

# NUS research centre for smart materials opens

Facility for functional intelligent materials is first in the world

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A new centre – the first of its kind in the world – that will focus on research of functional intelligent materials used to develop things like artificial organs, opened yesterday at the National University of Singapore (NUS).

The centre will receive \$200 million in funding over the next 10 years from the Ministry of Education and NUS, and will work on making ground-breaking discoveries into functional intelligent materials. These are materials with properties that adapt to different environments and have memory functions. They have uses in the development of artificial organs, smart membranes, smart batteries and catalysts.

The Institute for Functional Intelligent Materials (I-FIM) aims to transform how materials are discovered, researched and applied, in order to create solutions for the community.

The centre is co-directed by Nobel Prize-winning scientist Konstantin Novoselov as well as Professor Antonio Castro Neto.

I-FIM is the sixth research centre of excellence in Singapore.

The research centre of excellence scheme was established in 2007 by the Research, Innovation and Enterprise Council with the aim of bringing in research talent, enhancing graduate education in Singapore universities and training quality research manpower.

Five such centres were established at NUS and Nanyang Technological University between 2007 and 2011.

One of them, the Singapore Centre for Environmental Life Sciences Engineering, has helped in the development of effective methods to detect the presence of the virus that causes Covid-19, in waste water, air and surfaces in residential estates and foreign worker dormitories.

The new centre in NUS was officially launched by Education Minister Chan Chun Sing yesterday.

“The first five research centres of excellence have boosted Singapore’s research ecosystem, and their outstanding research has helped Singapore to manage complex challenges such as Covid-19,” he said. “We look forward to I-FIM playing a significant role in our research landscape and becoming a globally renowned institute that will attract, retain and support world-class academic investigators, enhance graduate education in NUS, and create new important knowledge in materials science.”

Once fully running, I-FIM will have over 100 researchers and PhD students working in its facilities, which are housed on the NUS Kent Ridge campus. It will offer 50 PhD scholarships and more than 100 post-doctoral fellowships over the next 10 years.

NUS doctoral student Tan Jin Da, 26, said: “It is truly exciting to be involved in such an interdisciplinary area of research.”

Researchers in I-FIM are already working on creating material-level solutions, like a targeted drug delivery agent that is important for diseases like cancer, as the smart material will be able to release the drug only when it detects the presence of a cancer cell, leaving the patient’s healthy cells unharmed.

NUS president Tan Eng Chye said: “Materials research is poised to play a pivotal role in tackling some of the most pressing global challenges. For this reason, we have designated it a key area of focus at NUS, and over the years have amassed some of the world’s most prolific and prominent talent in this important field.”

“Our hard work and focus are being recognised on the global stage with NUS recently ranked seventh in the world for its materials science research output. Now, with the establishment of I-FIM, I am confident that the impact of NUS’ materials science work will become even more far-reaching.”

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Education Minister Chan Chun Sing peering into a microscope while touring one of the Institute for Functional Intelligent Materials' laboratories with institute director Konstantin Novoselov (left). ST PHOTO: ALPHONSUS CHERN