications**

Asahi Tomitaka[1*], Hiroki Kobayashi[1], Tsutomu Yamada[1], Minhong Jeun[2], Seongtae Bae[2] and Yasushi Takemura[1]
[1]Department of Electrical and Computer Engineering, Yokohama National University, Japan
[2]Biomagnetics Laboratory, Department of Electrical and Computer Engineering, National University of Singapore, Singapore 117576, Singapore.
*e-mail: d09sd105@ynu.ac.jp

TC213

17:45 **Transparent resistive random access memory (TRRAM) based on Gd_2O_3 film and its resistive switching characteristics**

Kou-Chen Liu[1,*], Wen-Hsien Tzeng[2], Kow-Ming Chang[2], Yi-Chun Chan[1], Chun-Chih Kuo[1], and Chun-Wen Cheng[1]
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[2]Institute of Electronics, Department of Electronics Engineering, National Chiao Tung University, HsinChu, 30010, Taiwan,R.O.C *Contacting Author: Kou-Chen Liu is with Institute of Electro-Optical Engineering, Chang Gung University, Tao-Yuan, 33302, Taiwan, R.O.C (phone:+886-3-2118800; fax: +886-3-2118507; email:jacobliu@mail.cgu.edu.tw)

TC214

18:00 **Effect of Nanoparticle Size on the Green Luminescence of Ti doped ZnO Nanoparticles**

M Naeem[1], S Qaseem[2]

[1]School of Electrical and Computer engineering, National University of Sciences and Technology, Islamabad, Pakistan. [2]Department of Applied Physics, Federal Urdu University of Arts, Science and Technology Islamabad, Pakistan

TC215

Nanophysics Poster Session I

ATRIUM

14:00

Effect of Annealing on the Gate Effective Work-Function Modulation for the Al/TiN/SiO2/P-Si Structure

Xiaorong Wang, Bingzong Li, Guoping Ru, Xinping Qu and Yulong Jiang*

State Key Lab of ASIC and System, Department of Microelectronics,Fudan University, Shanghai 200433, China.State Key Lab of ASIC and System, Department of Microelectronics, Fudan University, Shanghai 200433,China * Contacting Author: Yulong Jiang is with the State Key Lab of ASIC and System, Department of Microelectronics, Fudan University, Shanghai 200433, China (e-mail:yljiang@fudan.edu.cn).

TP201

A novel bistable mechanism with parallel beams and permanent magnets

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TP202

AC Magnetic Susceptibility of Co-Ti-Zn Ferrite Nanoparticles for Hyperthermia Agents

Daiki Shigeoka[1], Hikaru Katayanagi[1], Yuki Moro[1], Shinji Kimura[1], Toshiyuki Mashino[1], Tomoyuki Hiroki[1] and Yuko Ichiyanagi1[2*]

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TP203

Assembly of Upconversion NaREF4 Nanocrystals

Wei Feng, LingDong Sun, and ChunHua Yan*

Beijing National Laboratory for Molecular Sciences, State Key Laboratory of Rare Earth Materials, Chemistry and Applications & PKUHKU Joint Laboratory in Rare Earth Materials and Bioinorganic Chemistry,Peking University, Beijing 100871, China *Contacting Author: Chun H. Yan is with State Key Laboratory of Rare Earth Materials, Peking University, Beijing, China (phone: +86 10-62754179; fax: +86 10-62754179; e-mail: yan@pku.edu.cn)

TP204

Coulomb repulsion at the nanometer-sized contact: a force driving superhydrophobicity, superfluidity, superlubricity and supersolidity

Chang Q Sun,[a,d,*] Yi Sun, [b] and Jisheng Pan,[b] Xiao-Hui Wang,[c] Ji Zhou,[c] and Long-Tu Li[c]

[a] School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798, Singapore [b] Institute of Materials Research and Engineering, Agency for Science,

TP205

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Crystallization Behavior of Ni-Nb-Sb System Bulk Metallic Glass

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TP206

Development of phenol detecting biosensor using PEG hydrogel microparticles

Eunji Jang, Saemi Park, Hyun Jong Lee, Keshava Murthy. P.S and Won-Gun Koh*
Department of Chemical and Biomolecular Engineering, Yonsei University, * Contacting Author : wongun@yonsei.ac.kr

TP207

Effect of microwave annealing on amorphous Si of carbon powder

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TP208

Effect of Nano Structure Anhydrous Agnesium Carbonateon Fire-retardant Performance of PLA/BF Composites

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TP209

Fabrication and Properties of Nano h-BN Coated SiC/ Epoxy Composites

Hai-yun Jin, Hui-cheng Shi, Tao Zhang*, Nai-kui Gao and Zong-ren Peng
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TP210

Hydrogen adsorption on Li metal in boron substituted graphene: ab initio approach

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TP211

Hydrothermal Synthesis of SnO_2 Nanorods from Na_2SnS_3 through Oriented Growth

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TP212

Immunoassays Using Hydrogel Microparticles for Multiplex Detection-Enabled Shape-Coded Array

TP213

Saemi Park, Eunji Jang, Hyun Jong Lee, Keshava Murthy. P.S Won-Gun Koh*
Department of Chemical and Biomolecular Engineering, Yonsei University *Contacting Author: wongun@yonsei.ac.kr

Improved Efficiency and Adhesion Property between the PEDOT: PSS and ITO in Solution-Processed Organic Light-Emitting Diodes

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TP214

Kinetic Surface Roughening of TaN Thin Films Sputtered at Different N_2/Ar Flow Ratios

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TP215

Low Energy Oscillatory Phenomena in Photoreflectance of GaMnAs Films Grown by LT-MBE

X. D. Luo [a), c)*], P. S. Liu [a)], B. D. Ding [a)], Y. Q. Wang [b)], W. K. Ge [c)], and J. N. Wang [c)]
[a)] Jiangsu Key Laboratory of ASIC, Nantong University, Nantong, 226019, China [b)] Key Laboratory of Materials Physics, Institute of Solid State Physics, CAS, Heifei, 230031, China [c)] Department of Physics, Hong Kong University of Science & Technology, Hong Kong, China *Contacting author: X.D.Luo (luoxd@ntu.edu.cn)

TP216

Low power integrated fluxgate sensor for portable electronic equipments

Chong Lei, Yong Zhou, Lei Chen, Zhimin Zhou
National Key Laboratory of Nano/Micro Fabrication Technology, Key Laboratory for Thin Film and Microfabrication of Ministry of Education, Institute of Micro and Nano Science & Technology, Shanghai Jiao Tong University,Dongchuan Road 800, Shanghai 200240, China. Corresponding author: leiysdx@msn.com

TP217

Magnetoresistance Effect and Magnetic Properties of Strain Induced Co/Cu Multilayer Films

C. Rizal[1*] and Y. Ueda[2]
[1] Author is with the Department of Electrical and Computer Engineering, University of British Columbia, Vancouver, Canada.[2] Author is with the Department of Electrical and Electronic Engineering, Muroran Institute of Technology, Hokkaido, Japan. *Contacting Author: Conrad Rizal (Phone: +1 604 822 6268; e-mail:crizal@ece.ubc.ca)

TP218

Wednesday - Jan 6, 2010

CHAN TAI HO HALL

SYMPOSIUM ON NANOSCIENCE AND NANOTECHNLOGY IN CHINA

08:30-08:50

OPENING CEREMONY

Chair: Charles M Lieber, Harvard University

Zhong-Lin Wang, Georgia Institute of Technology

08:50 **In-situ Ultrahigh Vacuum Transmission Electron Microscope Investigations of Nanostructures** KA301

L. J. Chen[1*], and W. W. Wu[2]
[1]Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan, Republic of China, [2]Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan, Republic of China. E-mail: ljchen@mx.nthu.edu.tw

09:15 **Spin-related phenomena in nano-structure of semiconductors** KA302

Junhao Chu
Key Laboratory of Polar Materials and Devices, Ministry of Education, East China Normal University, Shanghai 200062, China. National Laboratory for Infrared Physics, Shanghai Institute of Technical Physics, Chinese Academy of Sciences, Shanghai 200083, China.
E-mail:jhchu@mail.sitp.ac.cn

09:40 **Microstructure and Properties of Plasma Sprayed Nanostructural ZrO_2 Coatings** KA303

Chuanxian Ding, and Xuanyong Liu
Shanghai Institute of Ceramics, Chinese Academy of Sciences, 1295 Dingxi Road, Shanghai 200050, China. (phone: -86-21-52414201; fax: -86-21-52413903; email: cxding@sunm.shcnc.ac.cn)

10:05 **Spin transport in Diluted Magnetic Semiconductors** KA304

Y.W. Du*, F.M. Zhang, D Wu and S.J. Xiong
National Laboratory of Microstrctures Nanjing, Department of Physics, Nanjing University and Jiangsu Provincial Laboratory for NanoTechnology. dyw@nju.edu.cn

10:30 Break

Chair: A Paul Alivisatos, Lawrence Berkeley National Laboratory

You-Nan Xia, Washington University in St. Louis

10:50 **Oscillations of Nonlinear Magnetoresistance in Microwave-Irradiated 2D Semiconductors** KA305
X. L. Lei
Department of Physics, Shanghai Jiao Tong University, Shanghai, China. Email: xllei@sjtu.edu.cn

11:15 **Electronics and Photonics Prototype Devices Based on Compound Semiconductor Nanowires/Nanobelts** KA306
L. Dai & **G. G. Qin**
Department of Physics and State Key Lab for Mesoscopic Physics, Peking University, Beijing 100871, China.

11:40 **Efficient Luminescence from Nanostructured Aggregates of Organic Luminogens** KA307
Ben Zhong Tang
Department of Chemistry, The Hong Kong University of Science & Technology, Clear Water Bay, Kowloon, Hong Kong, China Phone: +852-2358-7375 (Office); Fax: +852-2358-1594 (Office); E-mail: tangbenz@ust.hk

12:05 **Surface Modification of TiO_2 and ZnO Nanosurfaces and Applications** KA308
S. Y. Tong,[1,2*] Xu Hu,[1] R. Q Zhang,[1] M. K. Fung,[2] C. T. Yip,[2] A. M. C. Ng,[2] F. Fang,[2] A. B. Djurišić[2]
[1]Dept. of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong. [2]Dept. of Physics, The University of Hong Kong, Pokfulam Road, Hong Kong. *E-mail: apdtong@cityu.edu.hk

12:30 Lunch

Chair: Lars Samuelson, Lund University

Paul S Weiss, University of California, Los Angeles

14:00 **Evolution of core-shell silicon nanowires grown on silicon substrates by pulsed laser ablation** KA309
Hailing Tu, Lei Wang, Xing Chen, Shiwei Zhu, Jun Du and Qinghua Xiao
Institute of Advanced Electronic Materials, General Research Institute for Nonferrous Metals, Beijing, 100088, China, tuhl@grinm.com

14:25 **Nucleation and Growth of Epitaxial Silicide in Nanowire of Silicon** KA310
Yi-Chia Chou,[1] Kuo-Chang Lu,[2] and **K. N. Tu**[1]
[1] Department of Materials Science and Engineering, University of California at Los Angeles, Los Angeles, CA 90095-1585, USA. [2] Department of Materials Science and Engineering, National Cheng Kung University, Tainan 701, Taiwan, Republic of China

14:50 **Superconducting Nanowires for Detecting Single Photons at Telecommunication Wavebands** KA311

L. Kang, J. Chen, L. B. Zhang, and **P. H. Wu**
Research Institute of Superconductor Electronics (RISE), University of Nanjing, Nanjing, China.
E-mail: phwu@nju.edu.cn

15:15 **Rashba electron transport in 1D quantum waveguides** KA312

LIU DuanYang[1], **XIA JianBai**[1,2], & CHANG YiaChung[2]
[1]State Key Laboratory for Superlattices and Microstructures, Institute of Semiconductors, Beijing 100083, China. [2]Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan 11529.
Corresponding author email: xiajb@red.semi.ac.cn

15:40 Break

Chair: Harold Kroto, Florida State University

Pei-Dong Yang, University of California, Berkeley

16:00 **Synthesis and Physical Properties of Macroscale Carbon Nanotube Architectures** KA313

S.S. Xie, W.J. Ma, W.Y. Zhou
Beijing National Laboratory of Condensed Matter, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, P.R. China. ssxie@aphy.iphy.ac.cn

16:25 **Probing Superexchange Interaction in Molecular Magnets by Spin-Flip Spectroscopy and Microscopy** KA314

Xi Chen,[1] Ying-Shuang Fu,[1, 2] Shuai-Hua Ji,[1, 2] Xu-Cun Ma,[2] Wen-Hui Duan,[1] Jin-Feng Jia,[1] and **Qi-Kun Xue**[1, 2 *]
[1] Department of Physics, Tsinghua University, Beijing 100084, China. [2] Institute of Physics, Chinese Academy of Sciences, Beijing, 100190, China. * E-mail: qkxue@mail.tsinghua.edu.cn

16:50 **Biological Effects and Risks of Nano-bioceramics** KA315

Xingdong Zhang
National Engineering Research Center for Biomaterials, Sichuan Univerisity. zhangxd@scu.edu.cn; xingdongzhang@hotmail.com

17:15 **Atomic resolution in-situ TEM observation on brittle-ductile transition of nano-wires with covalent bonding** KA316

X. D. Han and **Z. Zhang***
Institute of Microstructure and Property of Solid Materials, Beijing University of Technology, Ping-le-yuan 100, Chaoyang Dis., 100124 Beijing, China. *zezhang@bjut.edu.cn

Wednesday - Jan 6, 2010

ASIA WORLD EXPO CENTER

18:30-22:30

CONFERENCE BANQUET

Thursday - Jan 7, 2010

Nanofabrication Oral Session I — LT-18

Chair: Yue ZHANG, The University of Science and Technology Beijing

8:30 **Carbon-assisted Growth Technology for ZnO Nanowires**
C. Cheng, T. L. Wong, W. Li, D.P. Yu and N. Wang*
1) Department of Physics and the Institute of Nano Science and Technology, the Hong Kong University of Science and Technology, Hong Kong, China, 2) Department of Physics, Peking University, Beijing, P.R. China *Contacting Author: Ning Wang (phone: +852-23587489; fax: +852-23581652; email: phwang@ust.hk). — FC401

8:45 **Controllable Growth of Zinc oxide single-crystal hexagonal microtubes by hydrothermal synthesis**
Deng Hong*, Jinju Chen and Min Wei
State Kcy Laboratory of Eelctronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China *Contacting Author: Hong Deng is with State Kcy Laboratory of Eelctronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China. (phone: +86-28 83202551;email: hdeng@uestc.edu.cn). — FC402

9:00 **Dopant Induced Shape Evolution of Colloidal Nanocrystals: The Case of Zinc Oxide**
Ye Feng Yang, Yi Zheng Jin,* Zhi Zhen Ye, and Hai Ping He
State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering, Zhejiang University, P.R. China *Contacting Author: yizhengjin@zju.edu.cn — FC403

9:15 **Effects of Precursor Concentration on ZnO Nanorods Grown on Flexible PET Substrate by Hydrothermal Synthesis**
C. M. Shin, J.Y. Lee, J.H. Heo, T.M. Lee, J.H. Park, H. Ryu*
Department of Nano Systems Engineering, Inje University *Contacting Author: Hyukhyun Ryu is with the Department of Nano Systems Engineering, Inje University, Obang-dong, Gimhae, Gyeongnam 621-749, Republic of Korea.(phone: +82-55-320-3874, email: hhryu@inje.ac.kr) — FC404

9:30 **Effects of O_2 Plasma Power on the Structural and Surface Morphologies of ZnO Thin Films Grown on the Flexible PES Substrate by Atomic Layer Deposition**
J.H. Heo, J.Y. Lee, C. M. Shin, T.M. Lee, J.H. Park, H. Ryu*
Department of Nano Systems Engineering, Inje University *Contacting Author: Joo Hoe Heo, the Department of Nano Systems Engineering, Center for Nano Manufacturing, Inje University, Obang-dong, Gimhea, Gyeongnam 621-749, Republic of Korea (phone: +82-55-320-3874, e-mail: hhryu@inje.ac.kr) — FC405

9:45 **Fabrication of phosphorus-doped ZnO quantum dots by metal organic chemical vapor deposition**
L. P. Zhu*, Y. Z. Wu, Y. J. Zeng, H. P. He, J. M. Lin, J. Jiang, Z. Z. Ye, and B. H. Zhao
State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering, Zhejiang University, Hangzhou, 310027, China *Contacting Author: Liping Zhu is with the State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering, Zhejiang University, Hangzhou, China. (Phone: 86-571-87953139, Email: zlp1@zju.edu.cn) — FC406

10:00 Break

Chair: Aleksandra Djurisic, The University of Hong Kong

10:15 **Top emerging technologies for self-powered nanosystems: nanogenerators and nanopiezotronics**
Zhong Lin Wang
School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta GA 30332-0245 USA. E-mail: zhong.wang@mse.gatech.edu
KS417

10:45 **Highly Ordered Growth of ZnO Nanostructures by Combination of Nanoimprint Lithography and Hydrothermal Method**
Shao-Ren Deng, Student Member, IEEE, Tao Chen, Shu-Yi Liu, Yi-Fang Chen, Ejaz Huq, Ran Liu and Xin-Ping Qu*, Senior Member, IEEE
State Key Lab of ASIC and System, Department of Microelectronics, Fudan University, Shanghai 200433, China. *Contacting Author: Xin-Ping Qu is with the State Key Lab of ASIC and System, Department of Microelectronics, Fudan University, Shanghai 200433, China (e-mail:xpqu@fudan.edu.cn).
FC407

11:00 **Low-temperature Fabrication of Bunch-shaped ZnO Nanowires Using an Sodium Hydroxide Aqueous Solution**
Xiulan Hu*, Yoshitake Masuda, Tatsuki Ohji, and Kazumi Kato
National Institute of Advanced Industrial Science and Technology (AIST), 2266-98 Anagahora, Shimoshidami, Moriyama-ku, Nagoya 463-8560, Japan. (AIST), 2266-98 Anagahora, Shimoshidami, Moriyama-ku, Nagoya 463-8560, Japan. (phone: +81-52-7367237; fax: +81-52-7367234; email: xiulan-hu@aist.go.jp)
FC408

11:15 **Microstructures and Photoluminescence Properties of Three-dimensional Multi-layered ZnO Flowers by Surfactant-free Hydrothermal Method**
Xu Lingling, Gao Hong, Li Zeming, Lv Wei, Liu Jia, Zhang Xitian
Heilongjiang Key Laboratory for Advanced Functional Materials and Excited State Processes, Department of Physics, School of Physics and Electronic Engineering, Harbin Normal University, Harbin 150025, P.R. China *Contacting author: Xu Lingling is with Department of Physics, School of Physics and Electronic Engineering, Harbin Normal University, Harbin 150025, P.R. China. (phone:+86-451-88060526; email:xulingling_hit@163.com)
FC409

11:30 **One Dimensional ZnO Nanostrucures Grown on ZnO/Si by Hydrothermal Process**
Yinglei Tao, Yongsheng Wang*, Ming Fu, and Dawei He
Institute of optoelectronic technology, Beijing Jiaotao Uniersity, Beijing, China
FC410

11:45 **Optical and adsorption Properties of ZnO nanotubes prepared from aqueous solution**
Dewei Chu*, Yoshitake Masuda, Tatsuki Ohji, and Kazumi Kato
National Institute of Advanced Industrial Science and Technology (AIST), 2266-98 Anagahora, Shimoshidami, Moriyama-ku, Nagoya 463-8560, Japan. *Contacting Author: Dewei Chu is with National Institute of Advanced Industrial Science and Technology (AIST), 2266-98 Anagahora, Shimoshidami, Moriyama-ku, Nagoya 463-8560, Japan. (Phone: +81-52-7367238; fax: +81-52-7367234; email: Dewei-chu@aist.go.jp)
FC411

12:00 **Photoresponse characteristics of vertically aligned ZnO nanowires**
J. P. Kar1, S. N. Das, J. H. Choi, T. I. Lee and J. M. Myoung*
Yonsei University, Seoul, Republic of Korea. *Contacting Author: jmmyoung@yonsei.ac.kr
FC412

12:15 **Preparation and Optical Properties of ZnO Nanostructures**
Zeming Li, Lingling Xu, and Xitian Zhang*
Heilongjiang Key Laboratory for Advanced Functional Materials and Excited State Processes, School of Physics and Electronic Engineering, Harbin Normal University, Harbin 150025, P.R. China *Contacting Author: Xitian Zhang, School of Physics and Electronic Engineering, Harbin Normal University, Harbin 150025, P.R. China. (phone:+86-451-88060629; email: xtzhangzhang@hotmail.com)
FC413

12:30 Lunch

14:00 Poster Session

Nanofabrication Oral Session II

LT-14

Chair: Fu-Hsing LU, National Chung Hsing University

8:30 **Fabrication and Characterization of Ordered GeSi Nanoislands on Si (001) Substrates**
Zhenyang Zhong*, Peixuan Chen, Bingying Pan, Yanwu Chen, Zhenhua An, Fang Lu, and Zuimin Jiang
Surface Physics Laboratory (National Key Laboratory) and Department of Physics, Fudan University, Shanghai 200433, China *Contacting Author: Zhenyang Zhong is with Surface Physics Laboratory (National Key Laboratory) and Department of Physics, Fudan University, Shanghai 200433, China. (phone: +86 21-55664059, email: zhenyangz@fudan.edu.cn) .
FC414

8:45 **Aloe Vera-Plant Extract Solution Synthesis, Kinetic Study and Magnetic Properties of Nanocrystalline $Ni_{0.35}Cu_{0.25}Zn_{0.4}Fe_2O_4$**
Laokul P[1,2], Maensiri S[1], and Seraphin S[3]
[1]Small & Strong Materials Group (SSMG), Department of Physics, Faculty of Science, Khon Kaen University, Khon Kaen, 40002, Thailand. [2]Department of Physics, Faculty of Science, Mahasarakham University, Kantharawichai District,Maha Sarakham Province, 44150, Thailand. [3]Department of Materials Science and Engineering, The University of Arizona, Tucson, Arizona 85721, U.S.A. *Contacting Author: Corresponding author: sanmae@kku.ac.th and santimaensiri@gmail.com (Dr. Santi Maensiri)
FC415

9:00 **Biomimetic Synthesis of Hydrophobic Calcium Carbonate Nanoparticles**
Jian Li, Chengyu Wang*, Xianglin Zhai and Yang Xu
School of materials chemistry, Department of materials science engineering, northeast forestry university, Harbin, China. *Contacting Author: Chengyu Wang is with the School of Materials Chemistry, Department of Materials Science and engineering, Northeast Forestry University, Harbin, China.(phone: +86 451-82190116; email: wangcy@netu.edu.cn).
FC416

9:15 **Controllable Synthesis of Hollow Ni@SiO_2 with Sub-nanometer Nickel**
Rongwen Lu[1,2], Anmin Cao[1], Goetz Veser[1]
[1]Department of Chemical Engineering, University of Pittsburgh. [2]State Key Laboratory of Fine Chemicals, Dalian University of Technology Contacting Author: Goetz Veser , gveser@pitt.edu
FC417

9:30 **Transport Phenomena in Carbon Nanostructures**
Toshishige Yamada, Tsutomu Saito, Drazen Fabris, and **Cary Y. Yang**
Center for Nanostructures, Santa Clara University, Santa Clara, California. Phone: (408) 554-6814 Fax: (408) 554-5474 Email: cyang@scu.edu
KS420

10:00 Break

Chair: Chenguo HU, Chongqing University

10:15 **Synthesis of nanometal(shell)-$LiFePO_4$/C (core) composite particles by ultrasonic electrodeposition**

Qi FAN[1], YueFeng TANG* and YanFeng CHEN
Department of Materials Science and Engineering, and National Laboratory of Solid State Microstructures, Nanjing University, Nanjing 210093, China *Corresponding Author, E-mail: yftang@nju.edu.cn, Fax:+86-25-83595535

FC418

10:30 **The Thermal Stability of Nanocrystalline Cu Prepared by High Energy Ball Milling**

J.M.Tao[1], X.K.Zhu[1], P.Z.Wong[2], R.O. Scattergood[2], and C.C. Koch[2]
[1]Department of Materials Science and Engineering, Kunming University of Science and Technology, Kunming, Yunnan, China. [2]Department of Materials Science and Engineering, NC State University, Raleigh, NC, USA. *Contacting Author: Xinkun Zhu is with the Department of Materials Science and Engineering, Kunming University of Science and Technology; No.253, Xuefu Road, Kunming, 650093, China, (phone: 86-871-519-8154; fax: 86-871-516-1278; e-mail: xk_zhu@hotmail.com)

FC419

10:45 **Magnetic Hollow Mesoporous Silica Nanospheres with Large Pore Sizes: Vacuum Impregnation Technique, Superparamagnetic Property and Ultra-fast Immobolization of Enzymes**

Yu Chen, Hangrong Chen*, Limin Guo, and Jianlin Shi*
The State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, 200050, China *Contacting Author: (Phone: +86-21-52412714; 52412700; Email: jlshi@sunm.shcnc.ac.cn ; hrchen@mail.sic.ac.cn)

FC420

11:00 **Nitrogen-doped TiO_2 Nano-crystal Colloid: A printable "Ink" for potential Solar Energy Devices**

Zheng Jiang[1,2]*, Huahong Shi[1],Guidong Yang[1], Tiancun Xiao[1], Martin O. Jones[1,3], Peter P. Edwards[1]*
[1]Inorganic Chemistry Laboratory, Department of Chemistry, University of Oxford, OX1 3QR, U.K. [2]Jesus College, University of Oxford, OX1 3DW, U.K. [3]Rutherford Appleton Laboratory, Chilton, Harwell Science and Innovation Campus, Didcot, OX11 0QX *Main authors' e-mail address: zheng.jiang@jesus.ox.ac.uk and peter.edwards@chem.ox.ac.uk

FC421

11:15 **Preparation and Characterization of Ultrafine Ni Powder by Freeze-drying**

Xiaoli Xi*, Zuoren Nie, Peiyun Tong, and Tieyong Zuo
College of Material Science and Engineering, Beijing University of Technology, Beijing 100124, China *Contacting Author: xixiaoli@bjut.edu.cn; Tel/Fax: +86-10-6739-1536

FC422

11:30 **Refined Nano-Colloid Silica Prepared by Improved Ion Exchange Method and Used for Polishing Silicon**

Wang Haibo*, Zhang Lei, Song Zhitang, Liu Weili and Hu Xiaokai
State key Laboratory of Functional Material for Informatics, Laboratory of Nanotechnology, Shanghai Institute of Micro-system and Information Technology, Chinese Academy of Science *Contact author is with the State key Laboratory of Functional Material for Informatics, Laboratory of Nanotechnology, Shanghai Institute of Micro-system and Information Technology, Chinese Academy of Science (Tel: +86-21-62511070-8408 E-mail: wanghb@mail.sim.ac.cn.)

