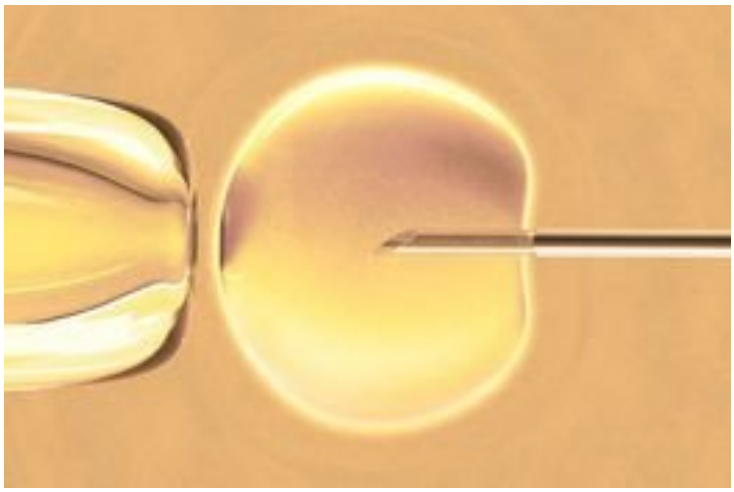
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Singapore invests $60mn to set up nanomedicine research institute

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Singapore: Focusing on the medical application of nanotechnology, Nanyang Technological University (NTU) in SingaporeÃ?Â has set up a research institute in Nanomedicine, with an investment of USD60 million.

An emerging field in drugs, nanomedicine are made up of tiny nano-sized particles thousands of times smaller than a grain of sand.

The new Nanomedicine Institute@NTU will be headed by Professor Subbu Venkatraman, Chair of NTU's School of Materials Science and Engineering, with Professor Chad Mirkin from Northwestern University as the chairman of its advisory committee. Prof Mirkin is a scientific advisor to United States President Barack Obama and a celebrated nanotechnology expert with more than 80 national and international awards and is the author of over 550 manuscripts and has over 930 patents worldwide.

Prof Mirkin is renowned globally for his work involving Spherical Nucleic Acids, structures made by taking DNA or RNA, the codes of life, and arranging them into a tiny ball on the surface of a nanoparticle, typically made of gold. The founder of four successful companies, he is acknowledged as a pioneer in using such nanomaterials for molecular and medical sensing, and is now developing various types of nanomedicines for the treatment of cancer.

Set to be Southeast Asia's first research institute in nanomedicine, the new Nanotechnology Institute @NTU will have the well-known International Institute of Nanotechnology (IIN), based in Northwestern University and headed by Professor Mirkin, as its main collaborative partner.

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The new institute has identified several initial projects such as a new anti-glaucoma nanomedicine. Injected only twice yearly to replace the current daily eye drops, the nanomedicine reduces high eye-pressure, which if left untreated can lead to blindness.

Another project in the works is the new drug-eluting balloon, which can deliver drugs in nano form over a long period of time to prevent re-occurrence of cardiovascular plaque that narrow the arteries.

Professor Freddy Boey, a serial inventor and a nanoscience expert, said the new institute will build upon the university's success in nanomaterials to develop innovative diagnostic and therapeutic medicine that will address medical needs which are currently unmet.

"The use of Nanomaterials for medical applications is today, one of the most exciting frontiers, enabling solutions for unmet needs never thought possible previously," Prof Boey said.

"NTU has already produced some "first-in-the-world" solutions using nanomaterials for cardiovascular and ophthalmology diseases. There are still many, many unmet medical needs, for example, in the area of diabetes. This effort will help Singapore and NTU to be at the forefront in developing disruptive solutions for unmet medical needs globally. "