

CityU robotics and biomedical engineer elected Fellow of Canadian Academy of Engineering

Professor Sun Dong, Chair Professor and Head of the Department of Biomedical Engineering at **City University of Hong Kong (CityU)**, has been elected Fellow of the Canadian Academy of Engineering (CAE) for his outstanding achievements in robotics and biomedical engineering.

Sun, concurrently the director of **CityU**'s Centre for Robotics and Automation, has made ground-breaking advances in precision medicine using technologies that he invented such as microrobots and robot-aided automated micro processing for cell therapy.

"I'm deeply honored at being elected Fellow of CAE," he said. "I'm grateful to **CityU** for its support over the past 20 years. This platform has enabled me to contribute to robotics and biomedical engineering."

He would use his experience to encourage more **CityU** young scientists to persevere on research breakthroughs, he said.

Sun and his research team have developed the world's first magnetic 3D-printed microscopic robot capable of carrying stem cells into the body to repair damaged tissue or treat tumors. The technology offers an alternative to invasive surgery, a means of reducing side effects caused by drugs and a way of tackling drug resistance issues.

"This invention could revolutionise regenerative medicine by offering more precise treatment for diseases," he said, adding that the research outcomes have been published in the top academic journal Science Robotics.

The professor, who joined **CityU** in 2000, holds the philosophy that "any outstanding engineering research must prove its application value". Thus he set up DynaCity Technology (HK) Limited at the Hong Kong Science Park to facilitate knowledge transfer. The company's patented invention of a P-beam sensor is used for the e-channel auto-pass systems at Hong Kong's boundary-crossing facilities. The sensor can detect a passenger passing the e-channel and enable the system to control the opening and closing of the channel's gate.

For his contributions, Sun was presented with the Hong Kong Awards for Industries in 2003 and 2012, respectively.

Over the past 20 years, Sun has focused his research on robotics and biomedical engineering and successfully developed projects such as robot-aided automated processes for cell manipulation, diagnosis and micro-surgery at the single cell level.

Sun held an Adjunct Professorship in the Department of Mechanical and Industrial Engineering at the University of Toronto from 2007 to 2016 and has nurtured research students and promoted collaborations with industry.

Started in 1987, CAE confers fellowships on individuals who have made substantial contributions to engineering in Canada, other countries or globally. A CAE fellowship is regarded as one of the highest honors in engineering.

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Sun Dong has been awarded a CAE fellowship.