FC423

11:45 **Self Assembly pattern prediction of Liquid Carbon Nanoparticles at low temperatures**
Sayonsom Chanda, Dwaipayan Mukhopadhyay
Department of Electrical Engineering, National Institute of Technology, Durgapur — FC424

12:00 **Crystallization and Electrochemical Corrosion Behaviors of Amorphous and nanocrystalline Fe-based Alloys**
Xiang Li, Yuxin Wang, Chunfeng Du, Chenkui Li, Biao Yan*
Shanghai Key Lab of Metal Functional Materials, School of Materials Science and Engineering, Tongji University, Shanghai 200092, China. *Contacting Author: Biao Yan is with with Shanghai Key Lab of Metal Functional Materials, School of Materials Science and Engineering, Tongji University, Shanghai 200092, China.(Phone: +86-21 65982463; fax: +86-21 65983462; email: yanbiao@vip.sina.com). — FC425

12:15 **Direct Route to Fabrication and Characterization of $W_{18}O_{49}/TiO_2$ Core-Shell Nanoparticles**
H. C. Lin[1]*, C. Y. Su[2], Y. Hwu[1]
[1]Insitute of Physics, Academia Sinica, Nankang, Taipei, 106, Taiwan, [2]Institute of Manufacturing Technology, National Taipei University of Technology, Taipei, 106, Taiwan *Contacting Author: H. C. Lin — FC426

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Kien Wen SUN, National Chiao Tung University

16:15 **Facil Synthesis of Monodispersed Superparamagnetic Fe3O4 Nanoparticles with controlled particle sizes**
Dengke Pan, Hui Zhang*, Ting Fan and Jiangang Chen
State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, P.O. Box 98, Beijing 100029, China (*Corresponding author. Tel: +8610-6442 5872; Fax: +8610-6442 5385; Email: huizhang67@gst21.com). — FC427

16:30 **Photochemical Preparation of CdS Nanoparticles on Carboxyl- Functionalized Copolymer Microspheres and Their Visible-light Photocatalytic Activities**
Zhenxun Huang, postgraduate student, Fengqiang Sun*, Prof. Dr. Jianxiong Tan and Lijun Tao
School of Chemistry and Environment, South China Normal University *Contacting author: Fengqiang Sun E-mail: fqsun@scnu.edu.cn; fengqiangsun@yahoo.com.cn — FC428

16:45 **Approaching Molecular Nanodevices using Engineered Nanowire Templates**
Yu Huang
Department of Materials Science and Engineering, University of California, Los Angeles, Los Angeles CA 9095. — KS407

17:15 **Novel Preparation of Nanoporous SnO_2 with High Potocatalytic Activity by a Photochemical Method**
Hongjuan Wang, PostDoctor, Fengqiang Sun*, Prof. Dr., Yu Zhang, Qingsong Wu and Jianpeng Li
School of Chemistry and Environment, South China Normal University *Contacting author: Fengqiang Sun E-mail: fqsun@scnu.edu.cn; fengqiangsun@yahoo.com.cn — FC429

17:30 **Synergistic Effect of Eu^{3+} and Gd^{3+} Co-doping on photocatalysis Activity of Nano-TiO_2** — FC430

Lu Xudong Jiang Chengzhi Zhang Xingming and Wang Xia
No.6,Manping Middle Road,Hnnan District,Shenyang,110168,China *Contacting Author: Lu Xudong is with Equipment Engineering College, Shenyang, Ligong University, Shenyang, China. (phone:+86-24-13082431825;email:lxd_8181@163.com)

17:45 **Production of Ni-Mo-P Powder by the Combined Use of Hypophoshorous Acid Reduction and Ultrasonic Reduction**
Atsushi Chiba* and Kentaro Fukuzawa
Department of Materials Chemistry, Yokohama National University, 79-5,Tokiwadai, Hodogaya-Ku, Yokohama 240-8501, Japan *Contacting Author; A.Chiba is with Department of Materials Chemistry, Yokohama National University, 79-5, Tokiwadai, Hodogaya-Ku, Yokohama 240-8501, Japan (hone: +81 45 - 339 - 3951; e-mail: achiba@ynu.ac.jp) FC431

18:00 **Aqueous Synthesis of Thiol-Capped Water-Soluble Fe-doped ZnS nanocrystals**
Ruishi Xie, Lingyun Liu, Lihua Li, Yuanli Li, Qiang Chen, Xi Yue, Dingquan Xiao and Jianguo Zhu*
College of Materials Science and Engineering, Sichuan University,Chengdu 610064, China FC432

Nanofabrication Oral Session III — LT-16

Chair: Jian LU, The Hong Kong Polytechnic University

8:30 **An Artificial Nose Based on M-Porphyrin (M = Mg, Zn) Thin Film and Optical Spectroscopy**
Sumana Kladsomboon[1], Theeraporn Puntheeranurak[2], Sirapat Pratontep[3] and Teerakiat Kerdcharoen[1]*
[1]Department of Physics and [2]Department of Biology, Faculty of Science, Mahidol University, Bangkok 10400, Thailand. [3]College of KMITL Nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Chalongkrung Rd., Ladkrabang, Bangkok 10520, Thailand. *Contacting Author: Teerakiat Kerdcharoen is with the Department of Physics and Center of Nanoscience and Nanotechnology, Faculty of Science, Mahidol University, Bangkok 10400, Thailand. (E-mail address: sctkc@mahidol.ac.th Fax: +662201 5843) FC434

8:45 **Fabrication and Characterization of Co-Sputtering Au/SiO_2 Thin Films Prepared by RF Magnetron Sputtering**
Z.Aspanut, C.K.Wah, C.S.Kong, R.Ritikos, G.B.Tong, S.A. Rahman, M.R. Muhammad
Low Dimensional Research Centre Department of Physics, Faculty of Science, University of Malaya 50603 Kuala Lumpur. FC435

9:00 **Fabrication of Highly Ordered Porous Nickel Phosphide Films and Their Application as Anode for Lithium Ion Batteries**
Jiayuan Xiang, Jiangping Tu*, Xinhui Xia, Li Zhang, Yun Zhou, Shaojun Shi
Department of Materials Science and Engineering, Zhejiang University, Hangzhou, 310027 *Contacting Author: Tel.: +86-571-8795-2573; Fax: +86-571-8795-2856. E-mail address: tujp@zju.edu.cn (J.P. Tu) FC436

9:15 **Fabrication of micro- and nanostructures through unconventional means**
Tingbing Cao*, Dan Zhao, Nan Zhu, Mianqi Xue, Fangfang Wang
Department of Chemistry, Renmin University of China, Beijing 100872 *Contacting Author: E-mail: tcao@chem.ruc.edu.cn FC437

9:30 **Fabrication of Proton Conducting Y_2O_3-doped $BaZrO_3$ Thin Films by Electrostatic Spray** FC438

Deposition

K. Somroop[1] and R. Pornprasertsuk[1,2]*

[1] Research Unit of Advanced Ceramics, Department of Materials Science, Faculty of Science, Chulalongkorn University, Bangkok, Thailand, [2] National Center of Excellent for Petroleum, Petrochemicals and Advance Materials, Chulalongkorn University, Bangkok, Thailand *Contacting author: Rojana Pornprasertsuk is with the department of Materials Science, Faculty of Science, Chulalongkorn University, Bangkok, Thailand (phone: +66-2-218-5547; fax +66-2-218-5561; email: rojana.p@chula.ac.th)

9:45 **Growth and Characterization of Er Doped ZnO Prepared by Reactive Ion Beam Sputtering** FC439

Chung-Chi Liau and Liang-Chiun Chao*

Department of Electronic Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan R. O. C. *Contacting author: lcchao@mail.ntust.edu.tw

10:00 Break

Chair: Piyi DU, Zhejiang University

Xin-Ping QU, Fudan University

10:15 **Influence of Nano-Embossing on Properties of $Pb(Zr_{0.3},Ti_{0.7})O_3$ Ferroelectric Thin Film** FC440

Zhenkui Shen, Zhihui Chen, Jiangrong Fang, Bingrui Lu, Zhijun Qiu, Anquan Jiang, Yifang Chen, Xinping Qu and Ran Liu*

State Key Lab of ASIC and System, Department of Microelectronics, Fudan University, Shanghai 200433, China. *Contacting Author: Ran Liu is with the State Key Lab of ASIC and System, Department of Microelectronics, Fudan University, Shanghai 200433, China (e-mail: rliu@fudan.edu.cn).

10:30 **Structural properties characterization of TiO_2 thin films prepared by sol-gel process on Si and Ge based substrates** FC441

Yannan Xie, Huolin Huang， Feng Zhang and Zhengyun Wu*

Department of Physics, Xiamen University, Xiamen, China.*Contacting Author: Zhengyun Wu is with the Department of Physics, Xiamen University, China. (phone: +86-592-2180522; fax: +86-592-2189426; zhywu@xmu.edu.com) *Contacting Author: Zhengyun Wu is with the Department of Physics, Xiamen University, China. (phone: +86-592-2180522; fax: +86-592-2189426; zhywu@xmu.edu.com)

10:45 **Magnetic and Optical properties of Mn doped ZnO nanocrystalline films** FC442

Chuan-hui Xia, Chen-guo Hu*, Yong-shu Tian, Buyong Wan, Xiaoshan He, Jing Xu

Department of Applied Physics, Chongqing University, Chongqing, 400044, China. *Contacting author: Chenguo Hu is with Department of Applied Physics, Chongqing University, Chongqing, China. (phone: +86 23-65104741; email: hucg@cqu.edu.cn)

11:00 **Mechanism behind the Formation of Self-assembled Nanosized clusters in Diamond-like carbon nanocomposites** FC443

Y. M. Foong and Daniel H.C. Chua*

Department of Materials Science & Engineering, Faculty of Engineering, National University of Singapore, 117574, Singapore. * Corresponding author: msechcd@nus.edu.sg, fax +65 6776 3604

11:15 **Nanoindentation study on mechanical properties of Zr(C)N films deposited on NiTi shape memory alloy** FC444

C. L. Chu [a,] *, H. L. Ji [a], C. Guo [a], X. B. Sheng [a], Y. S. Dong [a], P. H. Lin [a], T. Hu [b], P. K. Chu [b]

[a] School of Materials Science and Engineering and Jiangsu Key Laboratory for Advanced Metallic Materials, Southeast University, Nanjing, 211189, China [b] Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China
*Corresponding authors, E-mail address: clchu@seu.edu.cn (C.L. Chu)

11:30 **Preparation of $Ba_xSr_{1-x}TiO_3$ thin films on TiN/Si by a novel hydrothermal-galvanic couple method**

Pei-Hsuan Chan and Fu-Hsing Lu*
Department of Materials Science and Engineering, National Chung Hsing University, Taiwan
*Contacting Author: Fu-Hsing Lu is with the Department of Materials Science and Engineering, National Chung Hsing University, 250, Kuo Kuang Rd., Taichung 402, Taiwan R.O.C. (phone: 886-4-22851455; fax: 886-4-22857017; e-mail: fhlu@dragon.nchu.edu.tw)

FC445

11:45 **Raman Spectra of the Carbon Films by Pulsed Laser Deposition using C_{60} Target**

A. N. M. Ashrafuzzaman1, Ahmed Zubair1, S. M. Mominuzzaman1, 2,* Tetsuo Soga2 and Takashi Jimbo2
1Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology (BUET), Dhaka- 1000, Bangladesh 2Department of Environmental Technology and Urban Planning, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya 466-8555, Japan
*Corresponding author. phone: +880-2-8611594; fax: +880-2-8611594; E-mail: momin@eee.buet.ac.bd (S. M. Mominuzzaman)

FC446

12:00 **Size effects of Superelasticity in Nanocrystalline NiTi Shape Memory Alloy**

Fei Wang[1], Ping Huang[2,]*, Wenqiang Chen[2], and Kewei Xu[2]
[1]MOE Key Laboratory for Strength and Vibration, School of Aerospace,Xian Jiaotong University, Xi'an, 710049, People's Republic of China. [2]State-key Laboratory for Mechanical Behavior of Material, Xi'an Jiaotong University, Xi'an, 710049, People's Republic of China. *Contacting Author: Email address: huangping@mail.xjtu.edu.cn, Phone:0086-29-82663869, Fax: 0086-29-82663453

FC447

12:15 **Low-Temperature Aqueous Processing for Generation of Nanostructured Oxide Films**

Junghyun Cho*, Biplab K. Roy, and Guangneng Zhang
Dept. of Mechanical Engineering & Materials Science and Engineering Program, State University of New York (SUNY) at Binghamton *Contacting Author: Junghyun Cho, (e-mail: jcho@binghamton.edu)

FC448

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Beng Kang TAY, Nanyang Technological University

16:15 **Self-assembly Fabrication of Two-dimensional Nano-netwoks of Porphyrin-based Molecules**

Ziliang Shi and Nian Lin*
Department of Physics, Hong Kong University of Science and Technology, Hong Kong.
*Contacting Author: Nian Lin (e-mail: phnlin@ust.hk).

FC449

16:30 **The Role of Bias Potential on Atomic Layer Deposition Al_2O_3 Thin Films in ECR Plasma Source**

FC450

Qiang Chen[1]*, Xincun Li[1], Lijun Sang[1], Yuefei Zhang[2], Lizhen Yang[1], Zhongwei Liu[1], and Zhenduo Wang[1]
[1] Laboratory of Plasma Physics and Materials, Beijing Institute of Graphic Communication, 102600, Beijing, China. [2] Beijing University of Technology, 100124, Beijing, China. *Contacting Author.: Qiang Chen (Tel:+86-10-6026-1099, email: lppmchenqiang@hotmail.com)

16:45 **Flexible MIM Capacitors Using Zirconium-Silicate and Hafnium-Silicate as Gate-Dielectric Films**

Jagan Singh Meena, Min-Ching Chu and Fu-Hsiang Ko*
Institute of Nanotechnology, National Chiao Tung University, Taiwan (R.O.C.) *Contacting Author: Prof. Fu-Hsiang Ko, E-mail: fhko@mail.nctu.edu.tw

FC451

17:00 **The Origin for High Transition Temperature of TiPd and TiPt Shape Memory Films**

Shiqiang Qian *[12], Qingchao Tian[2], and Jiansheng Wu[2]
[1]Meterials Engineering Institute, Shanghai University of Engineering Science, Shanghai, China
[2]School of Materials Science and Engineering, Shanghai Jaiao Tong University, Shanghai, China
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FC452

17:15 **High Purity Nano Abrasives for Chemical Mechanical Planarization Application**

Weili Liu[1,2, a]*, zhitang Song [1,2,b]
[1]Shanghai Institute of Microsystem and Information Technology, China, Shanghai, 200050, China
[2]Shanghai Xinanna Electronic Science and Technology Co. Ltd, Shanghai, 201506, China
*Corresponding authors: arabbitlwl@mail.sim.ac.cn, bztsong@mail.sim.ac.cn

FC453

17:30 **Nanostructured Multiferroic Double Perovskite Thin Films**

Deepak, Nitin Choudhary, and Davinder Kaur*
Department of Physics and Centre of Nanotechnology, Indian Institute of Technology Roorkee, Roorkee India Corresponding author: Dr. Davinder Kaur Department of Physics & Center of Nanotechnology, Indian Institute of Technology Roorkee, Roorkee, India Tel: 91-1332-285407; Fax: 91-1332-273560 Email: dkaurfph@iitr.ernet.in

FC454

17:45 **The Electrical Properties Improving of ITO Films on Cholesteric Liquid Crystal Layer by Using Two-steps Deposition Process**

HsiHao Huang, HsuanKai Lin*, and ChungShu Chang
1Display Technology Center/Industrial Technology Research Institute, Hsinchu, Taiwan. 2Laser Application Technology Center/ Industrial Technology Research Institute South, Tainan, Taiwan. *Contacting Author: Hsuankai Lin is with industrial Technology Research Institute South, Taiwan. (phone: +886-6-6939086; e-mail: HKLin@itri.org.tw)

FC455

18:00 **Preparation of nanoporous copper by dealloying Al-Cu alloy**

Wang Ying, Mao Rong, Liang Shuhua
(School of Materials Science and Engineering, Xi'an University of Technology, Xi'an 710048, China) ying.gongzuo@163.com

FC456

Nanofabrication Poster Session II

ATRIUM

14:00

Preparation and Characterization of W/Al_2O_3 core/shell Nanocomposites

Xiangyang Xu, Xiaoli Xi*, Zuoren Nie, Zhihong Wang, and Tieyong Zuo

FP401

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Preparation and Characterizations of Cu_2S Nanowalls by Dispersing Cu Foils in Na_2S Solution

Yung-Tang Nien[1],*, Yu-Hsuan Chang[2] and In-Gann Chen[2]

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FP402

Preparation and Dielectric Properties of Epoxy/Silica Nanocomposites

Huicheng Shi, Naikui Gao*, Haiyun Jin, Bangfa Chen and Gang Zhang

All authors are with State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an 710049, China *Contacting Author: Naikui Gao is with State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, Xi'an, China. (phone: +86-29 82667884; fax:+86-29 82668567; email: gnk@mail.xjtu.edu.cn).

FP403

Preparation and Photocurrent Response of ZnO/TiO_2 Nanotubes Composite

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FP404

Preparation and Properties of Micelle Nanoparticles by P4VP-b-PMAA Copolymer

Xifeng Zhang 1), Xiaonong Cheng 2), Yehai Xu 1), Zhijuan Cao 1), Wei Hao 1), and Chong Yan 2)

.1 School of Chemistry and Chemical Engineering, Jiangsu University, 301 Xuefu Road, Zhenjiang 212013, China. 2 School of Materials Science and Engineering, Jiangsu University, 301 Xuefu Road, Zhenjiang 212013, China. *Contacting Author: Xifeng Zhang is with School of Chemistry and Chemical Engineering, Jiangsu University, China. (phone: +86-511 88791800; fax:+86-511 88791708; email: zhangxf_chzh@163.com)

FP405

Preparation of Cu Nanowires and Their Tribological Property in Liquid Paraffin

Xifeng Zhang [1)], Xiaonong Cheng [2)], Yehai Xu [1)], Zhijuan Cao [1)], Wei Hao [1)], and Chong Yan [2)]

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FP406

Preparation of $KNbO_3$ Nanowires by a Novel Intermediate Template Sol-gel Method

Chao Wang, Yudong Hou*, Haiyan Ge, Mankang Zhu and Hui Yan

Key Laboratory of Advanced Functional Materials of China Education Ministry, College of Materials Science and Engineering, Beijing University of Technology, Beijing 100124, China. *Contacting Author: Yudong Hou is with Key Laboratory of Advanced Functional Materials of China Education Ministry, College of Materials Science and Engineering, Beijing University of Technology, Beijing 100124, China. (phone: +86-10-67392445; fax: +86-10-67392445; email: ydhou@bjut.edu.cn)

FP407

Preparation of Luminescent Dye Doped Core-Shell Nanoparticles and Their Application in cell recognition

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FP408

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Preparation of Mesoporous N-doped TiO_2 via Solvent Evaporation Induced Assembly

Zheng Jiang[1,2]*, Nianjun Luo[1], Martin O. Jones[1, 3], Tiancun Xiao[1], Peter P. Edwards[1]*

[1]. Inorganic Chemistry Laboratory, Department of Chemistry, University of Oxford, OX1 3QR, U.K.[2]. Jesus College, University of Oxford, OX1 3DW, U.K.[3]. Rutherford Appleton Laboratory, Chilton, Harwell Science and Innovation Campus, Didcot, OX11 0QX — FP409

Preparation of Metal Oxide Nanoparticles Using a Biomolecular Assembly as a Template

Inho Lee and Sang-Yup Lee*

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Production of Ni-W-P Powder by the Combined Use of Hypophoshorous Acid Reduction and Ultrasonic Reduction

Atsushi Chiba* and Kenta Goto

Department of Materials Chemistry, Yokohama National University, 79-5, Tokiwadai, Hodogaya-Ku, Yokohama 240-8501, Japan*Contacting Author; A.Chiba is with Department of Materials Chemistry, Yokohama National University, 79-5,Tokiwadai, Hodogaya-Ku, Yokohama 240-8501,Japan(hone:+81 45-339-3951; e-mail: a-chiba@ynu.ac.jp — FP411

Receptions of Nanostructures in the Surface Layer at the Simultaneous Action of Ions of Various Grades and Energies on Structural Material

Kostyuk G. I. National Aerospace University named after N. E. Zhukovsky (KhAI) National Aerospace University — FP412

Research on Mechanical-Electrical Coupling Characteristics of GaAs HEMT Build-in Cantilevers-Mass

Tingting Hou, Chenyang Xue, Guowen Liu, Zhenxin Tan, Binzhen Zhang, Jun Liu, and Wendong Zhang

National Key Laboratory For Electronic Measurement Technology,North University of China, Taiyuan, Shanxi 030051,China E-mail:xuechenyang@nuc.edu.cn — FP413

Self-Assembly of Iron Oxide Nanoparticles mediated by Phospholipids

Jung Hoon Kim[1], Young Keun Kim[2], *Senior Member, IEEE*, and Chong Seung Yoon[1]*, *Member, IEEE*

[1]Department of Materials Science and Engineering, Hanyang University, Seoul, Korea [2]Department of Materials Science and Engineering, Korea University, Seoul, Korea*Contacting Author: Chong Seung Yoon is with Department of Materials Science and Engineering, Hanyang University, Seoul, Korea. (phone: +82-2-2220-0384; fax:+82-2-2220-1838; email: csyoon@hanyang.ac.kr). — FP414

