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Press Release

Nobel Laureate Professor Sir Fraser Stoddart Joins HKU as Chair Professor of Chemistry

September 4, 2023



Professor Sir Fraser Stoddart

The University of Hong Kong (HKU) is proud to announce the appointment of Professor Sir Fraser Stoddart, a distinguished chemist and Nobel Laureate, as a Chair Professor in the Department of Chemistry, Faculty of Science.

“I look upon my role as a professor to be more about mentoring and helping young people to come up with fresh ideas and fulfil their ambitions in their research endeavours. By my providing lots of support, they can explore their ideas, bring them to fruition, and produce results that end up being published in the high-profile scientific literature,” said Professor Stoddart.

Professor Stoddart brings with him a wealth of experience and expertise in the fields of chemistry, materials science and molecular nanotechnology. He has served as a Board of Trustees Professor of Chemistry at Northwestern University in the United States for the past 16 years.



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As a result of his transformative research that led to the establishment of a new bond, i.e., the mechanical bond, in chemistry, Professor Stoddart has changed the way chemists think about chemical bonding. By employing the tenets of molecular recognition, he was able to develop highly efficient syntheses of mechanically interlocked molecular topologies and architectures, e.g., catenanes and rotaxanes. He went on to demonstrate that some of these molecular topologies and architectures can be endowed with bistability, leading to the construction of molecular switches that can be integrated into nanoelectronic devices and nanoelectromechanical systems (NEMS).

Recently, his research has been targeted towards the fabrication of molecular pumps and electric molecular motors. By leveraging the concepts of kinetic asymmetry and trajectory thermodynamics, he has designed pumping cassettes which preside over the unidirectional movements of the components of mechanically interlocked molecules. The precision with which these pumping cassettes operate can be harnessed to synthesize molecularly homogeneous polyrotaxanes with prescribed numbers of rings. Some of these contemporary polymers exhibit unique stimuli-responsive properties.

Professor Stoddart's ground-breaking research has earned him numerous accolades and awards, including the prestigious 2007 King Faisal International Prize in Science. In 2016, he was jointly awarded the Nobel Prize in Chemistry, along with Bernard L. Feringa and Jean-Pierre Sauvage, for his fundamental investigations on the design and synthesis of molecular machines.

At HKU, he will continue to expand the repertoire of molecular machines with a keen interest in collaborating with willing partners in the broader scientific community in Hong Kong and beyond.

“The HKU community will share my enthusiasm in extending a warm welcome to Professor Stoddart at the University, and we anticipate the valuable contributions he will bring to our research and academic pursuits,” said Professor Xiang Zhang, President and Vice-Chancellor of HKU.

"Professor Stoddart's global reputation and recognition will enhance our internationally leading research strengths. His appointment demonstrates our commitment to attracting the best and brightest minds to HKU and testifies to HKU's academic excellence." Professor Zhang added.

The appointment of Professor Stoddart reinforces HKU's position as a leading institution in research and teaching. The University looks forward to the fundamental advances that his work will bring to chemistry, materials science and molecular nanotechnology.

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