Department of Biomedical Sciences
香港城市大學
City University of Hong Kong

Department of Biomedical Engineering
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DEPARTMENT OF BIOMEDICAL SCIENCES
&
DEPARTMENT OF BIOMEDICAL ENGINEERING
PRESENT A SEMINAR

Revealing Mechanisms of Ice Formation for Biological Applications

Prof. Jianjun Wang 王健君
Technical Institute of Physics and Chemistry, CAS

DATE: 2 August 2024 (Friday)
TIME: 14:30 - 16:00
VENUE: LT-12 Mr & Mrs Ho Chun Hung Lecture Theatre, Yeung Kin Man Acad Building.

Abstract
Although ice is ubiquitous and affects greatly on our daily life, our understanding of the mechanisms of ice formation is rather poor. In this talk, I will discuss recent progresses on the mechanisms of ice nucleation and growth, e.g., experimentally probing the critical nucleus size of ice, which has previously only been explored theoretically and through simulations due to the transient and nanoscale nature. Profound understanding of the ice formation mechanism guides the construction of various functional materials including bio-compatible ice controlling materials for the cryopreservation of cells and tissues, avoiding the using of dimethyl sulfoxide widely employed in the commercial cryoprotectants; as well as the preparation of sub-5 nm fluorescent polymer nanodots for super-resolution bio-imaging.

Biography
Jianjun Wang undertakes the Distinct Young Scholar Project of NSFC. He obtained his Ph.D degree at Max-Planck Institute for Polymer Research and University of Mainz (Germany) in 2006. After the postdoctoral research, he became a project leader at Max-Planck Institute for Polymer Research in 2007. Currently, he is a professor at Technical Institute of Physics and Chemistry, Chinese Academic of Sciences. His current research is focused on the molecular level understanding of ice formation and its applications such as cryopreservation of cells, organs and tissues, and anti-icing coatings with ultra-low ice adhesion; and he has papers published in peer review journals, such as Nature, Nature Materials, PNAS, and Science Advances. In 2022, He was awarded the first prize in natural science by the Beijing Municipal Government. He is a recipient of the 2022 CCF Award for Overseas Outstanding Contribution. Prof. Dr. Wang is Advisory Board member of many research centers and journals such as research center of molecular science of Chinese Academy of sciences, water: ice interface augmentation center of Korea University as well as Chines Journal of Polymer Science.

All are Welcome!

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