Sol-Gel Derived Nanoporous TiO_2 Films with the Addition of Polymer

Yang-Ting Chang, Shang-Ren Wang and Ching-Chich Leu*

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Solid-state fabrication of nanostructured AlSb by electron beam heating process

Chaned Wichasilp[1], Titipun Thongtem[2], Somchai Thongtem[1],* — FP416

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Solid-state Microwave Induced Plasma Synthesis of Antimony Telluride

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FP417

Stable Colloidal Dispersions of Silicon Nanoparticles for the Fabrication of Films using Inkjet Printing Technology

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FP418

Strain relaxation in nano-patterned strained-Si/SiGe heterostructure on Insulator

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FP419

Strain-Induced Wurtzite to h-BN Phase Transformation in Zinc Oxide Nanorods

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FP420

Study in the Porosity of the TiO_2 Films Prepared by Magnetron Sputtering Deposition

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Key Lab of Radiation Physics and Technology of Education Ministry of China, Institute of Nuclear Science and Technology, Sichuan University, Chengdu, Sichuan, China 610064 *Contacting Author: NingKang Huang, Tel.: +86-28-85412230; Fax: +86-28-85410252;

FP421

Study on Micro-Hardness of Ni-Co-SiC Nano-composite Coatings by High-Frequency Pulse

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FP422

Study on the Fabrication and Characterization of A Novel n-HA/Mulit-(Animo Acid) Compolymer Composite

Hong Li, Guoyu Lv, Jingtian Nan, Yonglei Liu, Xiaoman Luo, and Yonggang Yan*

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FP423

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Styrene-Butadiene Rubber/Halloysite Nanotubes Composites Modified by Epoxidized Natural Rubber

Zhixin Jia, Yuanfang Luo, Baochun Guo *, Shuyan Yang, Mingliang Du, Demin Jia
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Supercritical CO_2 assisted Poly(vinylidene fluoride) wrapping on carbon nanotubes

Linghao He[1,2], Qun Xu[1]*, Qiuyan Yang[1]
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Surface-Enhanced Raman Scattering from Different Silver Nanostructures

W.C. Zhang*, X.L. Wu*, C.X. Kan, F.M. Pan, H.T. Chen, J. Zhu, and Paul K. Chu
W.C. Zhang, C.X. Kan and F.M. Pan are with College of Science, Nanjing University of Aeronautics and Astronautics, Nanjing 210016,China; X.L. Wu, H.T. Chen, J. Zhu are with National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing 210093, China; Paul K. Chu is with Department of Physics & Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China
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Synthesis and characterization of Carbon Nanotube/Zinc Oxide composites

Prayut Potirak[1], Chokchai Kahattha[2,3] and Wisanu Pecharapa[2,3]
[1]Department of Applies Physics, King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand [2]College of KMITL Nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Chalongkrung Rd., Ladkrabang, Bangkok 10520, Thailand [3]ThEP Center, CHE, 328 SiAyutthaya Rd., Bangkok 10400, Thailand Email: kpewisan@kmitl.ac.th — FP427

Synthesis and Characterization of Highly Ordered TiO_2 Nanotube Arrays

Kao-Chen Sun[1], Mu-Tze Chen[1], Bo-Yun Shiu[1], Yung-Fang Lu[2], Jen-Chieh Chung[2], Yu-Chang Liu[2], Yu-Zhen Zeng[2], and Hong-Wen Wang*,[1]
[1]Department of Chemistry, Center for Nanotechnology, Chung-Yuan Christian University, Chungli 320, Taiwan, R.O.C. [2]Chemical Engineering Division, Institute of Nuclear Energy Research, No. 1000, Wenhua Road, Jiaan Village, Lungtan Township, Taoyuan County 32546, Taiwan, R.O.C.
*Contacting Author: hongwen@cycu.edu.tw — FP428

Synthesis and Characterization of Self-assemble ZnO Nano-film and Its Influence on Anti-light Discoloration Properties of Bamboo

Yiqiang Wu[1], Yan Qing[1], Ye Song[1], and Yan Yu*[2]
School of Materials Science and Engineering, Central South University of Forestry and Technology,Changsha,China. *2Contacting Author: Yan Yu is with the International Center for Bamboo and Rattan, Beijing, China. (phone: +86-731-85623302; qingyan0429@163.com) — FP429

Synthesis and electrical properties of the metal-silicide nanostructures — FP430

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Synthesis and High Lithium Electroactivity of Rutile TiO_2@C Nanorods

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FP431

Synthesis and structural characterization of nickel oxide nanoparticles synthesized by Polymerized complexed (PC) method

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FP432

Synthesis of ATO nanorods by molten-salt-assisted coprecipitation process

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FP433

Synthesis of BaO Nanowires and their Humidity Sensitive Property

Chenguo Hu[1],*, Hulin Zhang[1], Michao Zhang[1], Rusen Yang[2], Chunhua Zheng[1] and Xue Wang[1]
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FP434

The Synthesis of Carbon Nanotubes on Silicon Nanowires by Thermal Chemical Vapor Deposition

SHIH-FONG LEE[1], SHU-HUI LIAO[2], YUNG-PING CHANG[1], LI-YING LEE[1,2], SHI- KAI LI[1]
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FP435

Synthesis of Crystalline β-$FeSi_2$ under High-Temperature and High-Pressure

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FP436

Synthesis of functional carbon nanospheres and amperometric sensing of hydrogen peroxide

Xue Wang [a], Chenguo Hu [a],*, Yufeng Xiong [b], Xiaoshan He [a], Yi Xi [a], Chuanhui Xia [a]
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FP437

23-65104741; email: hucg@cqu.edu.cn)

Synthesis of Hierarchically Organized Nanostructured TiO_2 by Pulsed Laser Deposition and Its Application to Dye-sensitized Solar Cells

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FP438

Synthesis of Nanocrystalline $Li_{0.05}In_{0.05}Ni_{0.90}O$ Powder and Its Bulk Giant Dielectric Properties

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FP439

Synthesis of Ni/TiO_2 Nanocomposite by Loading TiO_2 Nanotubes with Ni Nanoparticles

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FP440

Synthesis of Oxidized Graphene Sheets with High Surface Area by Modified Thermal Exfoliation Method under Ultra-low Temperature

Haobin Zhang, Yong Yang, Jiwen Wang, Zhaohui Lu, Cao Chen, Wenge Zheng*, Qing Yan and Shuai Yin

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FP441

Synthesis of Si Nanowries and their Hysteresis Behavior

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FP442

The Analysis of X-Ray Diffraction by Al^{3+} Implanted Polytetrafluorethylene

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FP443

The Effect of X-ray Irradiation on the Novella Type Photoresist

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FP444

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The Effects of Bi-layer Catalysts and its Annealing on the Growth of GaN Nanowires

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FP445

The Fabrication of ZnO Nanowire Arrays in Porous Anodic Alumina Template by Coordination Reaction

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FP446

The Influence of Stacking Faulty Energy on High Energy Ball Milling Cu Alloys

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FP447

The Influence of the Micro-structure on Optical Properties of Nc-Si:H Films for Solar Cells

Xiao-Ni Gao, Jian-Ning Ding*, Ning-Yi Yuan, Guang-Gui Cheng, and Li-Qiang Guo
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FP448

The role of pH and calcination process on $CuFe_2O_4$ nanoparticles synthesized by microwave-hydrothermal reactions

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FP449

The Study of Mechanical Characteristic of Electrodeposited Nanocrystalline Ni-Co Alloy

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FP450

Zirconia Films Prepared by Micro-Arc Discharge Oxidation in Different Electrolytes

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FP451

ZnO Nanowires Prepared by Thermal Oxidation of Metallic Zinc Films

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FP452

A Novel Design of CNT-Based Embedded Inductors

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FP453

Electronic structure, Electron field emission and Magnetic behaviors of Carbon nanotube Fabricated on $La_{0.66}Sr_{0.33}MnO_3$ (LSMO) base layer

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FP454

Growth of Vertically Aligned ZnO Nanorod Arrays as Anti-reflection Layer in Silicon Solar Cell

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FP455

Nanostructured TiO_2 Films for Dye-Sensitized Solar Cells Prepared by Sol-Gel Method.

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FP456

Study on the Changes of Surface Property of Grown C-TiO_2 Films by O_2 Plasma Treatment

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FP457

A Novel Design of Stacked CNT Based Embedded Inductors

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FP458

Characterization of nanostructured dendritic silver bismuth sulfide produced by solvothermal reactions

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FP459

Growth and Properties III-V Films and Multilayered Structures on Fianite Substrates and Buffer Layers

FP460

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Effect of Annealing on the Properties of P-Type Nano $Zn_{0.92}Mn_{0.08}O$:N Films

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FP461

Fabrication and Photoelectrochemical Properties of Nanoporous WO_3 Film

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FP462

Direct growth of Nb_2O_5 Nanobelts on Nb Foil

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FP463

Preparation and properties of p-type semi-transparent conductive nickel oxide films

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FP464

Investigations on Growth and Hydrogen Gas Sensing Property of ZnO Nanowires Prepared by Hydrothermal Growth

Jung-Hyun Kim[1], Dong-Suk Kang[1], Soon-Ku Hong[1],*, Hyojin Kim[1], Dojin Kim[1], Jae Wook Lee[2], Jeong Yong Lee[2]

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FP465

Growth and Optical Properties of ZnO Nanorods Prepared through Hydrothermal Growth Followed by Chemical Vapor Deposition

Seok Kyu Han[1], Dong-Suk Kang[1], Soon-Ku Hong[1],*, Min-Jung Kim[2], Jae-Ho Song[2], Jung-Hoon Song[2], Hyojin Kim[1], Dojin Kim[1],Jae Wook Lee[3], Jeong Yong Lee[3]

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FP466

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Modification of Surface Wetting and Related Properties of Polyethylene by Enhanced Glow Discharge Plasma Immersion Ion Implantation

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FP467

Fabrication of Nanocrystalline CuO Powder and Giant Dielectric Properties of Its Ceramic

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FP468

Effect of Mn doping on magnetic properties of $BiFeO_3$ Nanopowders

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FP469

The Study Of Y_2O_3-doping-induced size diversification of ZrO_2 Nanocrystals

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FP470

Preparation and Characterization of A Novel Silica Fluorescent Nanoparticles with DPPDA-Eu^{3+} doped

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FP471

Controlled Growth and Magnetic Property of FePt Nanostructure: Cuboctahedron, Octapod and Nanocube

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FP472

Effects of Ti and Li doping on Synthesis of Nanocrystalline (Li, Ti)-doped NiO Powders

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FP473

Synthesis and Characterization of Ultrathin Single-Crystalline Cerium Oxide Nanorods FP474

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Nanoelectronics Oral Session I — LT-17

Chair: Gaowu QIN, Northeastern University

8:30 **Anisotropic Scattering of Elongated GaSb/GaAs Quantum Dots Embedded near Two-Dimentional Electron Gas** EC401

Guodong Li[1], Chao Jiang[1]*, Hiroyuki Sakaki[2]
[1]National Center for Nanoscience and Technology, No. 11, Beiyitiao Zhongguancun, Beijing, China [2]Toyota Technological Institute, 2-12-1 Hisakata, Tempaku-ku, Nagoya, Japan *Contacting Author: email: jiangch@nanoctr.cn

8:45 **Effect of Annealing on Magnetic Properties of $Ni_{80}Fe_{20}$ Permalloy Nanoparticles with Various Sizes Prepared by Polyol Method** EC402

G. W. Qin[1]*, W. L. Pei[1], Y. P. Ren[1], Y. Shimada[2], Y. Endo[2], M. Yamaguchi[2], S. Okamoto[3] and O. Kitakami[3]
[1]Key Laboratory for Anisotropy and Texture of Materials (MOE), NortheasternUniversity, Shenyang 110004, China [2]Department of Electrical and Communication Engineering, Tohoku University,Aramaki-aza, Aoba, Sendai 980-6569, Japan [3]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University,Katahira 2-1-1, Sendai 980-8755, Japan *Contacting Author: G.W. Qin is with Key Laboratory for Anisotropy and Texture of Materials (MOE), Northeastern University, Shenyang 110004, China (phone:+86- 24-83683772; fax: +86-24-83686455; email:qingw@smm.neu.edu.cn)

9:00 **Defect Engineering in Semiconductors for Nanoelectronic Devices** KS416

Edmund G Seebauer
Department of Chemical & Biomolecular Engineering, University of Illinois Urbana, IL, 61801, USA. Email: eseebaue@illinois.edu

9:30 **Ferromagnetic carbon-doped ZnO nanoneedles** EC403

S. P. Lau[1]*, T. S. Herng[2], C. Q. Wei[1] and M. Tanemura[3]
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9:45 **Bound Magnetic Polarons Induced Ferromagnetism in Transition-Metal-Doped Oxide Nanostructures** EC404

G. Z. Xing,[1] J. B. Yi,[2] D. D. Wang,[1] L. Liao,[3] T. Yu,[1] Z. X. Shen,[1] C. H. A. Huan,[1] T. C. Sum,[1] J. Ding,[2] and T. Wu[1],*
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10:00 Break

Chair: Zhisong XIAO, Beihang University

10:15 **High frequency characteristics of $Fe_{65}Co_{35}$ alloy cluster-assembled films prepared by energetic cluster deposition**

Dong-Liang Peng[1]*, Xuan Wang[1], Lai-Sen Wang[1], Yuanzhi Chen[1], Guang-Hui Yue[1], Kenji Sumiyama[2], and Takehiko Hihara[2]

[1]Department of Materials Science and Engineering, College of Materials, Xiamen University, Xiamen 361005, P. R. China; [2]Department of Materials Science and Engineering, Graduate School of Engineering, Nagoya Institute of Technology, Nagoya 466-8555, Japan *Contacting Author: Dong-Liang Peng is with Department of Materials Science and Engineering, College of Materials, Xiamen University, P. R. China. (phone: +86-592-2180155; fax:+86-592-2180155; email: dlpeng@xmu.edu.cn). EC405

10:30 **Magnetostrictive Properties of Amorphous TbFe/FeB Multilayer Thin Films by DC Magnetron Sputtering**

Wei Wang*, Yiming Mi, Shiqiang Qian and Xiying Zhou

School of Materials Engineering, Shanghai University of Engineering Science, 333 Longteng Road, Shanghai 201620,China. *Contacting Author: Wei Wang is with Shanghai University of Engineering Science, China. (phone: +8621 67791203; fax:+8121 67791233; email: wangwei200173@sina.com). EC406

10:45 **Reversible resistive switching behaviors in NiO nanowires**

Sung In Kim[1], Jae Hak Lee[1], Young Wook Chang[1], and Kyung-Hwa Yoo[1,2]*

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11:00 **Room Temperature Ferromagnetism of $Zn_{0.92}Co_{0.08}O$ Nanocrystalline Thin Film Annealed in Hydrogen Atmosphere**

Q. He,[1] Hao Wang,[1], * H. B. Wang,[1] X. N. Wang,[1] J. Zhang,[1] Y. Jiang[2]

[1]Faculty of Physics and Electronic Technology, Hubei University, Wuhan 430062, PR China [2]School of Materials Science and Engineering, and Technology Beijing, Beijing 100083, China *Contact Author: Hao Wang, Tel:+86 27 88662550; Fax:+86 27 88663390; Email: nanoguy@126.com (Hao Wang); hanbinwang77@yahoo.com.cn (H. B. Wang) EC408

11:15 **A Unified Drain Current Model for Nanoscale Double-Gate and Surrounding-Gate MOSFETs Incorporating Velocity Saturation**

Lining Zhang, Xingye Zhou, Yiwen Xu, Lin Chen, Wang Zhou, Yingxue Li, Frank He and Mansun Chan

[1]The Key Laboratory of Integrated Microsystems, Peking University Shenzhen Graduate School, Shenzhen, China [2]TSRC, School of Electronic Engineering and Computer Science, Peking University,Beijing, China [3]Department of Electrical and Electronic Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong *Contacting Author: Lining Zhang is with TSRC, School of Electronic Engineering and Computer Science, Peking University, Beijing 100871, China (phone: +86-10-62765916, fax: +86-10-62751789, email: EC409

liningzhang@pku.edu.cn)

11:30 **Microstructural Evaluation of Sn-3.8Ag-0.7Cu Solder Reinforced with Co Nanoparticles during High Temperature Storage**

S.L. Tay, A.S.M.A. Haseeb and Mohd. Rafie Johan

Department of Mechanical Engineering, University of Malaya 50603 Kuala Lumpur, Malaysia E-mail:clengtay@yahoo.com *Contacting Author: S.L.Tay (phone: +603-79675281; email:clengtay@perdana.um.edu.my

EC410

11:45 **Silicon Nanocrystals Floating Gate Non-Volatile Semiconductor Memory**

Shibing Long, Qin Wang, Yong Wang, Xiaonan Yang, Jiang Liu, Manhong Zhang, Bo Zhang, Weiran Kong, and Ming Liu*

Laboratory of Nano-fabrication and Novel Devices Integrated Technology, Institute of Microelectronics, Chinese Academy of Sciences, No.3, BeiTuCheng West Road, ChaoYang District, Beijing, 100029, China; Grace Semiconductor Manufacturing Corporation, No. 1399, Zu Chong Zhi Road, Zhangjiang Hi-Tech Park, Shanghai, 201203, China. * Contacting Author: Ming Liu (E-mail: liuming@ime.ac.cn, Tel: +86-10-62007699, Fax: +86-10-82995583)

EC411

12:00 **Synthesis, Morphology Evolution and Magnetic Properties of Magnetite Nanoparticles**

Xi'an Fan[1,2], Jianguo Guan*[1], Fangzhi Mou[1], Wei Wang[1]

[1]State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, 122 Luoshi Road, Wuhan 430070,People's Republic of China [2] Key Laboratory of Ferrous Metallurgy and Resources Utilization of Ministry of Education, Wuhan University of Science and Technology, 947 Heping Avenue, Wuhan 430081, People's Republic of China *Contacting Author: Tel: 86-27-87218832, Fax: 86-27-87879468, E-mail: guanjg@whut.edu.cn

EC412

12:15 **Controlling Conductive Filament Growth by Metal Nanocrystal to Improve the Resistive Switching Properties of ReRAM**

Qi Liu[1,2], Shibing Long[1], Wei Wang[3], S. Tanachutiwat[3], Junning Chen[2], and Ming Liu[1]

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EC413

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Xiaolin WANG, University of Wollongong

16:15 **A Compact Model for Multi-Island Single Electron Transistors**

Yaqing Chi*, Haiqin Zhong, Chao Zhang, and Liang Fang

National Key Laboratory for Parallel and Distributed Processing, School ofComputer, National University of Defense Technology, Hunan, 410073, China *Contacting Author: Yaqing Chi is with National Key Laboratory for Parallel and Distributed Processing, School of Computer, National University of Defense Technology, Hunan, 410073, China. (phone: +8613875956416, fax:+8673184573293 E-mail: yachi@nudt.edu.cn).

EC414

16:30 **A Compact Model incorporating Quantum Effects for Ultra-Thin-Body Double-Gate MOSFETs**

AdityaSankar Medury*, Kausik Majumdar, Navakanta Bhat, and K.N.Bhat
Department of Electrical and Communication Engineering, Microelectronics Lab, Indian Institute of Science, Bangalore, 560012, India *Contacting Author: AdityaSankar Medury(Affiliation as shown above) aditya.medury@ece.iisc.ernet.in

EC415

16:45 **Impact of Random Dopant Fluctuation Effect on Surrounding Gate MOSFETs: from Atomic Level Simulation to Circuit Performance Evaluation**

Hao Wang[1,2], Chenyue Ma[2], Chenfei Zhang[2], Frank He[1,2], Member, IEEE, Xing Zhang[2], Xinnan Lin[1]
[1] Key Laboratory of Integrated Microsystems, Peking University Shenzhen Graduate School, Shenzhen, China [2] TSRC, School of Electronic Engineering and Computer Science, Peking University, Beijing, China *Contacting Author: Frank He is with School of Electronic Engineering and Computer Science, Peking University, Beijing 100871, China (phone: +86-10-62767915, fax: +86-10-62751789, email: hejin@szpku.edu.cn)

EC416

17:00 **In place growth of vertical Si nanowires for surround gated MOSFETs with self aligned contact formation**

A. Lugstein*, M. Steinmair, C. Henkel and E. Bertagnolli
Institute for Solid State Electronics, Vienna University of Technology Floragasse 7, A-1040 Vienna, Austria Contacting Author: alois.lugstein@tuwien.ac.at

EC417

17:15 **Synthesis and Characterization of Templated Si-based Nanowires via Vapor-liquid-solid (VLS) Growth for Electrical Transport**

Jae Ho Lee, Isaac N. Lund, Eric T. Eisenbraun, Yongqiang Xue, and Robert E. Geer*
College of Nanoscale Science and Engineering, University at Albany–SUNY, 257 Fuller Road, Albany, NY 12205, USA Contacting Author: RGeer@uamail.albany.edu

EC418

17:30 **Synthesis of Size- and Site-Controlled SiGe Nanorods on Epitaxial $Si_{0.8}Ge_{0.2}$ Virtual Substrates**

Shao-Liang Cheng[1],*, Cheng-Hsuan Chung[1], and Sheng-Wei Lee[2]
[1]Department of Chemical and Materials Engineering, National Central University, Chung-Li City, Taoyuan, Taiwan, R.O.C. [2]Institute of Materials Science and Engineering, National Central University, Chung-Li City, Taoyuan, Taiwan, R.O.C. *Contacting Author: Shao-Liang Cheng (phone: +886-3-4227151 ext.34233; email: slcheng@ncu.edu.tw).

EC419

17:45 **Variable Range Hopping Conduction in n-Si NWs with Focus-Ion-Beam-induced Amorphization**

Jr-Jian Ke and Jr-Hau He*
School of National Taiwan University, Institute of Photonics and Optoelectronics & Department of Electrical engineering, Taipei, Taiwan, Republic of China. *Contacting Author: Jr-Hau He is with the School of National Taiwan University, Institute of Photonics and Optoelectronics & Department of Electrical engineering, Taipei, Taiwan, Republic of China. (phone: +886-2-33669646; email: jhhe@cc.ee.ntu.edu.tw).

EC420

18:00 **General Route of Nanowire Field Effect Transistor**

Tae Il Lee[a], Won Jin Choi[b], Kyung-Ju Moon[a], Joohee Jeon[a], Hong Koo Baik[b] and Jae-Min Myoung[a]*
[a] Contacting Author: Jae-Min Myoung is with the Information and Electronic Materials Research Laboratory, Department of Materials Science and Engineering, Yonsei University, Korea. (phone:

EC421

+82 2 2123 2843; fax: +82 2 365 2680; email: jmmyoung@yonsei.ac.kr). [b] Information and Display Materials Research Laboratory, Department of Materials Science and Engineering, Yonsei University, Korea. (phone: +82 2 2123 2838; fax: +82 2 312 5375; email: thinfilm@yonsei.ac.kr).

18:15 **One voltage transparent thin-film transistors with ITO nanocrystal channel processed at room temperature**

Qing Wan* , Aixia Lu, Jia Sun
Key Laboratory for Micro-Nano Optoelectronic Devices of Ministry of Education, Hunan University, Changsha, 410082, People's Republic of China. *Contacting Author: Tel: +86-731-88823407, Fax: +86-731-88822137 E-mail: a) wanqing7686@hotmail.com

EC422

Nanoelectronics Oral Session II

LT-13

Chair: Hao WANG, Hubei University

8:30 **Magnetic Tunnel Junction Magnetic Field Sensor Design Tool**

Ronald C. L. Li[1], J. Unguris[2], Alan S. Edelstein[3], J. E. Burnette[3], G. A. Fischer[3], Edmund R. Nowak[4], William F. Egelhoff, Jr.[5], and Philip W. T. Pong[1]
[1]Department of Electrical and Electronic Engineering, University of Hong Kong, Pokfulam Road, Hong Kong [2] Center for Nanoscale Science and Technology, National Institute of Standards and Technology (NIST), Gaithersburg, Maryland MD 20899, USA [3] Army Research Laboratory, Adelphi, Maryland MD 20783, USA [4] Department of Physics and Astronomy, University of Delaware, Newark, Delaware 19716, USA [5] Metallurgy Division, National Institute of Standards and Technology (NIST), Gaithersburg, Maryland MD 20899, USA

EC423

8:45 **Growth and Characterization of Ni_3FeN Thin Films by Reactive Gas Timing RF Magnetron Sputtering**

Wicharn Techitdheera[1]*, Chewa Thassana[1], Wisanu Pecharapa[2] and Jiti Nukaew[2]
[1] Department of Applied Physics, Faculty of Science, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand. [2] College of KMITL Nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand. *Contacting Author: Wicharn Techitdheera is with the Department of Physics, Faculty of Science, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand,10520. (e-mail: wdheera@gmail.com)

EC424

9:00 **The Effect of Quantum Dot Shape and Position on Electron Confinement in Dot-in-a-Well Structures**

N. Batenipour[1], K. Saghafi[2], M. K. Moravvej-Farshi[3]
[1] Department of Electrical Engineering, Sciences & Research Branch, Islamic Azad University, Tehran, Iran [2] Department of Electrical Engineering, Shahed University, Tehran, Iran [3] Department of Electrical and Computer Engineering, Tarbiat Modares University, Tehran, Iran.

EC425

9:15 **Vertical Epitaxial Co_5Ge_7 Nanowires and Nanobelts Arrays on a Thin Graphitic Layer for Flexible FED**

Hana Yoon, Kwanyong Seo, Nitin Bagkar, Juneho In, Jeunghee Park, Jaemyung Kim, and Bongsoo Kim*
[1]Department of Chemistry, KAIST, Daejeon, Korea [2] Department of Chemistry, Korea University, Chungnam, Korea [3] Corporate R&D Center, Samsung SDI, Gyeonggi-do, Korea *Contacting Author: Bongsoo Kim is with the Department of Chemistry, KAIST, Daejeon, Korea (phone: +82-42-350-2836; fax: +82-42-350-2810; email: bongsoo@kaist.ac.kr).

EC426

9:30 **Multiple $NaNbO_3/Nb_2O_5$ Nanotubes: A New Class of Ferroelectric/Semiconductor Heterostructures**

Chenglin Yan, *Liliya Nikolova, Afshin Dadvand, Catalin Harnagea, Dmitrii F. Perepichka, Dongfeng Xue, and Federico Rosei *Contacting Author: INRS–EMT, Université du Québec 1650 Boul. Lionel Boulet, J3X 1S2 Varennes (QC) Canada (e-mail: chenglin@emt.inrs.ca) EC427

9:45 **Self-assembly of Low Dimensional Organic Nanomaterials Based on $Ni(TCNQ)_2(H_2O)_2$**

Zhuoyu Ji, Ming Liu,*Liwei Shang, Xinghua Liu, Hong Wang, Yingping Chen, and Maixing Han

Key Laboratory of Nano-Fabrication and Novel Devices Integrated Technology, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, 100029, China. *Contacting Author: Key Laboratory of Nano-Fabrication and Novel Devices Integrated Technology, Institute of Microelectronics, Chinese Academy of Sciences, Beijing, 100029, China.. Fax: +86-010-82995583; Tel: +86-010-82995579; E-mail: liuming@ime.ac.cn EC428

10:00 Break

Chair: Dong-Liang PENG, Xiamen University

10:15 **Synthesis and One-Dimensional Self-Assembly of Aligned Ni Nanochains under Magnetic Fields**

Rongming Wang*, Pengwei Li

Key Laboratory of Micro-nano Measurement, Manipulation and Physics (Ministry of Education) and Department of Physics, Beijing University of Aeronautics and Astronautics, Beijing 100191, P. R. China. EC429

10:30 **TEM Study and Magnetic Measurements of Precipitates Formed in Cu–Fe–Ni Alloy**

Sung Kang[a]*, Mahoto Takeda[a], Masaki Takeguchi[b], and Dong–Sik Bae[c]

[a]*Department of Materials Science and Engineering (SEISAN), Yokohama national university, Yokohama, 240-8501, Japan [b] Advanced Electron Microscopy Group, National Institute for Materials Science (NIMS), Tsukuba, 305–0047, Japan [c] School of nano & Advanced Materials Engineering, Changwon National University, Gyeongnam, 641 – 773, Korea. EC430

10:45 **Synthesis and Characterization of Gd-doped InGaN Thin Films and Superlattice Structure**

Siti Nooraya Mohd Tawil, Daivasigamani Krishnamurthy, Rina Kakimi, Manabu Ishimaru,Shuichi Emura, Shigehiko Hasegawa and Hajime Asahi*

Institute of Scientific and Industrial Research, Osaka University, Osaka, Japan. *Contacting Author: Hajime Asahi is with the Institute of Scientific and Industrial Research, Osaka University, 8-1 Mihagaoka, Ibaraki, Osaka 567-0047, Japan (phone: +81-6-6879-8405; fax: +81-6-6879-8409; e-mail: asahi@sanken.osaka-u.ac.jp) EC431

11:00 **Controlled Synthesis of Conducting Polymer Nanostructures**

Yong Yan, Mei Li, Jiyong Huang, and Zhixiang Wei*

National Center for Nanoscience and Technology, Beijing 100190, China. *Contacting Author: (phone: 86-10-82545565; fax: 86-10-62656765; E-mail: weizx@nanoctr.cn) EC432

11:15 **Organic Thin Films for High Density Information Storage**

Yanlin Song

Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

E-mail: ylsong@iccas.ac.cn EC433

11:30 **Effects of Laser Drilling through Silicon Substrate on MOSFET Device Characteristics** EC434

Youngkyu Song[1], Chulhyun Park[1], Junghan Kang[1], Ik-Bu Sohn[2], Young-Chul Noh[2], Jongmin Lee[2], Eung Jang Lee[3],Seung-Han Park[3], Soogil Lee[4], Jongill Hong[4] and Ilgu Yun[1,]*
[1] School of Electrical and Electronic Engineering, Yonsei University, Korea [2] Advanced Photonics Research Institute, GIST, Oryong-dong 1, Buk-gu,Gwangju 500-712, Republic of Korea [3] Physics, Pioneer Research Center for Neurodevice, Yonsei University [4] Materials Science and Engineering, Pioneer Research Center for Neurodevice,Yonsei Universiy *Contacting Author: (phone: +82-2-2123-4619; fax: +82-2-313-2879; email: iyun@yonsei.ac.kr)

11:45 **Vertical Growth of Mn:Ge Nanowires and Their Magnetic Properties**

Ungkil Kim,[1] Tae-Eon Park,[1] Il-Soo Kim,[1] Han-Kyu Seong,[1] Myuong-Ha Kim,[1] YongHee Park,[1] Joonyeon Chang,[2] Jae-Gwan Park,[2] and Heon-Jin Choi[1]*
[1]Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Korea [2]Department of Physics, Jeonju 561-756, Chonbuk National University, Korea 3Pohang Accelerator Laboratory, Pohang University of Science and Technology, Pohang 790-784, Korea *Contacting Author: Heon-Jin Choi is with the Department of Materials Science and Engineering, Yonsei University, Seoul, Korea (phone : +82-2-2123-5849; email : hjc@yonsei.ac.kr

EC435

12:00 **Tuning Exchange Bias Effects by Ion-beam Bombardment in NiFe/NiO bilayers**

Ko-Wei Lin[1], H.-R. Huang[1], H.-F. Hsu[1], Y.-C. Yang[1], J.-Y. Guo[1], T. Suzuki[2], and J. van Lierop[3]
[1] Department of Materials Science and Engineering, National Chung Hsing University, Taichung 402, Taiwan [2] ISML, Toyota Technological Institute, Nagoya 468-8511, Japan [3] Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, R3T 2N2, Canada
*Corresponding Author: Ko-Wei Lin (kwlin@dragon.nchu.edu.tw) TEL/FAX: 886-4-22851068

EC436

12:30 Lunch

14:00 Poster Session

Nanoelectronics Oral Session III

LT-15

Chair: Jianbin XU, The Chinese University of Hong Kong

8:30 **Al Doped ZnO Nanogranular Film Fabricated by LBL Method and Its Application for Gas Sensors**

Weichang Hao[1*], Meng Sun[1], Huaizhe Xu[2], Tianmin Wang[1]
[1]Center of Materials Physics and Chemistry, Beihang University, Beijing 100191, P R China[2]Department of Physics, Beihang University, Beijing 100191, P R China [*]Corresponding author: E-mail, Whao@buaa.edu.cn

EC438

8:45 **Effect of Doping Concentration on the Thermolectric Properties of Nano Ga-doped ZnO Films**

L.Fang[*],K.Zhou, F.Wu, Q.L.Huang, X.F.Yang , and C.Y. Kong
Department of Applied Physics, Chongqing University, Chongqing,China [*]Corresponding author:L.Fang is with Department of Applied Physics, Chongqing University, Chongqing 400044,PR China (phone.:+86 023-65105870, E-mail: fangliangcqu@yahoo.com.cn

EC439

9:00 **Electrical and Optoelectronic Characterization of a ZnO Nanowire Contacted by Focused-Ion-Beam-Deposited Pt**

C. Y. Chen, P. H. Chang, K. T. Tsai, and J. H. He[*]

EC440

Institute of Photonics and Optoelectronics, and Department of Electrical Engineering, National *Contacting Author: J. H. He, E-mail: jhhe@cc.ntu.edu.tw TaiwanUniversity, Taipei, 106 Taiwan (ROC)

9:15 **Controllable Synthesis of PbTe Nanosheets via an Alkaline Hydrothermal Method**
Xi Chen, Tie-Jun Zhu*, and Xin-Bing Zhao
State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China. *Contacting Author: Tie-Jun Zhu is with State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China (phone:+81-571-87952181; fax:+81-571-87951451; email: zhutj@zju.edu.cn) EC441

9:30 **Photoconductive Enhancement of Au Nanoparticles-Decorated Single ZnO Nanowire Photodetector Through Formation of Local Schottky Junction**
Ming-Wei Chen, Cheng-Ying Chen, and Jr-Hau He*
Small Lab of Institute of Photonics and Optoelectronics, & Department of Electrical Engineering, National Taiwan University, Taipei, 106, Taiwan, ROC *Contacting Author: Jr-Hau He is with Institute of Photonics and Optoelectronics, & Department of Electrical Engineering, National Taiwan University, Taipei, 106. (phone: +886-2-33669646; email: jhhe@cc.ee.ntu.edu.tw). EC442

10:00 Break

Chair: Jianbin XU, The Chinese University of Hong Kong

10:15 **Enhanced Performance of ZnO Nanocomposite Transistor by External Mechanical Force**
Ji-Hyuk Choi, Kyung-Ju Moon, Joohee Jeon, Jyoti Prakash Kar, Dahl-Young Khang, Tae Il Lee and Jae-Min Myoung*
Information and Electronic Materials Research Laboratory, Department of Materials Science and Engineering, Yonsei University, Korea. (phone: +82 2 2123 2843; fax: +82 2 365 2680; email: jmmyoung@yonsei.ac.kr). * Contacting Author: Jae-Min Myoung is with the Information and Electronic Materials Research Laboratory, Department of Materials Science and Engineering, Yonsei University, Korea. (phone: +82 2 2123 2843; fax: +82 2 365 2680; email: jmmyoung@yonsei.ac.kr). EC444

10:30 **Flash Memory Thin-film Transistor with Organic-inorganic Nano-hybrid Dielectric**
Sung Hoon Cha, *Seongil Im, Byung H. Lee and Myung M. Sung
Institute of Physics and Applied Physics,Yonsei University, Seoul 120-749, Korea Department of Chemistry, Hanyang University, Seoul 133-791, Korea. *Contacting Author: Seongil Im is with the Institute of Physics and Applied Physics, Yonsei University, Korea (phone: +82-2-2123-4928; fax: +82-2-392-1592; email: semicon@yonsei.ac.kr) EC445

10:45 **Nonvolatile memory properties in ZnO-based thin-film transistors with polymer ferroelectric and thin buffer layer**
C. H. Park, K. H. Lee B.H. Lee and Myung M. Sung and Seongil Im*
C. H. Park, K. H. Lee and S. Im are with the Institute of Physics and Applied Physics, Yonsei University, Seoul 120-749, Korea B. H. Lee and M. M. Sung are with the Department of Chemistry, Hanyang University, Seoul 133-791, Korea.*Contacting Author: Seongil Im is with the Institute of Physics and Applied Physics, Yonsei University, Korea (phone: +82-2-2123-4928; fax: +82-2-392-1592; email: semicon@yonsei.ac.kr) EC446

11:00 **Optical and Electrical Properties of Ga-doped ZnO Nanorod Arrays Fabricated by** EC447

Catalyst-free Thermal Evaporation

P.Y. Yang,1 Hao Wang,1, * X. N. Wang,[1] J. Zhang,[1] Y. Jiang[2]

[1]Faculty of Physics and Electronic Technology, Hubei University, Wuhan 430062, PR China; [2]School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China *Contacting Author: Hao Wang, Tel:86 27 88662550; Fax:86 27 88663390; Email: nanoguy@126.com (Hao Wang); xnwang2006@hotmail.com(X.N. Wang)

11:15 **Synthesis of Water Soluble Chitosan/CdS Composite Nanoparticles in Aqueous Solution by a Simple Method**

Suli Wu*, Lian Li, Jun Dou, Shufen Zhang

State Key Laboratory of Fine Chemicals, Dalian University of Technology *Contacting Author: Suli Wu (wusuli@dlut.edu.cn)

EC448

11:30 **Functional Inorganic Nanostructures, New Opportunities for Future Electronics**

Xiangfeng Duan

Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles CA 9095.

KS404

12:00 **The Effects of High Work Function Electrodes on the Electrical Properties of Solution Processed ZnO Thin Film Transistor**

Tao Chen, Shu-Yi Liu, Shao-Ren Deng, Bing-Zong Li and Xin-Ping Qu*, Senior

State Key Lab of ASIC and System, Department of Microelectronics, Fudan University, Shanghai 200433, China. *Contacting Author: Xin-Ping Qu is with the State Key Lab of ASIC and System, Department of Microelectronics, Fudan University, Shanghai 200433, China (e-mail:xpqu@fudan.edu.cn).

EC449

12:15 **Single-Crystalline ZnS Nanobelts with Sharp Ultraviolet (UV) Emission at Room Temperature as UV-Light Sensors**

Xiaosheng Fang,* Yoshio Bando, Meiyong Liao, Ujjal K. Gautam, Tianyou Zhai, and Dmitri Golberg

International Center for Young Scientists (ICYS), International Center for Materials Nanoarchitectonics (MANA), Sensor Materials Center, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan *Contacting Author: Xiaosheng Fang, International Center for Young Scientists (ICYS), International Center for Materials Nanoarchitectonics (MANA), Sensor Materials Center, National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba, Ibaraki 305-0044, Japan (phone: 81-29-851-3354 ext 8632; fax: 81-29- 851-6280; email: Fang.Xiaosheng@nims.go.jp).

EC450

12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Hao WANG, Hubei University

16:15 **Electrical and Photoelectrical Properties of p-SWNT/n-ZnO Heterojunction Structure**

Min Ji Park[1], Young Wook Chang[1], Bong Keun Kang[1], Min-Soo Son[1], Jae Sang Lee[3], Sang Yeol Lee[3] and Kyung-Hwa Yoo1[2*]

[1]Department of Physics, Yonsei University, Seoul 120-749, Republic of Korea [2]National Core Research Center for Nanomedical Technology, Yonsei University, Seoul 120-749, Republic of

EC451

Korea [3]Center for Energy Materials Research, Korea Institute of Science and Technology, Seoul 136-791, Republic of Korea [*]Contacting Author: khyoo@yonsei.ac.kr

16:30 **Electrical characterization of single nanowire based ZnO Schottky diodes**

S. N. Das[1], J. P. Kar, J. H. Choi, K. J. Moon, T. I. Lee and J. M. Myoung[*]
Information and Electronic Materials Research Laboratory, Department of Material Science and Engineering, Yonsei University, Seoul 120-749, Republic of Korea.[*]Contacting Author: jmmyoung@yonsei.ac.kr EC452

16:45 **Electron Transport Properties of ZnO, InP, GaP, and $Pb_{1-x}Mn_xSe$ Nanowires By Two-Probe Measurements**

Yen-Fu Lin[1], Jiye-Fang[2], and Wen-Bin Jian[1*], Member, IEEE
[1]Department of Electrophysics, National Chiao Tung University, Hsinchu 30010, Taiwan
[2]Department of Chemistry, State University of New York at Binghamton,Binghamton, NY 13902-6000 [*]Contacting Author: Wen-Bin Jian is with the Department of Electrophysics, National Chiao Tung University, 1001 Ta Hsueh Road, Hsinchu 30010, Taiwan (email: wbjian@mail.nctu.edu.tw) EC453

17:00 **Structural Characterization and Field Emission of Stacked-cone GaN Nanorods**

Chun Li[*], Yang Huang, Yoshio Bando, and Dmitri Golberg
World Premier International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science, Japan；National Institute for Materials Science, Namiki 1-1, Tsukuba, Ibaraki 305-004, Japan [*]Contacting Author: National Institute for Materials Science,Namiki 1-1, Tsukuba, Ibaraki 305-004, Japan (Phone: (+81)-29-851-3354 ext8028, fax: (+81)-29-851-6280, e-mail: LI.Chun@nims.go.jp) EC454

17:15 **Thermoelectric properties of individual single-crystalline PbTe nanowires**

Seung Hyun Lee[1], So Young Jang[2], Jong Wook Roh[1], Jeunghee Park[2], and Wooyoung Lee[1,*]
[1] Nanomedical National Core Research Center (NCRC) and Department of Materials Science and Engineering, Yonsei University, 134 Shinchon, Seoul 120-749, Korea [2] Department of Chemistry, Korea University, Jochiwon, Chungnam 339-700, Korea [*] E-mail: wooyoung@yonsei.ac.kr (Wooyoung Lee). Telephone: +82-2-2123-2834 EC455

17:30 **Epitaxial growth and characterisation of nonpolar m-plane GaN on $LaAlO_3$ substrate**

Guoqiang Li[1,2,*], and Shao-Ju Shih[1]
[1] Department of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, United Kingdom[2] State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, China [*]Email: guoqiang.li@materials.ox.ac.uk EC456

17:45 **InN Nanowire Transistors: Growth & Electronics & Photonics**

Guosheng Cheng[1*], Haibin Liu[1], Xiumei Geng [1], Jia Chen[2]
[1]Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences,Suzhou Industrial Park, Suzhou, Jiangsu 215125, China[2]IBM T. J. Watson Research Center, Yorktown Heights, NY 10598, USA [*]Corresponding author, E-mail: gscheng2006@sinano.ac.cn EC457

Nanoelectronics Poster Session II

ATRIUM

14:00

Low Temperature Aqueous Solution Growth and Field-emission Gas Ionization Sensing Properties of ZnO nanowires EP401

Chien-Sheng Huang[*], Chen-Huan Yuan and Zong-Xian Zheng

Graduate school of Optoelectronics, National Yunlin University of Science and Technology, Douliou 64002, Taiwan *Contacting Author: Dr. Chien-Sheng Huang is with Graduate school of Optoelectronics, National Yunlin University of Science and Technology, Douliou 64002, Taiwan. (Phone: +886-5-5342601 ext.4392, Fax: +886-5-5312063, E-Mail: huangchs@yuntech.edu.tw)

Magnetic Properties and Microstructure of Fe/FePt Films with Perpendicular Magnetization

Jai-Lin Tsai*, Hsin-Te Tzeng, Bing-Fong Liu
Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan * E-mail: tsaijl@dragon.nchu.edu.tw

EP402

Magnetic Properties and Microstructure of FePt/Ag_2Te Nanoparticles

Jai-Lin Tsai*, Hsin-Te Tzeng, Guo-Bin Lin
Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan * E-mail:tsaijl@dragon.nchu.edu.tw

EP403

Memory Characteristics of Multilayer Structures with Lanthanum-Aluminate Charge Trap by Fowler-Nordheim Tunneling

Seung-Yong Cha, Hyo-June Kim and Doo-Jin Choi*
Department of Materials Science and Engineering, Yonsei University, 134 Sinchon-dong, Seodaemun-gu, Seoul, Republic of Korea. *Contacting Author: Doo-Jin Choi is with the Department of Materials Science and Engineering, Yonsei University, Seoul, Republic of Korea (Phone: +82-2-2123-2852; email: drchoidj@yonsei.ac.kr)

EP404

Metal Nanocrystal Memory with Sol-Gel Derived HfO_2 High-k Tunneling Oxide

Shih-Tang Chen[1], Kun-Cheng Huang[1], Hua-Chiang Chen[1], Fu-Ken Liu[2], and Ching-Chich Leu[1,*]
[1]Department of Chemical and Materials Engineering, National University of Kaohsiung, Kaohsiung,Taiwan, R.O.C. [2]Department of Applied Chemistry, National University of Kaohsiung, Kaohsiung,Taiwan, R.O.C. *Contacting Author: Ching-Chich Leu is with the Department of Chemical and Materials Engineering, National University of Kaohsiung, Kaohsiung,Taiwan, R.O.C. (phone: +886-7-5919456; email:ccleu@nuk.edu.tw)

EP405

Microstructure and Phase Transformation of Zinc Titanate Thin Films

Ying-Chieh Lee[1‡], Yen-Lin Huang[1†], Wen-His Lee[2], Bao-Hsing Chen[1], and Fuh-Sheng Shieu[3]
[1]Department of Materials Engineering, National PingTung University of Technology & Science, Ping-Tung 91201, Taiwan; [2]Department of Electrical Engineering, National Cheng Kung University, Tainan 701, Taiwan; [3]Department of Materials Engineering, National Chung Hsing University, Taichung 402, Taiwan. †Presenter: Yen-Lin Huang ‡Contacting Author: Ying-Chieh Lee is with the Department of Materials Engineering, National PingTung University of Technology & Science, Ping-Tung Taiwan (E-mail:YCLee@mail.npust.edu.tw)

EP406

Microstructure and Thermal Properties of Phase Change $(GeSbSn)_{100-x}Co_x$ Optical Recording Films

Sin-Liang Ou[1,*], Po-Cheng Kuo[1], Shih-Hsien Ma[1], Chih-Long Shen[1], Wei-Tai Tang[2], Don-Yau Chiang[3], and Chao-Te Lee[3]
[1]Institute of Material Science and Engineering, National Taiwan University,Taipei 106, Taiwan [2]Department of Chemistry, National Tsing Hua University, Hsinchu 300,Taiwan [3]Instrument Technology Research Center,National Applied Research Laboratories, Hsinchu 300, Taiwan *Contacting Author: Sin-Liang Ou is with the Institute of Material Science and Engineering, National Taiwan University; No. 1, Sec. 4, Roosevelt Road, Taipei, 10617 Taiwan (phone: +886-2-23648881; fax: +886-2-23634562; email: d94527017@ntu.edu.tw)

EP407

Microstructures and Magnetic Properties of Single-layered FePt Films by in situ Annealing

EP408

S. C. Chen[1,*], T. H. Sun[1], C. L. Chang[1], W. H. Hong[1], and P. C. Kuo[2]
[1]Department of Materials Engineering, Ming Chi University of Technology, Taipei 243, Taiwan
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Microwave Assisted Carbothermal Reduction Synthesis of Nanosized $LiFePO_4$/C

Meipin Ma, Xiaolin Jia[*] and Wei Liu
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EP409

MIM Capacitors with $ZrTiO_4$ as Insulator Featuring High Capacitance Density and Low Leakage Current

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EP410

Mixed Spacer Effect of Hybrid White Organic Light-Emitting Diodes for Reduced Efficiency Roll-off

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EP411

Nanocrystalline TiO_2 Thin Films Prepared by Electron Beam Evaporation for Photodetector Applications

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EP412

New Microwave Dielectric Material for Application in Mobile Communication

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EP413

Nitrogen Annealed TiO_2 Nanotube Array Electrodes for Heavy Metal Ions Detection

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EP414

Novel Annealing Post Treatment with Different Gas Atmosphere to Aluminum Doped Zinc-Oxide Thin

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Novel Magnetic Generation of Ultrathin Co/ZnO (002) Surface by Post Low-Energy N^+ Sputtering

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EP416

Novel Sol-gel Derived SONOS-type Nanocrystal Memory

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EP417

Optical Properties of Zn_2TiO_4 Prepared by Thermal Oxidation Method

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EP418

Optimization of Electro-Luminescence Performance of Silicon Quantum Dots Based Light-Emitting-Diode

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EP419

Ordered FePt Nanoparticle Arrays Prepared by a Micellar Method

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EP420

Pd Nanoparticles Modified ITO Electrode and its Electrocatalytic Oxidation for Ethanol and Methanol in Alkaline Solution

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EP421

Physical, Electrical Properties and Reproducible Resistance switching of ZrO_2-TiO_2 Dielectric Films

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EP422

Polymer Photovoltaic Cells Based on Manganese Phthalocyanine Derivative

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EP423

Polymer-assisted Deposition of Co-doped Zinc Oxide Thin Film for the Detection of Aromatic Organic Compounds

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EP424

Preparation and Application of Sub-micron Lead Zirconium Titanate Surface Acoustic Wave Biosensors

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EP425

Preparation of SnO_2 nanoparticles by Hard Template Method for High Selectivity Gas Sensor

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EP426

Radial Microstructure and Optical Properties of Porous Silicon Layer

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Reduced Distribution of Threshold Voltage Shift in Double Layer NiSi2 Nanocrystals for Nano-Floating Gate Memory Applications

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Reversible ferromagnetism study in un-doped ZnO thin film

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Review on the Research Progress of the Tunneling Process through Self-assembled Monolayers

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Sensitization of Luminol Electrochemiluminescence by Metallic Oxide Nano-particles

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Si-based Resonant Tunneling Diodes for room temperature operation

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Structural Effect of $LaAlO_3/SrTiO_3$ Interface on Electronic Properties: Ab-initio Calculations

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Structural Properties of Ultra-Thin Y_2O_3 Gate Dielectrics Studied by X-Ray Diffraction (XRD) and X-Ray Photoelectron Spectroscopy (XPS)

Chuan-Hsi Liu[1,*], Pi-Chun Juan[2], Chin-Pao Cheng[1], Guan-Ting Lai[1], Huan Lee[1], Yi-Kuan Chen2, Yu-Wei Liu[2], Chih-Wei Hsu[2]

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Structures and Magnetic Behaviors of TiO_2-Mn-TiO_2 Multi-films

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Study of Carbon Nanotube Field Effect Transistor Performance based on Changes in Gate Parameters

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Surface Modifications of Organic Buffer Layer /Inorganic Dielectric in Zinc Oxide Transistors

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Synthesis and NO_2-sensing Properties of One-dimensional Tungsten Oxide Nanowire Bundles

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Synthesis and Self-assembly of Ultrathin β-Nickel Hydroxide Nanodisks via a Wet-chemistry Method

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Synthetic Characterization and Surface Modification of FePt Monodispersive Nanoparticles

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Technology CAD Simulation Study for Self-Heating Effects in Si/SiGe HBTs on Thin-Film SOI Substrates

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The Influences of Annealing Process on the Characteristics of 0.95 $(Na_{0.5}Bi_{0.5})TiO_3$-0.05 $BaTiO_3$ Thin Films

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The Influences of Particle Sizes on the Dielectric Properties of PEI/$(Ba_{0.8}Sr_{0.2})(Ti_{0.9}Zr_{0.1})O_3$ Composites

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The Influences of Rapid-Thermal Annealing on the Characteristics of $Sr_{0.6}Ba_{0.4}Nb_2O_6$ Thin Film EP444

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The Research of Manufacture of Flexible Conductive Tracks at Room Temperature

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EP445

The study of individual ZnO nanowires I-V characteristics

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EP446

The Study on the Carrier Mobility of Organic Light-Emitting Diodes

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Theoretical Study of the Effect of Conjugation Path on the Electron Transport through Molecular Wires

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EP448

Toluidine Red Nanoparticles and Their Application in Electrophoretic Display

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EP449

Transparent Thin Film Transistors Based on Parallel Array of Si Nanowires

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EP450

Two steps chemical mechanical polishing of sapphire substrate

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Study on the Structural and Photoluminescence Properties of Er-doped ZnO Films

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EP452

Fabrication and photoluminescence of Er-doped Al_2O_3 thin films deposited by sol-gel method

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EP453

Data Retention of Partial-SET States in Phase Change Memories

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Formation and Electrochemical Behaviour of Polyoxometalate-Capped Gold Nanoparticles Assembly Electrode

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EP455

Mechanical and Electrical Properties of Cu-Ag nanocomposites Processed by Equal Channel Angular Pressing (ECAP)

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EP456

Electrical Characterization and Reliability Analysis of HfO_2-TiO_2-Al MOSCAPs

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Memory and negative photoconductivity effects of Ni nanocrystals embedded in MOS structure

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Field emission from zinc oxide nanorods grown on screen-printed carbon nanotube thin film

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EP459

Electrochemical behaviors of composite electrode of TiO_2 nanotube arrays and carbon nanoparticles

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Nanophotonics Oral Session

LT-11

Chair: Daniel H C ONG, The Chinese University of Hong Kong

8:30 **Design Optimization of Nanoreplicated Photonic Crystal Label-free Biosensor**

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PC401

8:45 **Multimode Rate-equation-based VCSEL Thermal and Spatial Model of Circuit Level**

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9:00 **Optical Characteristics of Al/Si structure and Ag/Al_2O_3/Ag Plasmonic Thermal Emitter with Square and Hexagonal Lattice**

Yi-Tsung Chang*, Hung-Hsin Chen, I-Cheng Tung, Hao-Fu Huang, Pei-En Chang and Si-Chen Lee*

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9:15 **Enhanced Middle-Infrared Light Transmission Through Au/SiOxNy/Au Aperture Arrays**

Gongli Xiao[1,2], Xiang Yao[1], Xinming Ji[1], Jia Zhou[1], Zongming Bao[1], and Yiping Huang[1,*]

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9:30 **Modification of the Optical Prope rties of Polydimethylsiloxane (PDMS) for Photonic Crystal Biosensor Application**

Sakon Rahong[1,3], Bunpot Saekow4, Suppanit Porntheerapat[2*], Jiti Nukeaw[3,4], Chandech Hruanun[2], and Amporn Poyai[2]

[1] National Nanotechnology Center (NANOTEC) National Science and Technology Development Agency (NSTDA) 130, Thailand Science Park, Phahonyothin Road., Klong 1, Klong Luang, Pathumthani 12120 Thailand [2] Thai Microelectronic Center (TMEC) National Electronics and Computer Technology Center (NECTEC) [3] ThEP Center, CHE, 328 Si Ayutthaya Road, Bangkok 10400, Thailand [4] College of Nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Chalongkrung Road, Ladkrabang, Bangkok 10520, Thailand

[*]Email:Supanit.porntheeraphat@nectec.or.th

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10:00 Break

Chair: Daniel H C ONG, The Chinese University of Hong Kong

10:15 **Optical Reflectometry and Ellipsometry Measurements of Graphene and Thin Graphitic Films on Bulk Low-Index Substrates**

Peter E. Gaskell[*], Helgi S. Skulason and Thomas Szkopek

Department of Electrical & Computer Engineering, McGill University, Montreal, Canada [*]Email: peter.gaskell@mail.mcgill.ca

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10:30 **Fianite in Electronics and Photonics**

A.N. Buzynin [a], V.V. Osiko [a], Yu.N. Buzynin b M.N. Drozdov [b] ,E.E. Lomonova [a], O.I. Khrykin [b], M.A. Trishenkov [c], B.N.Zvonkov [d]

[a]A.M.Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russia; [b]Institute for Physics of Microstructure, Russian Academy of Sciences, Nizhni Novgorod, Russia; [c]Federal State Unitary Enterprise "Research and Production Assoc. ORION", Moscow, Russia; [d]Physicotechnical Research Institute, Nizhni Novgorod State University, Nizhni Novgorod, Russia

[*]Email:buzynin@lst.gpi.ru

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10:45 **Sub-Wavelength Imaging from Multilayer Superlens**

Guixin Li,[1] Jensen Li[2, 3] Hoi Lam Tam,[1] Che Ting Chan [2] and Kok Wai Cheah [1*]

[1] Department of Physics, Hong Kong Baptist University, 224 Waterloo Road Kowloon Tong, Hong Kong, China. [2] Department of Physics, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China. [3] NSF Nanoscale Science and Engineering Center (NSEC), 5130 Etcheverry Hall, University of California, Berkeley, CA 94720-1740, USA

[*]Contacting Author: Kok Wai Cheah is with the Department of Physics, Hong Kong Baptist University, 224 Waterloo Road, Kowloon Tong, Hong Kong, China, Phone: 852-34117033, Fax: 852-34115183, Email: kwcheah@hkbu.edu.hk.

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11:00 **Ultra Compact Microring with Resonator Cavities inside**

Wei Hong and Xiaohan Sun[*]

Lab of Optical Communications and Photonics, Southeast University, Nanjing, 210096, China

[*]Contacting Author: xhsun@seu.edu.cn,

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11:15 **Tunable Magnetic Resonance in Metal-Dielectric-Metal Layered Structures**

L. Zhou and Y. Y. Zhu[*]

National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University,

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Nanjing, China. *Contacting Author: Y. Y. Zhu is with Department of Physics, Nanjing University, Nanjing, China. (phone: +86-25-83621240; email: yyzhu@nju.edu.cn)

11:30 **Miniaturized large-grating-clearance linear encoder based on beam-splitting optical system with MOEMS LD and wireless moving part for rebound nondestructive testing**

Rao Yao*, Xiaoxing Li, Lipei Jiang, Peng Yao, and Xiaohong Li

[1] School of Mechanical Engineering & Automation, Beihang University, Beijing, China [2] Opto-Mechatronic Equipment Technology Beijing Area Major Laboratory, Beijing, China [3] Beihua University, Jilin, China [4] Jilin Teacher's Institute of Engineering and Technology, Jilin, China *Contacting Author: Rao Yao is with the School of Mechanical Engineering & Automation, Beihang University, Beijing, China (phone: +86 010-82310338; email:yaorao760307@sina.com)

PC412

11:45 **Solution-Grown CdTe Nanowires: Self-Assembly, Optical Properties and Strong Temperature Dependent Electronic Coupling**

Jianhong Zhang[1], Andrey A. Lutich[1], Andrei S. Susha[1], Markus Döblinger[2], Yury P. Rakovich[3], Yuri Volkov[4], John F. Donegan[3], Frank Jäckel[1], Jochen Feldmann[1], and Andrey L. Rogach[5*]

[1] Photonics and Optoelectronics Group, Department of Physics & CeNS, Ludwig-Maximilians-University Munich, Amalienstr. 54, 80799 Munich, Germany [2] Department of Chemistry & CeNS, Ludwig-Maximilians-University Munich, Butenandtstr. 11, 81377 Munich, Germany [3] Semiconductor Photonics Group, School of Physics & CRANN Research Centre, Trinity College Dublin, Dublin 2, Ireland [4] Dublin Molecular Medicine Centre and Department of Clinical Medicine, Trinity College Dublin, Dublin 8, Ireland [5] Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong *Corresponding author. E-mail: andrey.rogach@cityu.edu.hk

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12:00 **Wavefront Engineering of Semiconductor Lasers Using Plasmonics**

Nanfang Yu, Romain Blanchard, Jonathan A. Fan, Qi Jie Wang, Mikhail Kats, and Federico Capasso

School of Engineering and Applied Sciences, Harvard University, Cambridge, Massachusetts 02138, U.S.A. E-mail: nyu@fas.harvard.edu, capasso@seas.harvard.edu

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12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Ping SHENG, The Hong Kong University of Sciecne and Technology

16:15 **Demonstration of Super-Collimation in SOI Photonic Crystal Fabricated by 0.13μm CMOS Technology**

Aimin Wu, Zhifeng Yang, Xulin Lin, Xunya Jiang, Fuwan Gan, Miao Zhang, Xi Wang, Shichang Zou

State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China *Contacting Author:wuaimin@mail.sim.ac.cn

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16:30 **Metal-Based Photonic Coatings from Electrochemical Methods**

Chun Kwan Tsang[a], Zhengtao Xu[b], and Yang Yang Li[a*]

[a] Department of Physics and Materials Science, [b] Department of Biology and Chemistry, City

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University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong * Contacting Author: yangli@cityu.edu.hk

16:45 **Atom/Molecule Transportation using a Dark Soliton Pulse**

C. Vongchumyen[1] , S.Authasing[1], S. Mitatha[1], J. Ali[2] and P. P. Yupapin[3]
[1] Hybrid Computing Research Laboratory, Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand [2] Institute of Advanced Photonics Sciences, Science Faculty Universiti Teknologi Malaysia, 81310 Skudai, Johor Bahru, Malaysia [3] Advanced Research Center for Photonics, Faculty of Science, King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand *Corresponding author : kmsomsak@kmitl.ac.th

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17:00 **Photonic nanostructures self-assembled from organoplatinum(II) complexes**

V. A. L. Roy, Mai-Yan Yuen, Wei Lu, Steven C. F. Kui, Glenna So Ming Tong, Man-Ho So, Stephen Sin-Yin Chui, and Chi-Ming Che
Department of Physics and Materials Science, City University of Hong Kong, Kowloon Tong, Hong Kong Department of Chemistry and HKU-CAS Joint Laboratory on New Materials The University of Hong Kong, Pokfulam Road, Hong Kong CNR-ISMN, Istituto per lo Studio dei Materiali Nanostrutturati, Bologna (Italy) Department of Physics, The University of Hong Kong, Pokfulam Road, Hong Kong

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17:15 **Ultrasmall Optical Beam Splitters Assembled by Polymer Nanowires**

Xiaobo Xing and Baojun Li*
State Key Laboratory of Optoelectronic Materials and Technologies, School of Physics and Engineering, Sun Yat-Sen University, Guangzhou 510275, China *Corresponding author: stslbj@mail.sysu.edu.cn

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17:30 **Dynamic Optical Tweezers: Experiment**

S. Mitatha[1], S. Noppanakeepong[1],J. Ali[2] and P.P. Yupapin[3]
[1] Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand [2] Institute of Advanced Photonics Sciences, Science Faculty Universiti Teknologi Malaysia 81310 Skudai, Johor Bahru, Malaysia [1] Faculty of Science, King Mongkut's Institute of Technology Ladkrabang, Bangkok 10520, Thailand *Contacting Author: P.P. Yupapin(kypreech@kmitl.ac.th)

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17:45 **Electrical, Optical and Electrochromic Properties of VO_2-WO_3 Nanocomposite Thin Films**

Ajay Kaushal[1], Rajendra N.Goyal[2] and Davinder Kaur[1*.]
[1] Department of Physics and Center of Nanotechnology, Indian Institute of Technology Roorkee, India [2] Department of Chemistry and Center of Nanotechnology, Indian Institute of Technology Roorkee, India. *Dr. Davinder Kaur Assistant Professor Department of Physics & Center of Nanotechnology, Indian Institute of Technology Roorkee, Roorkee, India Tel: 91-1332-285407; Fax: 91-1332-273560 Email: dkaurfph@iitr.ernet.in

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Nanophotonics Poster Session II

ATRIUM

14:00

Photoelectric Properties of Novel Conjugated Copolymers Based on 3, 4-Ethylenedioxythiophene and π-deficient aromatic rings

De-Lin Wu[a] , Bo Shena, Li-Min Liu[a], Guo-Yuan Lu[a,]*, Ting-Chao He[b], Qiang Zhang[b], Chang-Shun Wang[b]
[a] Department of Chemistry, State Key Laboratory of Coordination Chemistry, Nanjing University,

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Nanjing, 210093, People's Republic of China [b] Department of Physics, Shanghai Jiao Tong University, Shanghai, 200240, People's Republic of China * Corresponding authors. Tel: +86-025-83317761. Fax: +86-025-83317761. E-mail: lugyuan@nju.edu.cn (Guo-Yuan. Lu.).

Properties of Al-doped ZnO thin films prepared by ion-beam sputtering deposition under different plasma power

Guang-Xing Liang, Ping Fan*, Xing-Min Cai, Dong-Ping Zhang, Zhuang-Hao Zheng
Institute of Thin Film Physics and Application, College of Physics Science and Technology, Shenzhen University, Shenzhen, 518060, China Corresponding author. E-mail address: fanping@szu.edu.cn (Prof. Fan). Fax: +86-755-26536021; Tel: +86-755-26536021

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Strained $Ge_{1-x}Sn_x$ thin film on Ge (100) with low temperature Ge buffer layer

I.S. Yu, K.Y. Wu, K.Y. Wang, T.H. Wu, H.H. Cheng*, V. Ulyanov, V.I. Mashanov, O.P. Pchelyakov
[1] Graduate Institute of Electronics Engineering, National Taiwan University, Taipei, Taiwan
[2] Institute of Semiconductor Physics, Russian Academy of Sciences, Siberian Branch, Novosibirsk, Russia Center for Condensed Matter Science, 1, Roosevelt Road, Section 4, National Taiwan University, Taipei, Taiwan E-mail : hhcheng@ntu.edu.tw

PP403

Study of the drug release kinetics in nanoscale micelle to micelle system

Wang Hong and Hongyu Chen*
Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University (phone: +65-63168795; fax: +65-67911961; e-mail: hongyuchen@ntu.edu.sg)

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Synthesis and Optical Properties of Eu^{3+}-doped $CaSnO_3$ Nanocrystals by Hydrothermal method

Zuoling Fu, Hyun Kyoung Yang, Byung Chun Choi, Jung Hyun Jeong*
Department of Physics, Pukyong National University, Busan 608-737, Republic of Korea *Contacting Author: J. H. Jeong is with the Department of Physics, Pukyong National University, Busan 608-737, Republic of Korea (phone: 82-51-629-5564; fax: 82-51-629-5549; e-mail: jhjeong@pknu.ac.kr).

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Synthesis of N-doped TiO_2 nanotubes on titanium substrate by anodic oxidation and implantation

Li Jinlong *, Song Zhenlun
Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China Contacting author: Li Jinlong, Tel.:+86-0574-86685171 E-mail address: lijinlong1998@yahoo.com.cn

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The effect of thermal treatment on the self-ordered luminescence properties of porous anodic alumina structure

Chia-Hui Fang, Jen-Cheng Wang, and Tzer-En Nee*
Department of Electronic Engineering, Chang Gung University, Tao-Yuan 333, Taiwan, Republic of China. *Contacting Author: Tzer-En Nee is with the the Department of Electronic Engineering, Chang Gung University, Tao-Yuan 333, Taiwan, Republic of China. (phone: +886-3-2118800 ext. 5791; fax: +886-3-2118507, E-mail: neete@mail.cgu.edu.tw)

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The Study on Preparation of ZnO Nanowire in AAO by Electrodeposition Method

Danli Wang, Yongfeng Ruan*, Lingcui Zhang, Shouchao Zhang, and Pengfei Ma
School of Science, Tianjin University, Tianjin 300072, China. *Contacting Author: Yongfeng Ruan, E-mail:ruanyf@tju.edu.cn

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Transparent conductive IZO films prepared by atomic layer deposition using DEZn/TMIn

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and N_2O

Chi-Ying Hsiao[1], Jing-Hsung Yang[1], Jyh-Rong Gong[1]*, Dong-Yuan Lyu[2], Tai-Yuan Lin[2], Cheng-Tao Lu[3], and Der-Yuh Lin[3]
[1] Department of Physics, National Chung Hsing University, Taichung 402, Taiwan, Republic of China [2] Institute of Optoelectronic Sciences, National Taiwan Ocean University, Keelung 202, Taiwan, Republic of China [3] Department of Electronic Engineering, National Changhua University of Education, Changhua 500, Taiwan, Republic of China *Electronic mail: jrgong@phys.nchu.edu.tw; Tel: +886-4-2284-0427; Fax: +886-4-2285-8583.

Well-alligned Polymer Nanowires for Amplified Sensory Response to TNT

Changmin Deng, Qingguo He*, Jiangong Cheng*, Huimin Cao, Chao He and Liqi Shi
Lab of Nanotechnology, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, 865 Changning Road, Shanghai 200050, China. *Contacting Author: Qingguo He and Jiangong Cheng are with Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China. (phone: +86-21-62511070-8967; fax:+86-21-62511070-8714; email: hqg@mail.sim.ac.cn , jgcheng@mail.sim.ac.cn).

PP410

Characterization of Er-doped ZnO nanorod arrays for broadband antireflection

Cheng-Ying Chen, Yen-Chun Chao, Chin-An Lin, Jian-Wei Lo, and Jr-Hau He*
Institute of Photonics and Optoelectronics, and Department of Electrical Engineering, National Taiwan University, Taipei, 106 Taiwan (ROC) *Contacting Author: Jr-Hau He; E-mail: jhhe@cc.ee..ntu.edu.tw

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Enhancing the contrast ratio of organic light emitting diode by organic-metal lightabsorbing cathode as black layer

Peng Yu Chen[1], Meiso Yokoyama[2] and Herng Yih Ueng[1],*
[1]Department of Electrical Engineering, National Sun Yat-Sen University,Kaohsiung, 80424 Taiwan, Republic of China [2]Department of Electronic Engineering, I-Shou University, Kaohsiung County,Taiwan, Republic of China *Contacting Author: Herng Yih Ueng is with the School of National Sun Yatsen University, Department of Electrical Engineering, Taiwan, ROC (phone: 886-7-5252000 #4181 Email: hueng@ee.nsysu.edu.tw)

PP412

Polymer Encapsulated AuNP SERS Probes and Ligand Exchange Kinetics Monitored by SERS

Yuhua Feng, Hongyu Chen*
Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371, Singapore *Contacting Author: Hongyu Chen is with the Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371, Singapore (phone: +65-63168795; fax: +65-67911961; e-mail: hongyuchen@ntu.edu.sg; website: http://www.ntu.edu.sg/home/hongyuchen/).

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Highly Sensitive Sensor for Detecting Refractive Index Change of Liquids Using Single Microfiber

Chenghua Sui[1,]*, Pinghui Wu[1], and Biqing Ye[2]
[1]Department of Applied Physics, Zhejiang University of Technology, Hangzhou, China
[2]Department of Science, Zhijiang College of Zhejiang University of Technology, Hangzhou, China *Contacting Author: Chenghua Sui is with Department of Applied Physics, Zhejiang University of Technology, Hangzhou, 310023, China (Phone: +86-571-85290327; email: suich@zjut.edu.cn).

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Plasmon-Enhanced Luminescence in MEH-PPV Coupled Silver Nanoantenna Arrays and the

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Potential for Photovoltaics

Lifang Si[1], Teng Qiu[1]*, Wenjun Zhang[2], and Paul K. Chu[2]
[1] Department of Physics, Southeast University, Nanjing 211189, P. R. China [2] Department of Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong, P. R. China
*Contacting Author: Teng Qiu is with Department of Physics, Southeast University, Nanjing 211189, P. R. China. Tel.: +86 25 52090600x8305; fax: +86 25 52090600x8204.

Controlled Assembly of Sliver Nanocap Arrays with Tunable Gaps for Molecular Sensing Using SERS

Xianzhong Lang[1], Teng Qiu[1]*, Wenjun Zhang[2], and Paul K. Chu[2]
[1] Department of Physics, Southeast University, Nanjing 211189, P. R. China [2] Department of Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong, P. R. China
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Hot Spots in Silver Nano-Dendrites Fabricated by Self-Selective Electroless Plating

Yan Zhang[1], Teng Qiu[1]*, Wenjun Zhang[2], and Paul K. Chu[2]
[1] Department of Physics, Southeast University, Nanjing 211189, P. R. China [2] Department of Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong, P. R. China
*Contacting Author: Teng Qiu is with Department of Physics, Southeast University, Nanjing 211189, P. R. China. Tel.: +86 25 52090600x8305; fax: +86 25 52090600x8204.

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Optimization of Periodic Nanopore Surface Texturing for Silicon Thin Film Photovoltaic Application

Fei Wang, Junshuai Li, and HongYu Yu*
School of Electrical and Electronic Engineering, Nanyang Technological University, Nanyang Avenue, Singapore 639798 *Contacting Author: hyyu@ntu.edu.sg

PP418

A Novel Thermal Controlled Optical Attenuator

Peng-Qin Wu[a], Tong Zhang[a,*], An-ming Hu[b], Xiaojun Xue[a], Xiao-yang Zhang[a], and Qiu-yue Chen[a]
[a]. School of Electronic Science and Engineering, Southeast University, Nanjing 210096, China
[b]. Department of Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, 200 University Avenue West, ON, Canada N2L 3G1 *E-mail: tzhang@seu.edu.cn

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Tunable Microring Resonator Based On Dielectric-Loaded Surface Plasmon-Polariton Waveguides

Xiao-yang Zhang[a], Tong Zhang[a,*], An-ming Hu[b], Xiao-jun Xue[a], Peng-Qin Wu[a], and Qiu-yue Chen[a]
[a]School of Electronic Science and Engineering, Southeast University, Nanjing 210096, China
[b]Department of Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, 200 University Avenue West, ON, Canada N2L 3G1 *Contacting Author: tzhang@seu.edu.cn

PP420

Nanobiology Oral Session I

LT-1

Chair: Huang Nan, Southwest Jiaotong University

8:30 **The Nanofabrication of CD34 Antibody-VEGFHeparin on Titanium Surface via Layer-by-Layer Assembly for Biofunctionalization**

Shihui Liu, Junying Chen*, Cheng Chen, and Nan Huang
Key Laboratory of Advanced Technology of Materials, Education Ministry of China, School of Material Science and Engineering, Southwest Jiaotong University, Chengdu, China, 610031.

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*Contacting Author: Junying Chen is with the Key Laboratory of Advanced Technology of Materials, Education Ministry of China, School of Material Science and Engineering, Southwest Jiaotong University, Chengdu, China, 610031. (phone: +86-28 87634148; email: chenjy@263.net

8:45 **Metal Nanoparticles Formed by Direct Deposition on Liquid-crystalline Phospholipid Membrane**

Jung H. Kim, Nuri Oh, Hyeun H. An and Chong S. Yoon*, Member, IEEE
Division of Materials Science and Engineering, Hanyang University, Seoul, 133-791, Korea
*Contacting Author: Chong S. Yoon is with the Division of Materials Science and Engineering, Hanyang University, Seoul, 133-791, Korea. (Phone: +82-2-2220- 0384; e-mail: csyoon@hanyang.ac.kr)

BC402

9:00 **Photonic Nano-Structure of R. Gigantea**

Suet Ying Ching[1], Gui Xin Li[1], Hoi Lam Tam[1], David T. P. Goh[2], Joseph K. L. Goh[2] and Kok Wai Cheah[1*]
[1] Department of Physics, Hong Kong Baptist University, 224 Waterloo Road, Kowloon Tong, Hong Kong, China. [2] Penang Butterfly Farm, P. Penang, Malaysia. *Contacting Author: Kok Wai Cheah is with the Department of Physics, Hong Kong Baptist University, 224 Waterloo Road, Kowloon Tong, Hong Kong, China, Phone: 852-34117033, Fax: 852-34115183, Email: kwcheah@hkbu.edu.hk.

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9:15 **Antibacterial, Antiviral, and Antibiofilms Nanoparticles**

Aharon Gedanken
Department of Chemistry, Bar-Ilan University, Ramat-Gan 52900, Israel *Contacting Author: Aharon Gedanken

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9:30 **Bionic Nanocomposite Actuator Based on Carbon Nanotube and Ionic Biopolymer**

Wei Chen*, and Luhua Lu
Department of Nanobiomedicine, Suzhou Institute of Nanotech and Nanobionics, Chinese Academy of Science, Suzhou, 215125, China. *Contacting Author: Wei Chen is with the Suzhou Institute of Nanotech and Nanobionics, Chinese Academy of Science, China (phone: 86-512-62872528; fax: 86-512-62872553; email: wchen2006@sinano.ac.cn).

BC405

9:45 **Osteoinduction and Proliferation Evaluation of Nano-Sr-HAP as A Novel Orthopedic Biomaterial**

Yongqiang Hao[1*] ,Huanqing Yan[1] ,Xuepeng Wang[1] ,Bangshang Zhu[2],and Congqin Ning[3]
[1] Department of orthopaedics, Ninth People's Hospital, Shanghai Key Laboratory of Orthopaedic Implant ,Shanghai Jiao Tong University School of Medicine, Shanghai, China [2] Instrumental Analysis Center, Shanghai Jiao Tong University, Shanghai, China [3] Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China *Contacting Author: Yongqiang Hao is Department of orthopaedics, Shanghai Key Laboratory of Orthopaedic Implant, Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China (phone: +86-21 23271133; fax:+86-21 63137020; email:hao_yongqiang@hotmail.com).

BC406

10:00 Break

Chair: Won-Gun KOH, Yonsei University

William Weijia LU, The University of Hong Kong

10:15 **Preparation and Formation Mechanism of Porous and Nanostructured TiO_2/BCP Coatings on Titanium**

Hongjie Hu, Xuanyong Liu*, and Chuanxian Ding

BC407

Key Laboratory of Inorganic coating materials，Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai 200050, China *Contacting Author: Xuanyong Liu is with Shanghai Institute of Ceramics, Chinese Academy of Science, China. (Phone: +86-21 52412409; fax: +86-21 52412409; email: xyliu@mail.sic.ac.cn).

10:30 **The Antibacterial Activities of Nano-Ag Synthesized by PAMAM on PET Film Surfaces After DBD Plasma Treatment**

Juan Li, Qiang Chen*, and Lizhen Yang
Laboratory of Plasma Physics and Materials, Beijing Institute of Graphic Communication, 102600, Beijing, China. *corresponding author: Qiang Chen （Email:lppmchenqiang@hotmail.com Tel : 0086-10-6026-1099)

BC408

10:45 **Bio-inspired Energy Conversion Systems Based on Ion Channel**

Lei Jiang
Center of Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, P. R. China E-mail：jianglei@iccas.ac.cn

BC409

11:00 **Learning from Nature about Principles of Hierarchical Materials**

Huajian Gao*
Division of Engineering, Brown University, Providence, RI 02912,USA.
Email: huajian_gao@brown.edu

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11:30 **Nickel ion level in scoliotic patients implanted with nitrogen plasma surface modified nickel-titanium superelastic spinal implant**

KWK Yeung[1], WN Lam[1], D Natarajan[1], SL Wu[2], T Hu[2], PK Chu[2], CY Chung[2], WW Lu[1], KDK Luk[1], KMC Cheung[1*]
[1]Division of Spine Surgery, Department of Orthopaedics and Traumatology, The University of Hong Kong, Pokfulam, Hong Kong, China [2]Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China e-mail: wkkyeung@hku.hk

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11:45 **The effect of Ethylene Vinyl Acetate and Poly(methyl methacrylate) substrates that contain organo clay and adsorbed Fe_2O_3 nanoparticles on cell growth and proliferation**

Hilana M. Lewkowitz-Shpuntoff[a,*] , Mary C. Wen[b,] Avtar Singh[c], Nicole Brenner[d], Richard Gambino[d], Nadine Pernodet[d],Rebecca Isseroff[e], Miriam Rafailovich[d,*], Jon Sokolov[d]
[a] Department of Chemistry, Princeton University, Princeton, NJ 08544, USA [b] Department of Electrical Engineering, Princeton University, Princeton, NJ 08544, USA [c] Department of Physics, Cornell University, Ithaca, NY14850, USA [d] Department of Material Science and Engineering, SUNY at Stony Brook, Stony Brook, NY11794, USA [e] Lawrence High School, Cedarhurst, NY11516, USA hlewkowi@princeton.edu

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12:30 Lunch

14:00 Poster Session

16:00 Break

Chair: Yingchun ZHU, Shanghai Institute of Ceramics, CAS

Hairong LIU, Hunan University

16:15 **Chitosan-PEI graft copolymers for pDNA delivery: Fabrication and in vitro properties**

Wing-Fu Lai and Marie C. M. Lin
Department of Chemistry, University of Hong Kong,Hong Kong Special Administrative Region, China. * Correspondence: W. F. Lai (e-mail: rori0610@graduate.hku.hk) and M. C. M. Lin (phone:

BC414

2299 0776, fax: 2817 1006, e-mail: mcllin@hkusua.hku.hk)

16:30 **Control Release of Bactericidal Ion by an Electronically Driven System**

Kuo Hsiung Tseng, Chih Yu Liao*, Der Chi Tien, and Jen Kuang Lung

Kuo Hsiung Tseng is with the Department of Electrical Engineering,National Taipei University of Technology, Taipei 10608, Taiwan, R.O.C. Der Chi Tien is with the Graduate Institute of Mechanical and Electrical Engineering, National Taipei University of Technology, Taipei 10608, Taiwan,R.O.C. Jen Kuang Lung is with the Department of Electrical Engineering, National Taipei University of Technology, Taipei 10608, Taiwan, R.O.C. *Contacting Author: Chih Yu Liao is with the Department of Electrical Engineering, National Taipei University of Technology, Taipei 10608, Taiwan, R.O.C. (phone: +886-926-645-301; fax: +886-2-2731-7187, e-mail: t5319016@ntut.edu.tw). BC415

16:45 **Preparation of a new nanosized $As_2O_3/Mn_{0.5}Zn_{0.5}Fe_2O_4$ thermosensitive magnetoliposome and its antitumor effect on MDA_MB_231 cells**

Li Wang, Ziyu Wang, Dongsheng Zhang

School of Medicine, Southeast University, Jiangsu Province Key Laboratory of Biomaterial, Southeast University, Nanjing 210009 *Contacting Author Dongsheng Zhang, male, professor, b7712900@jlonline.com Tel:86-25-83272502 BC416

17:00 **Preparation and Characterized of Polyethylenimine-coated Magnetic Nanoparticles**

Cheng K Li, Biao Yan*, Chun F Du, Hong Z Qi

School of Material Science and Engineering,Shanghai Key Lab. of D&A for Metal-Functional Materials, Tongji University,1239 Siping Road, Shanghai 200092, China *Contacting Author: Biao Yan is with the School of Material Science and Engineering, Shanghai Key Lab. of D&A for Metal-Functional Materials, Tongji University, China(phone:+86-21 65981178; email: yanbiao@vip.sina.com) BC417

17:15 **The Research of RGD-conjugated PLA-PLL Nanoparticles Carriers on Targeted Delivery to Tumor**

Peifeng Liu1, [2], Xuelian Qi[2], Ying Sun[2], Hongzhi Wang[1], Yaogang Li[1*] and Yourong Duan[2*]

[1]State Key Lab for Modification of Chemical Fibers & Polymer Materials,Donghua University, Shanghai, China, 2Cancer Institute of Shanghai Jiao Tong University, Shanghai, China *Corresponding Author: Yaogang Li is with State Key Lab for Modification of Chemical Fibers & Polymer Materials,Donghua University, Shanghai, China (phone/ fax:+86-21-67792324; email: yaogang_li@dhu.edu.cn). Yourong Duan is with Cancer Institute of Shanghai Jiao Tong University, Shanghai, China (phone/fax: +86-21 64437139; email: yrduan@sci.shmu.edu.cn). BC418

17:30 **Molecular-Nanotechnology for Signal-Stimulated Drug Release Control**

Yingchun Zhu[1,*] Fang Li[1] and Masahiro Fujiwara[2]

[1] The key Lab of Inorganic Coating Materials, Shanghai Institute of Ceramics, Chinease Academy of Sciences, Shanghai, China 2 National Institute of Advanced Industrial Science and Technology (AIST), Ikeda, Osaka, Japan *Contacting Author: Yingchun Zhu is with the key Lab of Inorganic Coating Materials, Shanghai Institute of Ceramics, CASS, Dingxi Road 1295, Shanghai 200050 China (Phone: 86-21-52412632; Fax: 86-21-52412632; E-mail: yzhu@mail.sic.ac.cn, yingchunzhu@yahoo.com) BC419

17:45 **Synthesis of A Novel Biodegradable Amphiphilic and Cationic Copolymers for Dual Gene and Drug Delivery**

Shutao Guo[1,3], Weiwei Wang1, Jing Zhao[2,] Jinfeng Xing[1], Liandong Deng[1], Youguo Huang[2], Xing-Jie Liang[3*], Anjie Dong[1*] BC420

[1] School of Chemical Engineering and Technology, Tianjin University, Tianjin, China; [2] National

Laboratory of Biomacromolecules, Institute of Biophysics, Academia Sinica, Beijing, 100101, China , and 3 CAS Key Laboratory for Biomedical Effects of Nanomaterials and Nanosafety, National Center for Nanoscience and Technology of China, Beijing, 100190, China
Corresponding authors: Xing-Jie Liang works at National Center for Nanoscience and Technology of China (liangxj@nanoctr.cn) and Anjie Dong is with Tianjin University(ajdong@tju.edu.cn).

18:00 **Core-shell Mesostructured Materials for Bio-separation and Drug Delivery**

Shizhang Qiao*
ARC Centre of Excellence for Functional Nanomaterials, Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, QLD 4072, Australia *Contacting Author: Shizhang Qiao is with ARC Centre of Excellence for Functional Nanomaterials, Australian Institute for Bioengineering and Nanotechnology, The University of Queensland, QLD 4072, Australia (phone: 61-7-22463815; fax: 61-7-33463973; e-mail:s.qiao@uq.edu.au)

BC421

18:15 **Platinum(IV) coordinated PEG-PEI, a gene delivery vector having antitumoral activity itself**

Zhaolu[a], Hu Xiurong[a], Li zonghai[b] ,Tang Guping[a*]
[a] Institute of Chemical Biology and Pharmaceutical Chemistry, Zhejiang University;Hangzhou, 310028, China.[b]Shanghai Cancer Institute of Shanghai JiaoTong 50 University, Shanghai and 2Shanghai Medical College Fudan University； Shanghai, 200032, China..

BC422

Nanobiology Oral Session II

LT-3

Chair: Zhihao BAO, Tongji University

16:15 **Long-term Antibacterial Effect of Nano-skeletoned Cu-TiN Films by Dual Magnetron Sputtering**

Xiubo Tian*, Chunbei Wei, Chunzhi Gong and Shiqin Yang
State Key Lab of Advanced Welding Production & Technology, Harbin Institute of Technology, 92 West Dazhi street, Harbin, China *Corresponding author:Xiubo Tian, with State Key Lab of Advanced Welding Production & Technology, Harbin Institute of Technology, 92 West Dazhi street, Harbin, China (86-451-86418791, xibotian@163.com)

BC423

16:30 **Protein-Ligand Interaction Revealed at Microsecond Time Scale**

Mingdong Dong, Ozgur Sahin
Rowland Institute at Harvard Harvard University 100 Edwin H. Land Blvd. Cambridge, MA 02142

BC424

16:45 **Mass sensitive sensor, a comparative study between PVC and PEI coated on quartz crystal microbalance**

K. Wong-ek*, N. Nuntawong, K. Jaruwongrungsee and A. Tuantranont
*Corresponding Author: K. Wong-ek is with Nanoscience and Technology Graduate Program, Chulalongkorn University, Thailand (phone: +66 2 561 6756; email: wongek@tu.ac.th) N. Nuntawong, K. Juruwongrungsri and A. Tuantranont are with Photonics Technology, Nanoelectronics and MEMS Laboratory, National Electronics and Computer Technology Center, Pathumthani Thailand

BC425

17:00 **Detection of DNA Using Sodium Octanesulfonate as the Probe by Resonance Light Scattering Technique**

Yingxi Wang[1], Ling Li[1], Quan Pan[1], Gongwu Song[1], Shuilin Wu[1,2,] Paul K. Chu[2*], and Zushun Xu1[,2*]
[1]Ministry-of-Education Laboratory for the Synthesis and Application of Organic Function Molecules, Hubei University, Wuhan 430062, China. [2]Department of Physics & Materials Science, City University of Hong Kong,Tat Chee Avenur, Kowloon, Hong Kong, China *Corresponding

BC426

Authors: Prof. Paul Chu Tel: 852-34427724, Fax: 852-27889549; Email: paul.chu@cityu.edu.hk; Prof. Xu Zushun: Tel +86-2761120608; tax:+86- 2788663043 Email: zushunxu@hubu.edu. Cn

17:15 **Porous titanium coating with sub-micro structure from anodic oxidation** BC427

Qingshan Fu, Xiaoguang Liu, Zhanwen Xiao, Xiangdong Zhu, Hongsong Fan*, Xingdong Zhang National Engineering Research Center for Biomaterials, Sichuan University, Chengdu 610064, China *Contacting Author: Hongsong Fan, hsfan@scu.edu.cn

17:30 **Multifunctional Vectors System for Cancer Therapy Using Single-walled Carbon Nanotubes and Antisense Oligonucleotide-modified Gold Nanoparticles Composite Materials** BC428

Yingyue Zhu[1, 2#], Wei Chen[1, 2#], Ruirui Qiao[3], Zhengyu Jin[1] and Chuanlai Xu[1]
[1]State Key Laboratory of Food Science and Technology, Jiangnan University, Wuxi, JiangSu, 214122, PRC [2]School of Food Science and Technology, Jiangnan University, Wuxi, JiangSu, 214122, PRC [3]Institute of Chemistry, Chinese Academy of Sciences, Zhong Guan Cun, Bei Yi Jie 2, Beijing 10008, PRC *Contacting Author: C. L. Xu is with the School of Food Science and Technology, Jiangnan University, Wuxi, China. (phone: +86 510-85329076; email: xcl@jiangnan.edu.cn).

17:45 **Synthesis of Fe_3O_4 Magnetic Fluid Used For Magnetic Resonance Imaging and Hyperthermia** BC429

X. Cao[1], R.Y. Hong[1,2*], G.H. Liu[3], Y.M. Chen[3], X.F. Chen[4] and H.Z. Li[2]
[1]College of Chemistry, Chemical Engineering & Materials Science, and Key Laboratory of Organic Synthesis of Jiangsu Province, Soochow University, SIP, Suzhou 215123, China [2] State Key Laboratory of Multi-phase Complex Systems, Institute of Process Engineering, Chinese Academy of Sciences, Beijing 100080, China [3] Resparation Department, the Affliated Suzhou Municipal Hospital(East-section) of Nanjing Medical University, [4] Chemical Engineering Department, Chien-shiung Institute *Contacting Author: R.Y. Hong is with College of Chemistry, Chemical Engineering & Materials Science, Soochow University, SIP, Suzhou 215123, China

Nanobiology Poster Session II

ATRIUM

14:00

Nucleotide-Mediated Size Fractionation of Gold Nanoparticles in Aqueous Solution BP401

Wenting Zhao, [# 1] Li Lin, [# 1] and I-Ming Hsing [* 1,2]
[1] Bioengineering Graduate Program, and [2] Department of Chemical and Biomolecular Engineering, the Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong S.A.R., China *Contacting Author: I-Ming Hsing, E-mail: kehsing@ust.hk. Telephone: (852) 2358-7131. Fax: (852) 3106-4857.

Photoelectrochemical Immunosensor by a Ru-bipy Label on a Nanostructured TiO_2 Electrode BP402

Liqiong Wu*, Qingqing Miao, Wei Guo, Huizhi Zhou, and Tingli Ma*
State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian, China. *Contacting Author: Tingli Ma is with the State Key Laboratory of Fine Chemicals, Dalian University of Technology, Dalian, China. (phone: +86-411-39893820; email: tinglima@dlut.edu.cn)

Polyacrylic Acid-Derivatized Superparamagnetic Iron Oxide Nanoparticles for Delivery of Tissue Plasminogen Activator BP403

Jyh-Ping Chen,* Pei-Chin Yang, and Hwei-Fang Hwang
Department of Chemical and Materials Engineering, Chang Gung University, Kwei-San, Taoyuan 333, Taiwan, ROC. * Contacting author (e-mail: jpchen@mail.cgu.edu.tw).

Preparation and Characterization of Polymeric Micelles Consisting of Poly(propylene glycol) and Poly(caprolactone) As a Drug Carrier BP404

Sang Hyo Lee[1], Jae Min Oh[2], Jin Soo Son[1], Jae Hyeok Lee[1], Jae Il Kim[3], Doo Yeon Kwon[3], Bong Lee[3], Jae Ho Kim[1] and Moon Suk Kim[1,]*
[1]Department of Molecular Science and Technology, Ajou University, Korea [2]BK-21 Polymer BIN Fusion Research Team, Chonbuk National University, Korea [3]Department of Polymer Engineering, Pukyung National University, Korea *Corresponding author. Tel.+82-31-219-2608; fax. +82-31-219-3931. E-mail: moonskim@ajou.ac.kr

Preparation of Composite Electrospun Nanofibers of Polycaprolactone and Nanohydroxyapatite for Osteogenic Differentiation of Stem Cells

Jyh-Ping Chen,* Guo-Chun Lai, and Yin-Shin Chang
Department of Chemical and Materials Engineering, Chang Gung University, Kwei-San, Taoyuan 333, Taiwan, ROC. * Contacting author (e-mail: jpchen@mail.cgu.edu.tw).

BP405

Protein immobilization on nanostructured surfaces with different wettability

Z. J. Han,* M. Shakerzadeh, B. K. Tay, and C. M. Tan
Nanoelectronics Lab 1, School of Electrical and Electronic Engineering, Nanyang TechnologicalUniversity, Singapore 639798, Singapore *Electronic mail address: zjhan@ntu.edu.sg

BP406

Self Emulsified Systems to Enhance Stability of Paclitaxel

Ju Young Lee[1], E Sle Kim[2], Yun Mi Kang[2], Kkot Nim Kang[2,3], Da Yeon Kim[3], Sung Joo Hwang[1], Bong Lee[3], Hai Bang Lee[2], JaeHo Kim[2] and Moon Suk Kim[2,]*
[1]Pharmaceutical engineering, Chungnam National University, Korea [2]Department of Molecular Science and Technology, Ajou University, Korea [3]Department of Polymer Engineering, Pukyong National University, Korea *Electronic mail address: zjhan@ntu.edu.sg

BP407

Stainless steel induced DNA damage and reduced by nitrogen plasma immersion ion implantation

Jiang Jiang [a], Zhigang Ke [a], Xi Su [a], Qing Huang[a]*
[a] Key Laboratory of Ion Beam Bioenginegering, Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China *Corresponding author Prof. Qing Huang Email: huangq@ipp.ac.cn

BP408

Structure Recoverability and Dynamic Rheological Behavior of Injectable Calcium Phosphate Cement Paste Modified by Polyethylene Glycol-6000

Fangping Chen, Changsheng Liu *, Yuhao Mao
Key Laboratory for Ultrafine Materials of Ministry of Education, and Engineering Research Center for Biomedical Materials of Ministry of Education, School of Materials Science and Engineering, East China University of Science and Technology, China *Contacting Author:Changsheng Liu is with School ofMaterials Science and Engineering，East China University ofScience and Technology, China，(phone:86-21-64251308; fax: 86-21-64251358; email: chenfangping06@yahoo.com.cn).

BP409

Structure, Mechanical and Bioactive Behaviors of Polyamide 6/Hydroxyapatite Nanocomposites

Kai Li, Sie Chin Tjong
Department of Physics and Materials Science, City University of Hong Kong, Hong Kong, China. * Contacting Author: Prof. Tjong Sie Chin is with the Department of Physics&Materials Science, City University of Hong Kong; 83# Tat Chee Avenue, Kowloon, Hong Kong, China. (phone:+852 27887702; e-mail: aptjong@cityu.edu.hk)

BP410

Synthesis and Characterization of Magnetic MCM-48 and MCM-41 for Drug Targeting and Delivery

Shanshan Huang,[a] Piaoping Yang,[b] Yong Fan,a Ziyong Cheng,[a] Chunxia Li[a] and Jun Lin*

BP411

[a.] State Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry, 5625 Renmin Street, Changchun, China.[b.] College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, P. R. China (phone: +86 431-85262031; E-mail: jlin@ciac.jl.cn).

Synthesis of Fe_3O_4/Hesperetin Compound

Jih-Chao Yeh, Jhao-Ming Su, Shyh-Liang Lou
Department of Biomedical Engineering, Chung Yuan Christian University, Chung Li, Taiwan.

BP412

The Biocompatibility of the Temperature Sensitive pHsp-HSV-TK/As_2O_3 Magnetic Complex and Its Anti-tumor Effect on HepG2 cells

Jia Zhang[1, 2] Dongsheng Zhang[1, 2, *]
[1]School of Clinical Medical Science [2] School of Basic Medical Science * Correspond to: Dongsheng Zhang (corresponding author), male, professor, b7712900@ jlonline.com
Tel:86-25-83272502

BP413

The bio-labeled nanodiamond arrays on silicon templates for bio-sensing applications

Y.L. Liu and K.W. Sun*
Department of Applied Chemistry, National Chiao Tung University, Hsinchu, Taiwan *Email: kwsun@mail.nctu.edu.tw

BP414

The Molecular Mechanism of the Nature/Denature for Glucose Oxidase Adsorbed on SWCNTs

Yi-jian Ding[1], Feng Liu[2†] , Xue-song Ye[2*], Tao Zhou[2], Jun Liu[2], and Ling Xia[2]
[1]The 1st Affiliated Hospital of Medical Collage, Zhejiang University,Hangzhou, Zhejiang, China.
[2]The Department of Biomedical Engineering, Biosensors National Special Laboratory, Zhejiang University, HangZhou, Zhejiang, China. [†*]Corresponding Authors: Phone: +86-571-879-527-56; Fax: +86-571-879-516-76; e-mail: † bmilyf@gmail.com; * yexs@mail.bme.zju.edu.cn.

BP415

The Technology of Improving the Optical Property for the Zirconia Dental Ceramic

Li Jiang, Yunmao Liao, Wei Li*, Qianbing Wan, and Yongqi Zhao
State Key Laboratory of Oral Diseases, West China College of Stomatology, Sichuan University, Chengdu, China *Corresponding author: Prof. Wei Li Tel: -86-28-85501233 E-mail: weilisklod@yahoo.cn

BP416

Tissue Distribution of Intravenously Administrated Hydroxyapatite Nanoparticles Labeled with 125I

Jiao Sun*, Guangping Xie
Ninth People's Hospital, School of Medicine, Shanghai Jiaotong University / Shanghai Biomaterials Research & Testing Center, Shanghai ,China * Corresponding author: E-mail: jiaosun59@yahoo.com .Address: No.716, Xie-tu Road, Shanghai 200023, P.R. China. Phone: 0086-21-63034903 Fax: 0086-21-63011643

BP417

Analysis on Nano Biomedical Components of Acetic Ether Extractives of Cunninghamia lanceolata Biology by Py-GC/MS

MA Qing-zhi, ZHANG Zhong-feng, PENG Wan-xi, WU Yi-qiang, ZHANG Xu, QI Hong-chen
Central South University of Forestry and Technology, City Changsha, P.R. China

BP418

Electrochemical impedance sensor for Levobupivacaine using Conducting Polypyrrole doped with SWCNTs as sensing material

Ren-Jang Wu*[,a], Te-Chin Tsai[a], Hsiang-Ning Luk[b], Murthy Chavali[c]
[a]. Department of Applied Chemistry, Providence University [b]. Department of Anesthesia, Taichung Veterans General Hospital [c.] Department of Applied Chemistry, VIT University

BP419

Crosslink Poly(ethylenimine) with α,ω-Dicarboxylic Acid for Plasmid DNA Delivery

Leo K. S. Siu*, Z. H. Xu, Samuel S. M. Ng and M. C. M. Lin
Department of Chemistry, The University of Hong Kong, Hong Kong, China *Contacting Author: Leo K. S. Siu is with Department of Chemistry, The University of Hong Kong, Hong Kong, China (tel. +852 2299 0772) email: leosiu81@hotmail.com)

BP420

Effect of Collagen Treatment on the Biocompatibility of β –Ti-14Mo-3Nb-3Al-0.2Si alloy

Jun-Young Song and Tae-Ho Kim and Sun Ig Hong*
Department of Advanced Materials Engineering,Chungnam National University, Daejeon, Korea

BP421

Nano-Structured Titanium Coating for Improving Its Biological Performance

Youtao Xie[a, b*], Fei Yang[c, d], Kerong Dai[c, d], Xuebin Zheng[a, b*], Chuanxian Ding[a, b]
[a]Key Laboratory of Inorganic Coating Materials, Chinese Academy of Sciences, 1295 Dingxi Road, Shanghai 200050, People's Republic of China [b]Shanghai Institute of Ceramics, Chinese Academy of Sciences, 1295 Dingxi Road, Shanghai 200050, People's Republic of China [c]Department of Orthopaedics, Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, 639 Zhizaoju Road, Shanghai 200011, People's Republic of China [d]Orthopaedic Cellular & Molecular Biology Laboratory, Institute of Health Sciences, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences & Shanghai Jiao Tong University School of Medicine, 225 South Chongqing Road, Shanghai 200025, People's Republic of China *Corresponding authors: Youtao Xie (Tel.: +862152414102; Fax: +862152414104; E-mail address: xieyoutao@mail.sic.ac.cn); Xuebin Zheng (Tel.: +862152414104; Fax: +862152414104; E-mail address: xbzheng@mail.sic.ac.cn)

BP422

Preliminary Study of Biological Evaluation on Hydroxyapatite Nanoparticles

Huangzhe Wei[1], Tingting Ding[1], Jiao Sun[2] and Dongjing Xu[3]
Shanghai Ninth People's Hospital, School of Medicine, Shanghai Jiaotong University, Shanghai Biomaterials Research & Testing Center, Shanghai , China. *Contacting Author:jiaosun59@yahoo.com

BP423

Immobilization of Layered double Hydroxides in the Fluidic System for Nanoextraction of Specific DNA Molecules

Jem-Kun Chen[1*], Chia-Hao Chan[2], Feng-Chih Chang[2]
[1]Department of Polymer Engineering, National Taiwan University of Science and Technology, 43, Sec 4, Keelung Rd, Taipei, 106, Taiwan, R.O.C.[2] Institute of Applied Chemistry, National Chiao-Tung University, Hsinchu, Taiwan, 30043, R.O.C. *Contacting Author: Jem-Kun Chen(e-mail: jkchen@mail.ntust.edu.tw. tel:+886-2-27376523, fax:+886-2-27376544).

BP424

The Milling Procedure Influences of a CAD-CAM Zirconia Framework

Yongqi Zhao,Wei Li,Yunmao Liao,Li Jiang,Yu Feng
State Key Laboratory of Oral Diseases,Sichuan University,Chengdu,China (phone:+86-28-85501233; email:hxkqzyq@163.com)

BP425

Fabrication of Nanoporous Surface on Biomedical NiTi Alloy by Surface Dealloying of Ni

Yunchang Xin *
School of Materials Science and Engineering, Chongqing University, Chongqing 400030, China Corresponding author: Yunchang Xin is with School of Materials Science and Engineering, Chongqing University, Chongqing 400030, China (Phone:086-2365112205; e-mail: xyc05@mails.tsinghua.edu.cn)

BP426

Addition of PEG and the Effect on Carbonated Nano-Hydroxyapatite Synthesis

HuaiF Zhang, Zhe Wang, Youliang Hong, Zhanwen Xiao, Hongsong Fan*, Xingdong Zhang

BP427

National Engineering Research Center for Biomaterials, Sichuan University, 29# Wangjiang Rd., Chengdu, China. *Contacting Author: Hongsong Fan (email: hsfan@scu.edu.cn).

Effect of Sintering Temperature on Microscopic and Mechanical Properties of 3Y-TZP Dental Ceramic

Jingchao Zhang, Yunmao Liao, Wei Li*, Anchun Mo
State Key Laboratory of Oral Diseases, Sichuan University, Chengdu, China (phone. -86-28-85503494; email: leewei2000@sina.com)

BP428

Possible role of p21 and Hus1 in carbon nanotube induced genotoxicity

Liping Tong[1], WenWen Zhang[1], Haiying Hang[2], Lijun Wu[1] and An Xu[1,*]
[1]Key Laboratory of Ion Beam Bioengineering, Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui, P.R. China; [2]Institute of Biophysics, Chinese Academy of Sciences, Beijing, China * Corresponding author at: Key Laboratory of Ion Beam Bioengineering Insititute of Plasma Physics,Chinese Academy of Sciences P.O.Box 1126, Hefei, Anhui 230031,PRC Tel.: +865515593336; Fax: +865515591310email: anxu@ipp.ac.cn

BP429

Minocycline Nano-liposome Inhibit the Production of TNF-α in LPS-stimulated Macrophages

Di Liu, Deyu Hu, Xue Li *, and He Ma
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BP430

Preparation and Characterization of a Functional Magnetic Fluid

Y.M.Wang[1], J. H. Li [2], R. Y. Hong [1,3,*], H. Z. Li [3], Y. Zheng [4]
[1] Chem. Eng. Dept. & Key Lab. of Organic Synthesis of Jiangsu Prov., Soochow Univ., SIP, Suzhou 215123, China [2] Tangshan Zhongrun Coal Chemical Company Limited, Seaport Economic Development Zone, Tangshan 063611, China [3] State Key Lab. of Multiphase Reaction, Inst. of Proc. Eng., Chinese Academy of Sciences, Beijing 100080, China [4] Dept. of Chem. Eng., Univ. of New Brunswick, Fredericton, N.B., E3B 5A3, Canada *Contacting Author: R. Y. Hong is with Chem. Eng. Dept. Soochow Univ. Suzhou, SIP, 215123 China (phone: -86-512-66000797; email: rhong@suda.edu.cn).

BP431

Preparation of Dextran-coated Magnetic Nanoparticles and Applications in Hyperthermia

G. Liu1, R.Y. Hong1, 2,*, B. Feng[1]
1 College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou 215123, China 2 State Key Laboratory of Multiphase Reaction, Institute of Process Engineering, Chinese Academy of Sciences, Beijing 100080, China

BP432

A Disposable Polydimethylsiloxane (PDMS) Microdevices for DNA Amplification with Low Power Consumption

A. Lekwichai[1]*, S. Porntheeraphat[2,4], W. Bunjongpru[1,2,4], J. Supadech[2], W. Sripumkhai[1], S. Rahong[3,4], C. Hruanun[2], A.Poyai[2], AND J. Nukeaw[1,4]
[1]College of KMITL Nanotechnology, King Mongkut's Institute of Technology Ladkrabang, Chalongkrung Rd., Ladkrabang, Bangkok 10520, Thailand [2]Thai Microelectronics Center, National Electronics and Computer Technology Center, Prathumthani, Thailand [3]National Nanotechnology Center (NANOTEC), National Science and Technology Development Agency,111 Thailand Science Park, Phahon Yothin Road, Klong 1, Klong Luang,Pathumthani, 12120 Thailand [4]ThEP Center, CHE, 328 Si Ayutthaya Rd., Bangkok 10400, Thailand *E-mail : amornratlek@moj.go.th

BP433

Nanophysics Oral Session

LT-12

Chair: Tsu-Yi FU, National Taiwan Normal University

8:30 **Thermionic and Field Electron Emission Devices from Diamond and Carbon Nanostructures**
Robert J. Nemanich, Griff L. Bilbro, , Eugene N. Bryan, Franz A. Koeck, Joshua R. Smith, Yingjie Tang
Arizona State University, Tempe AZ; North Carolina State University, Raleigh, NC 27695-8202. E-mail: robert.nemanich@asu.edu
KS410

9:00 **Adaptive OFDM Modulation Techniques Over Fading Channel for Wireless Communication Systems with an 80 MHz Bandwidth**
Donekeo LAKANCHANH[1], Suthichai NOPPANAKEEPONG[1], Shingo Yoshizawa[2] and Yoshikazu Miyanaga[2]
[1]Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang,Chalongkrung Road, Ladkrabang, Postal Code 10520, Bangkok,Thailand E-mail: s0060027@kmitl.ac.th, suthi@kmitl.ac.th,Tel: +66-2-326-4238.[2]Graduate School of Information Science and Technology, Hokkaido University Hokkaido University, Sapporo-shi, 060-0814 Japan.
TC401

9:15 **Analysis of AC Electric Induced Fluid Flow in Point-Plane Electrode Microsystem**
Yukun Ren, Hongyuan Jiang, Shanshan Li and Ye Tao
Department of Mechanical Design, School of Mechatronics Engineering, Harbin Institute of Technology, Harbin, China.
TC402

9:30 **Analysis of Governing Error in Active Vibration Isolation**
Tao Zhang[1,2,3], Fang Liu[1,2], Hongbiao Huang[1], Jianqiang Zhu[1]
[1] Joint Laboratory for High Power Laser Physics, Shanghai Institute of Optical and Fine Mechanics, CAS.[2] Graduate University of Chinese Academy of Science.[3] Contacting Author: P.O.Box. 800-211, shanghai, 201800, PRC
TC403

9:45 **Throughput Optimization for Interleaved Repeater-Inserted Interconnects in VLSI Design**
Mahmoud Zangeneh,
Advanced VLSI Lab, School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran (e-mail:m.zangene@ece.ut.ac.ir; nmasoumi@ut.ac.ir).
TC404

10:00 Break

Chair: Xiuxia ZHANG, Xi'an Jiaotong University

Chuan YANG, Xi'an Jiaotong University

10:15 **Effect of Two -Dimensional Fractal Rough Surface on the Waveguide Power dissipation**
Na Li*
Research Institute on Mechatronics, Xidian University, Xi'an 710071, China *Contacting Author: lina@mail.xidian.edu.cn
TC405

10:30 **Experiments and Simulation of Electron Emission Form Screen printed Nanostructure ZnO film**
Zhang Xiuxia[12], Wei Shuyi[3], Lu Bingheng[2], Zhu Changchun [2]
（[1] School of Mechanical Engineering, Xi'an Jiaotong university, China 710049）（[2] School of Electronics and Information Engineering, North national university, Yinchuan 750021）（[3] Graduate School of the Chinese Academy of Sciences, Beijing 100049
*Contacting Author: xxuazh@yahoo.com.cn
TC406

10:45 **A New Circuit Model of Multi-Quantum Well Vertical-Cavity Surface-Emitting Lasers**
Chang Qi, Xinzhi Shi, Gaofeng Wang，Jicheng Hu
Chang Qi, Xinzhi Shi, Gaofeng Wang Inst. of Microelectronics and Information Technology Wuhan University Wuhan, China State Key Lab of Softeware Engineering Wuhan University Wuhan China
TC407

11:00 **Size Effects of Microstructure during Plasma Immersion Ion Implantation**
Chunzhi Gong, Zhijian Wang, Xiubo Tian*, Shiqin Yang
State Key Laboratory of Advanced Welding Production and Technology, School of Materials Science and Engineering, Harbin Institute of Technology, Harbin 150001, China
*Contacting Author:xiubotian@163.com
TC408

11:15 **Scientific Arguments Upon Patent Litigation**
Mei-Hsin Wang,* Fu-Tsung Wang
*Graduate School of Materials Science, National Yunlin University of Science & Technology
Graduate School of Finance & Law, South Taiwan University of Science & Technology
Maywang3@yuntech.edu.tw
TC409

11:30 **Orientation Controlment of Disperse Red 1 Molecules in Matrix of Zeolite Crystals**
Irene Ling Li*, Ling Fu, Hui Zhen Wang, Jian Pang Zhai, Jing Zhen Huang, Shuang Chen Ruan, and Zi Kang Tang
[1] Shenzhen Key Lab of Laser Engineering, College of Electronic Science and Technology, Shenzhen University, Guangdong, China. [2] Department of Physics, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong * Contacting author: Irene Ling Li is with College of Electronic Science and Technology, Shenzhen University, Guangdong, China. (phone:+86-755-26558252; email:phyirene@163.com)
TC410

11:45 **ZnO/Al_2O_3 Core-Shell Nanorod Arrays: Growth, Structural Characterization, and Luminescent Property**
C. Y. Chen[1], C. A. Lin[1], M. J. Chen[2], G. R. Lin[1], and J. H. He[1*]
[1]Institute of Photonics and Optoelectronics, and Department of Electrical Engineering, National Taiwan University, Taipei, 106 Taiwan (ROC) [2]Department of Materials Science and Engineering, National Taiwan University, Taipei, 10617 Taiwan
TC411

12:00 **Deformation Behaviour of Nanocrystalline Mg-Al Alloys during Nanoindentation**
Hui Diao[1], Cheng Yan[1*], John Bell[1], Li Lu[2], Shengtao Deng[3], Haifeng Zhang[3] and Guangping Zhang[3]
[1] School of Engineering Systems, Faculty of Built Environment and Engineering, Queensland University of Technology, Brisbane, QLD 4001, Australia [2] Department of Mechanical Engineering, National University of Singapore, Singapore 3Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, 72 Wenhua Road, Shenyang 110016, China
TC412

12:15 **Maleic Anhydride-terminated Fluorinated Polyimides with Changeable Refractive Indices**
Dongdong Luo, Zhibao Qing, Aiqing Zhang*,Hanfan Liu
Key Laboratory of Catalysis and Materials Science of the State Ethnic Affairs Commission & Ministry of Education, Hubei Province, South-Central University for Nationalities, Wuhan 430074, P.R. China aizhang@scuec.edu.cn
TC413

12:30 Lunch

14:00 Poster Session

Nanophysics Poster Session II

ATRIUM

14:00

Meander structure GMI-based sensor fabricated by MEMS technology
Lei Chen, Yong Zhou*, Chong Lei and Zhi-Min Zhou
Institute of Micro/Nano Science and Technology, Shanghai Jiao Tong University Contacting Author: Yong Zhou Telephone: +86-21-34204312 E-mail: leon_chen@sjtu.edu.cn
TP401

Intrinsic Kinetics of Polycondensation reaction for Bisphenol A Polycarbonate in Supercritical CO_2
Xiao Yang* Aiqing Zhang
Key Laboratory of Catalysis and Material Science of the State Ethnic Affairs Commission & Ministry of Education, South-Central University for Nationalities, Wuhan 430074, Hubei, China E-mail:xiaoyang@mail.scuec.edu.cn
TP402

Patterned Co/Pd Multilayer Structure for High-density Magnetic Recording Media
Hyunsu Kim[1], Sungman Kim[2], Jong Wook Roh[1], Dong Won Chun[2], Won Yong Jeung[2] and Wooyoung Lee[1]*
[1]Department of Materials Science and Engineering, Yonsei University,Shinchon Dong, Seodaemun Gu, Seoul 120-749, Korea [2]Korea Institute of Science and Technology (KIST), 39-1 Haweolgog-dong,Seongbuk-gu, Seoul 136-761, Republic of Korea *E-mail: wooyoung@yonsei.ac.kr (Wooyoung Lee). Telephone: +82-2-2123-2834
TP403

Photoluminescence and Energy Transfer Studies of Er^{3+} and Dy^{3+} Co-doped Tellurite Glasses
Feng Zhang, Zhisong Xiao*, Lu Yan, Fang Zhu, Anping Huang
Beihang University
TP404

Quasicrystal Phase in a Zr-based Glass Forming Alloy Induced by Oxygen
Ji Liang Zhang[1], Ying Min Wang[2], Jun Xia Lu[1], Chan Hung Shek[1*]
[1]Department of Physics and Materials Science, City University of Hong Kong,Hong Kong, P.R. China [2]School of Materials Science and Engineering, Dalian University of Technology, Dalian, P.R. China *Contacting Author: Chan Hung Shek is with Department of Physics and Materials Science, City University of Hong Kong (phone: 852-27887798, email: apchshek@cityu.edu.hk)
TP405

Quick Characterization of Layer Thickness of 4H-SiC Homo-epilayers based on Linear Fitting Model
Li Zhi-Yun*, Zhang Yu-Ming, Zhang Yi-Men, and Tang Xiao-Yan
School of Microelectronics, Xidian University, Key Laboratory of Wide Band-Gap Semiconductor Materials and Devices, Xi'an 710071, China Email: moyu164@yahoo.com.cn
TP406

Research and Applications of some newly Piezoelectric Ceramics
Li Quanlu, Li Yuan and Huang Zhaohui
[1]Institute of Applied Acoustics, School of Physics and Information Technology, Shaanxi Normal University, Xi'an, 710062, the People's Republic of China [2]Department of High Altitude Military Medicine, the Third Military Medical University, Sha ping-ba District, Chongqing municipality 400038, China
TP407

Reversibly Surface Tackiness Switchable between Two Superhydrophobic States
Lan Zhou
Ningbo Institute of Material Technology and Engineering (NIMTE), Chinese Academy of Sciences
TP408

Structure Design On NEMS TiN Resonant Pressure Sensors
Chuan Yang Can Guo Xiaowei Yuan
State key laboratory of Mechanical Manufacturing systems, Xi'an , Shanxi and the department of mechanical engineering in Xi'an JiaoTong University. Xi'an China.(phone:029-82668616-149;
TP409

email: guocan5085@126.com or yangchuan@mail.xjtu.edu.cn)

Study on Photocatalytic Degradation of 4-Bromodiphenyl Ether Using TiO_2/MWCNTs Composites

Liang Tang, Minghong Wu*, Gang Xu, Wenjing Wu, and Wenyan Shi
Shanghai Applied Radiation Institute, Shanghai University, Shanghai 200444, P.R.China *
Corresponding author. E-mail address: mhwu@staff.shu.edu.cn

TP410

Study on the Technological Conditions of Nanoscale Silver Palmitate

Yaling Li[1*], Shui Wang[2], Xiaoling Yang[1] and Xu Zhang[1]
[1.] Beijing Key Laboratory of Printing & Packaging Materials and Technology, Beijing Institute of Graphic Communication, Beijing 102600, P.R China [2.] College of Chemical Engineering, Beijing University of chemical and Technology, Beijing 100029, P.R. China *Contacting Author: (phone: +86-10-60261108; email: liyaling@bigc.edu.cn).

TP411

Synthesis and Characterization of Semiconductive In_2O_3 Hollow Particles

Tzu-Tsung Tseng and Wenjea J. Tseng*
[1]Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan. *Contacting Author: Wenjea J. Tseng is with the Department of Materials Science and Engineering, National Chung Hsing University, Taichung 402, Taiwan. (phone: +886-4-2284-0500 502; e-mail: wenjea@dragon.nchu.edu.tw)

TP412

Synthesis of Vanadium-doped TiO_2 Hollow Spheres as Efficient Visible-Light-Responsive Photocatalysts

Jingbing Liu*, Lin Chang, and Jinshu Wang
College of Materials Science and Engineering,Beijing University of Technology, Beijing 100124, China *Contacting Author: Jingbing Liu is with the College of Materials Science and Engineering, Beijing University of Technology, Beijing 100124, China. (phone: +86 10-67391137; email: liujingbing@bjut.edu.cn)

TP413

The effect of nano-TiO_2 addition on Portland cement properties

Thanongsak Nochaiya and Arnon Chaipanich*
Cement and Concrete Research Laboratory,Department of Physics and Materials Science, Faculty of Science,Chiang Mai University, Chiang Mai, Thailand, 50200 (email: arnon@chiangmai.ac.th)

TP414

Two-dimensional Inductively Coupled Argon Plasma Simulations with Experiment

Wen F Zhao 1， 2, Jun F Chen 1,*, Tie M Zhang2 ,R Meng 1,H WANG1, Y WANG1
1. School of Physics and Telecommunication Engineering, Laboratory of Quantum Information Technology, South China Normal University, Guangzhou, China, 510006, People's Republic of China2. College of Engineering, south china agricultural university, Guangzhou, 510642, People's Republic of China ＊ Contacting Author. Tel./fax: +86-20-85214371. E-mail address: chenjf@scnu.edu.cn (CHEN Jun-fang).

TP415

Long-range Electronic Correlation Studies for Organic Electronic And Inorganic Electronic Systems

Hua Zhao
Department of Physics and Institute for Condensed Matter Physics,ChongQing University,400044, ChongQing,P.R.China

TP416

Effects of current density on coating kinetic and micro-structure of microarc oxidation coatings fabricated on pure aluminum

Xin-Meng Zhang, Xiu-Bo Tian*, Chun-Zhi Gong and Shi-Qin Yang
School of Materials Science & Engineering, Harbin Institute of Technology, Harbin 150001, China
Corresponding author. Tel: +86 451 86418791; E-mail address: Xiubotian@163.com (Tian Xiu-bo)

TP417

Friday - Jan 8, 2010

09:30-10:30
Lab Tour Team A

10:30-11:30
Lab Tour Team B

Raith Nano Fabrication Workshop

Objective

Current and future nanofabrication challenges require controlled and reproducible fabrication of nano-structured materials. The increasing demand for ever-smaller feature sizes and reliable fabrication processes for the semiconductor, telecommunications and biomedical R&D sectors are driving the development of innovative manufacturing concepts.

Electron and ion beam lithography, are key cornerstone technologies to help realize complex 1D - to 3D nanostructures, with high resolution which can be gainfully combined with bottom-up methods for novel engineering and characterization techniques.

The development of effective nanofabrication tools and processes are seen as the path to future advancement of nano-metric components and devices, thus enabling novel breakthroughs in inventive R&D projects.

The aim of the workshop is to identify how pioneering nanofabrication schemes enable innovative R&D projects. The workshop will be held parallel with the conference and all are welcomed to attend the work-shop.

Presentation Schedule

The workshop will be held on 5th January 2010 (Tuesday) starting from 2 pm to 3 pm. `Venue:LT17`

2.00 – 2.20 **Complex Self-Assembled Structures Guided by Sparse Physical Nanotemplates**
Professor Karl K. Berggren
Department of Electrical Engineering and Computer Science, Research Laboratory of Electronics, Massachusetts Institute of Technology

2.20 – 2.40 **Fabrication of opto-electronic nanodevices with Electron Beam Lithography**
Prof. Fuhua Yang
Director of Engineering Research Center for Semiconductor Integrated Technology, Institute of Semiconductors, CAS, Beijing

2.40 – 3.00 **Innovative nanofabrication scheme for high-performance devices with zero stitching error**
Andre Linden, Raith Asia Ltd.

Contact

Raith Asia Ltd.
Two Chinachem Exchange Square
No. 338 King's Road, North Point
Hong Kong

Andre Linden
Phone: +852 2887 6828
e-mail: linden@raithasia.com.hk

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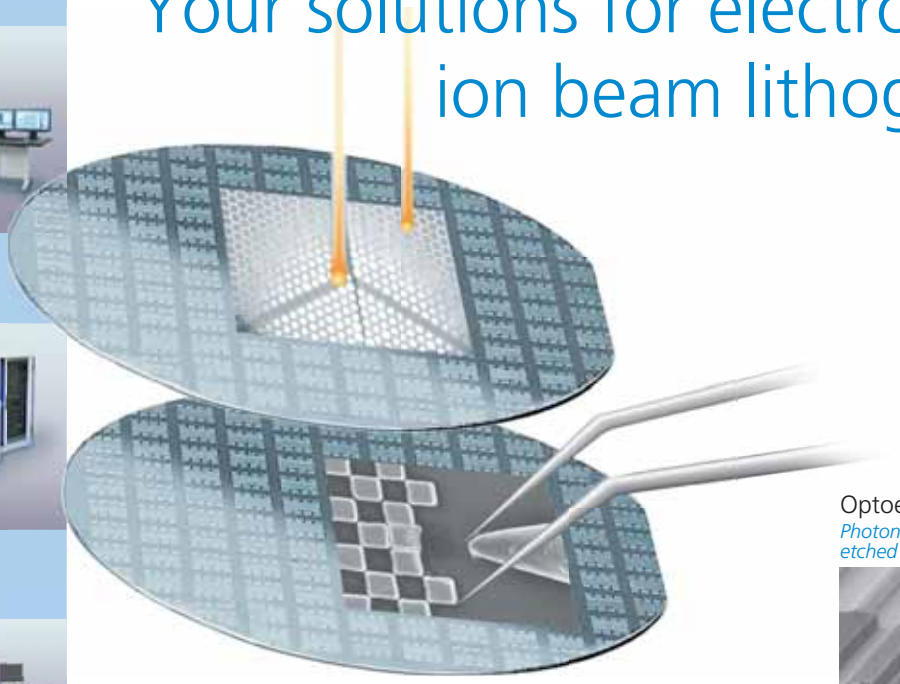
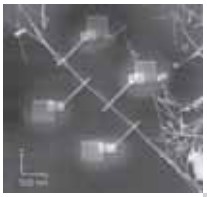


Materials Science

Wiring of CNTs on SiO_2-sample



S. Bauerdick, Raith GmbH

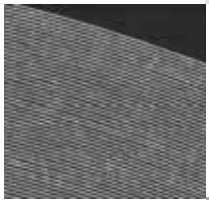
MEMS / Nano-Biotechnolgy

Micro gear pump

S. Neale, University of St Andrews, Scotland

MOEMS/NOEMS

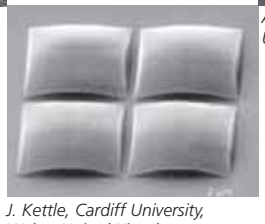
State-of-the-art fresnel zone plate after gold electroplating



M. Aktary, Applied Nano-tools Inc., Canada

3D-Litho

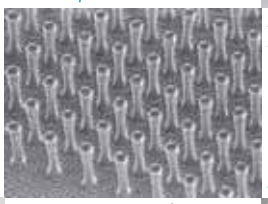
Imprint lithography (S-FIL) of a „motheye" lens (FIB)



J. Kettle, Cardiff University, Wales, United Kingdom

Materials Science

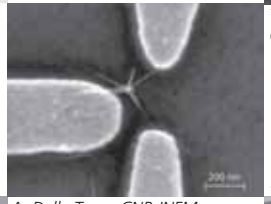
Gecko tape



A. Geim, University of Manchester, Great Britain

Physics

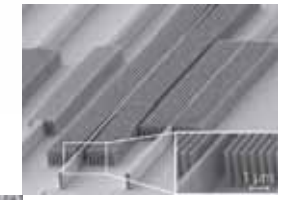
A single tetrapod-shaped nanocrystal contacted respectively by two and three metal nanoelectrodes



A. Della Torre, CNR-INFM, University of Lecce, Italy

Optoelectronics

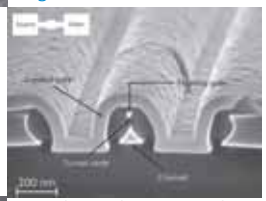
Photonic crystal pillars etched into InP substrate



B. Docter et al., COBRA / TU Eindhoven, The Netherlandds

Electrical Engineering

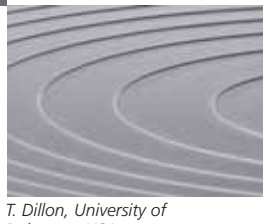
Single-electron device



T. Xiaohui et al., University de Catholique de Louvain, Belgium

3D-Litho

Fresnel zone lens



T. Dillon, University of Delaware, USA

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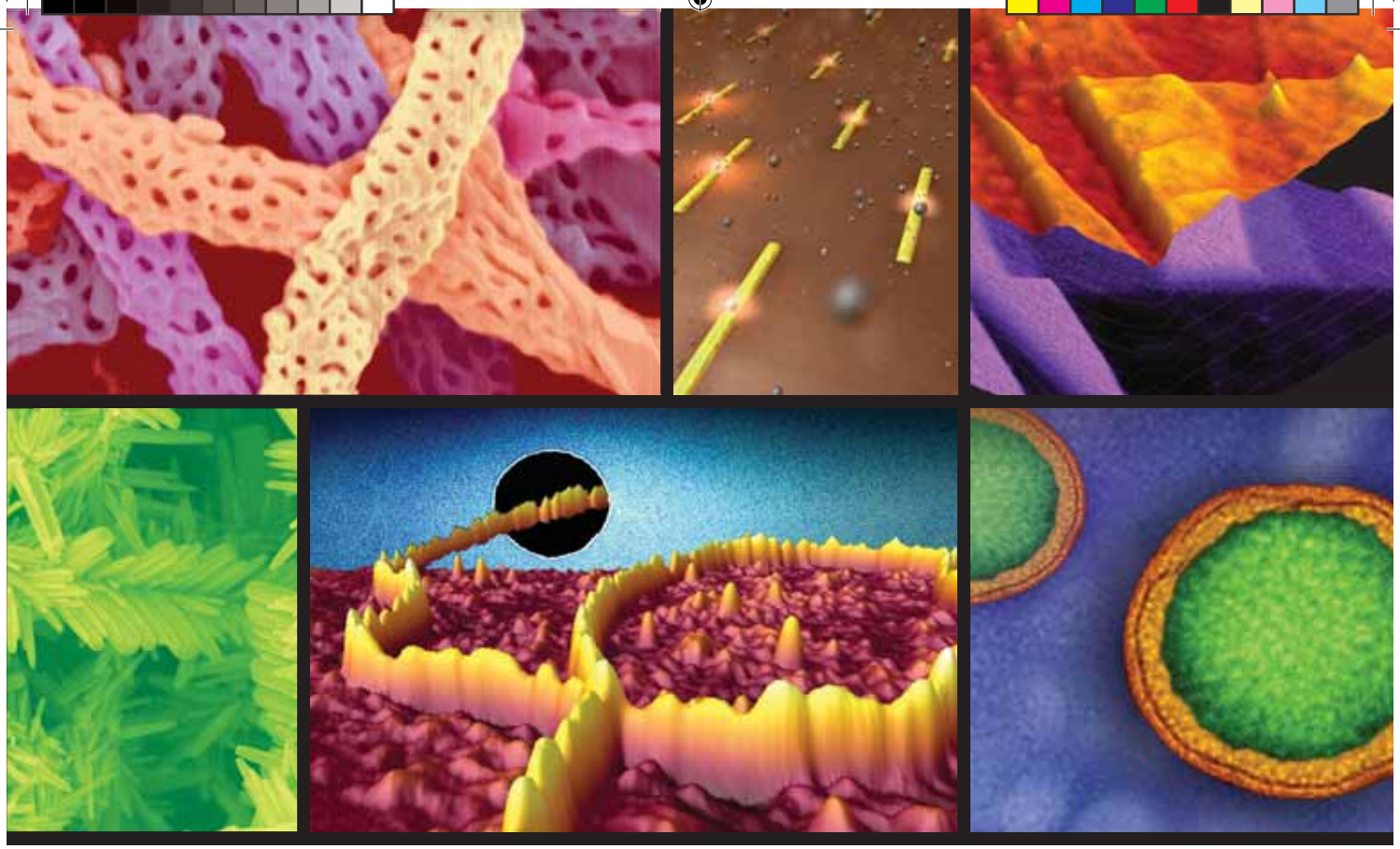

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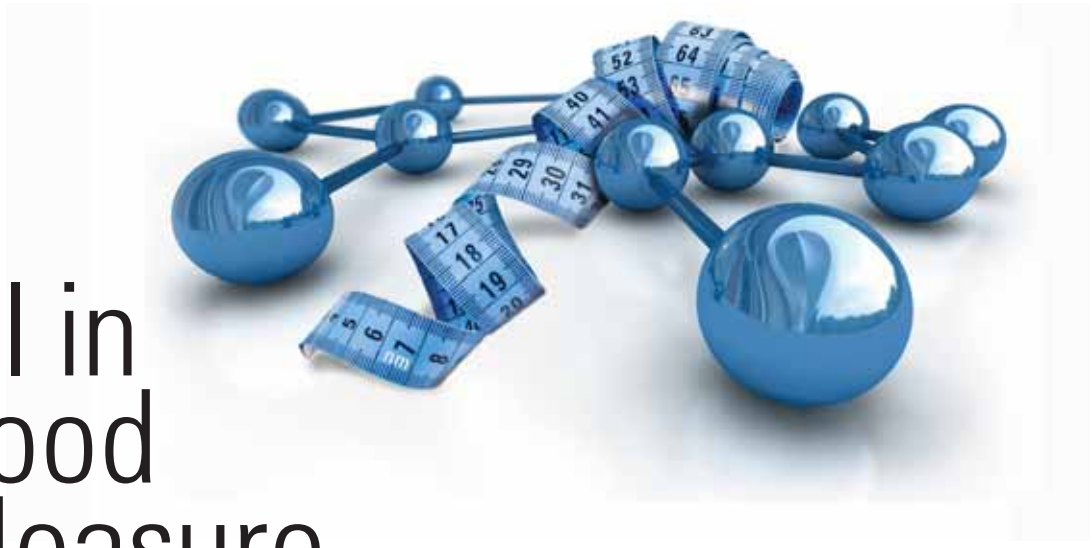
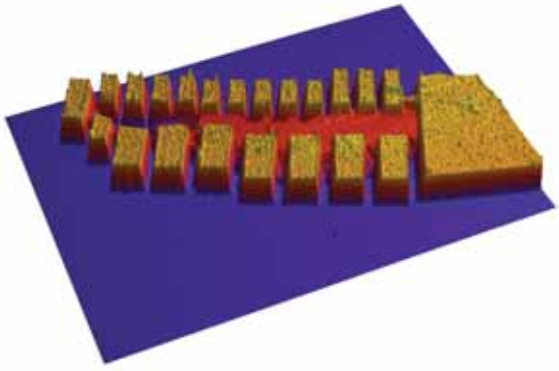


All in Good Measure



Graphene layer (red) suspended between gold contacts. Left end of graphene has collapsed.

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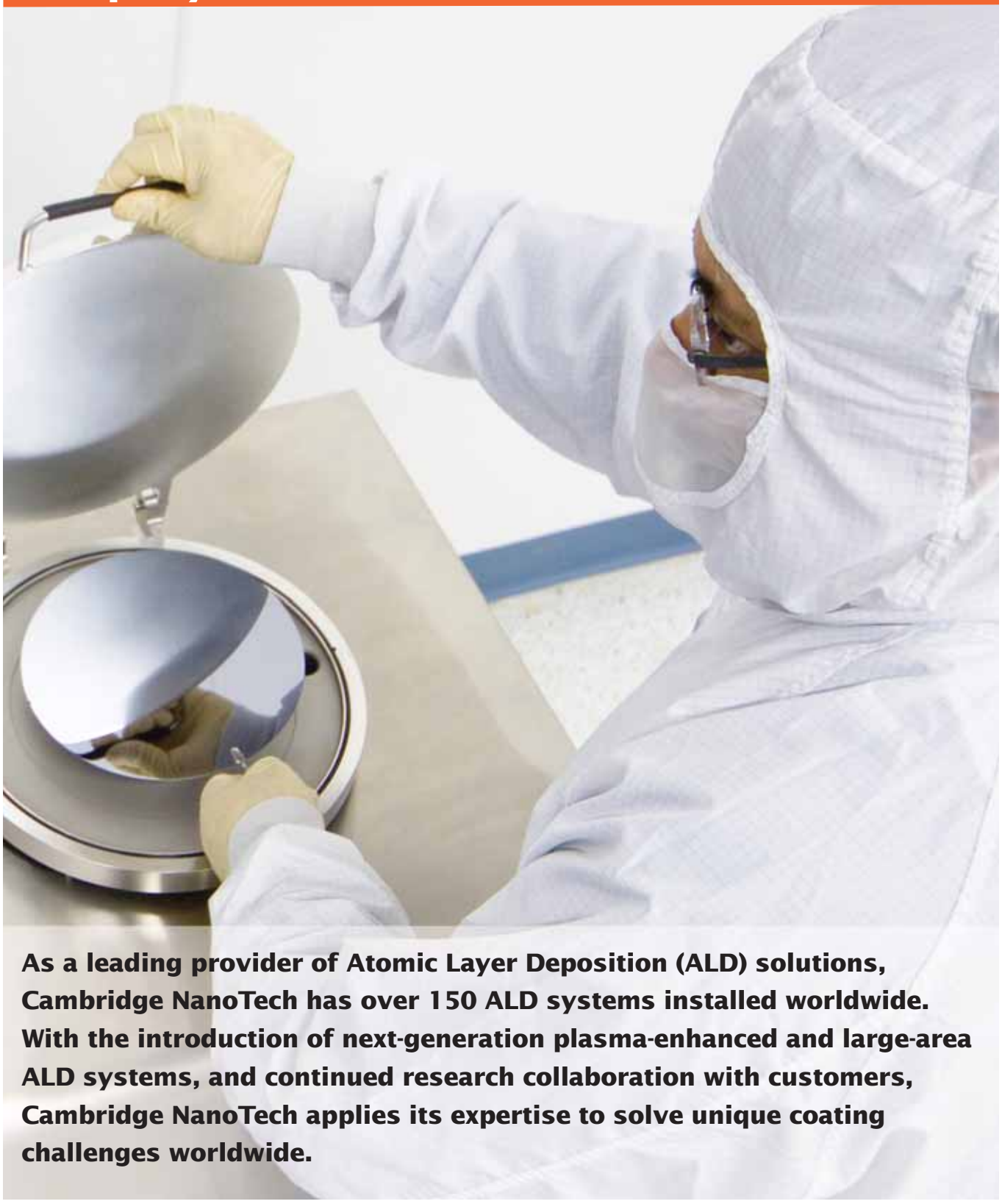

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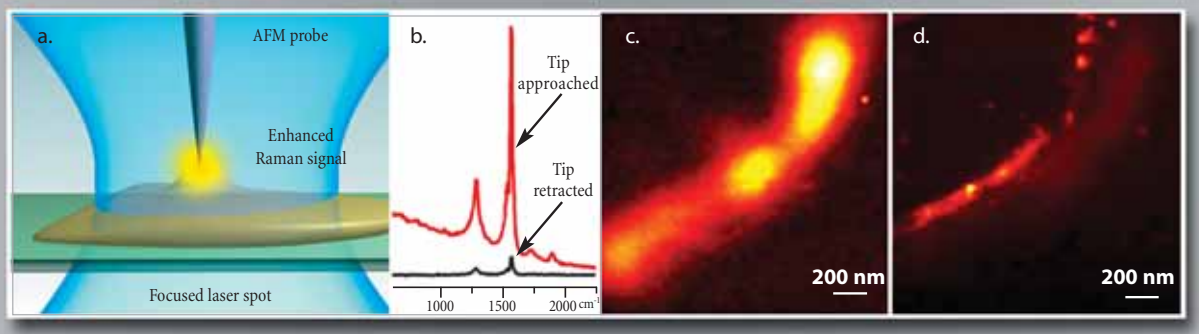
NTEGRA Spectra



a — a specially prepared AFM probe (metal coated cantilever or etched metal wire) is precisely positioned inside a tightly focused laser spot. b — intensity of carbon nanotube G- and D- Raman bands increases by several orders of magnitude when the special AFM probe is landed and positioned over a small (5 nm height) nanotube bundle - the effect of Tip enhanced Raman scattering (TERS). c — "conventional" confocal Raman image of the nanotube bundle, the observed width of the bundle is ~250 nm (diffraction limit of confocal microscopy, laser wavelength — 633 nm). d — TERS image of the same bundle — now the observed width is ~70 nm.
Note, in this example, TERS provides more than 4-times better spatial resolution as compared to confocal microscopy. Resolution down to 10 nm and less is theoretically possible. Measurements are done with NTEGRA Spectra in Inverted configuration.
Data courtesy of Dr. S. Kharintsev, Dr. J. Loos, Dr. G. Hoffmann, Prof. G. de With, TUE, the Netherlands and Dr. P. Dorozhkin, NT-MDT Co.

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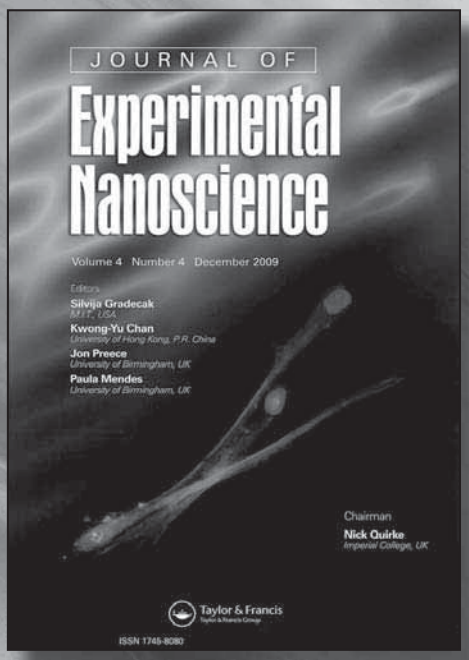

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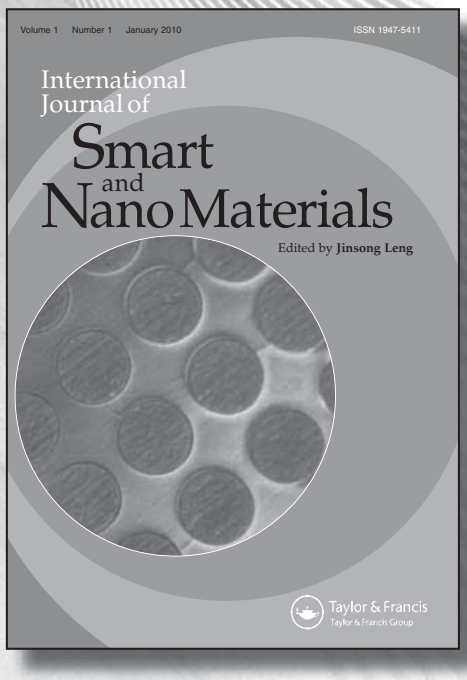

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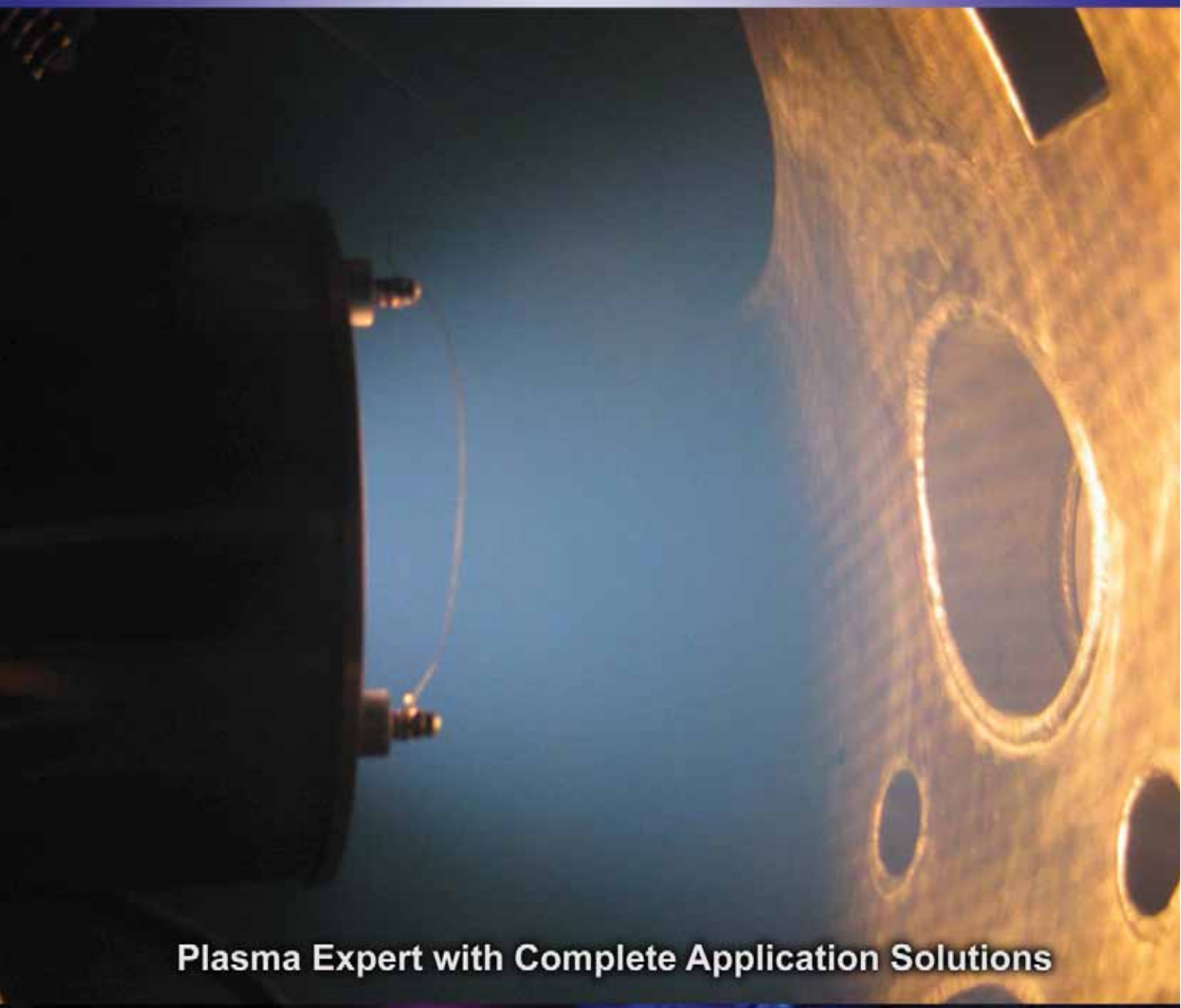

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