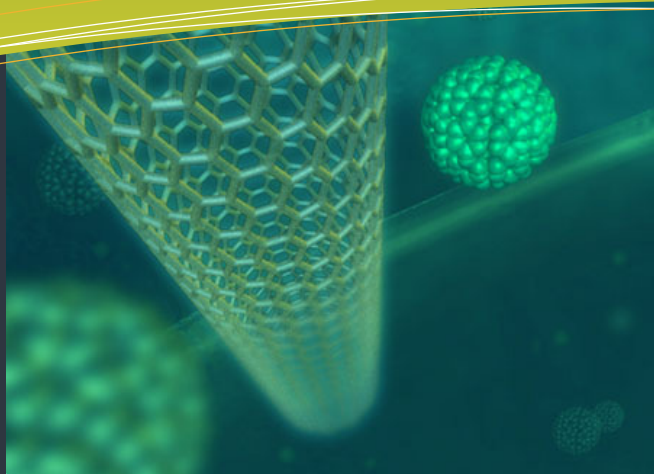


The Australia-China NanoNetwork Information Bulletin



“to promote collaborative research projects and research training ; addressing key contemporary research challenges through nanoscience”

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UTS nanotechnology students benefit from Chinese links

The UTS Institute for Nanoscale Technology has engaged two new PhD students under the auspices of the ATN NanoNetwork initiative, one to work in the area of energy-efficient materials, and the other to work on the applications of nanotechnology in medical diagnostics.

In January 2010 Mr Mark Lockrey, a graduate in physics formerly from the University of Wollongong, started his project at UTS. The project is entitled “Origin of efficiency droop in nitride light-emitting diodes” and is supervised by Professor Matthew Phillips of UTS and Professor Chen Peng of Nanjing University.

Six months later ,UTS enrolled Miss Jane Ng, a former graduate in nanotechnology from Flinders University. Her project is “Agents to enhance the detection of early-stage angiogenesis around tumours” and is supervised by Professor Bruce Milthorpe of UTS and co-supervised by Drs Stella Valenzuela and Andrew McDonagh in respect of the

immunological and chemical aspects respectively. Professor Bai Jing of Tsinghua University is also scheduled to become a supervisor for the project.

The Institute for Nanoscale Technology was established in 2002 as one of four new UTS Research Institutes aligned to the national science priority areas.

It brings together researchers from mathematics, physics, computational science, chemistry, microscopy, biology, materials science and engineering, interconnecting individuals, departments and faculties to provide a sense of common purpose and tangible objectives.

Both students visited Chinese partner universities in late 2010 with their supervisors.

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AustraliaChinaNanoNetwork



New potential projects—are you interested?

In recent months NanoNetwork researchers have been developing a number of potential collaborative projects. The themes for these projects and contacts if you are interested are:

(1) 'Nanoscience and Biofuels'

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(2) 'Solar Cells and Quantum Dots'

Neil.Furlong@rmit.edu.au

(3) 'Nanoscience and Skin'

Benjamin.Thierry@unisa.edu.au



Researcher Profile - Dayang Wang

Professor Dayang Wang took up a professor position at the Ian Wark Research Institute in July 2010. He has since 1999 been a member of the Max Planck Institute of Colloids and Interfaces (MPIKG), Potsdam, Germany, as a post-doctoral fellow, Alexander von Humboldt Research Fellow and group leader.

He has published 80 articles in peer-reviewed journals, 3 book chapters, and has delivered more than 15 plenary and keynote lectures in international conferences. His current research interests include crystallization, surface modification and patterning, interfacial adsorption, adhesion, and translocation, phase transfer, self-assembly of colloidal particles, drug delivery, and nanomedicine.

Research Infrastructure Database (RIDB) – Nanoscience/ Nanotechnology

The NanoNetwork will soon commence a Project towards a new Research Infrastructure Database (RIDB).

Discussions across the NanoNetwork have suggested that rapid progress of nanoscience from its 'discovery' into 'application' phase is underpinned by:

- researchers from different traditional research disciplines working in focused teams, and
- access to a wide variety of research equipment and tools

It is proposed that a RIDB could advantage both of these elements by providing ready access to specific equipment not available within a researcher's home institution.

How Might An RIDB Work?

- a web-based tool through which researchers/research managers can easily input relevant information about research infrastructure within their institution;
- a tool through which researchers from across the ATN can search/interrogate the database;
- a mechanism through which universities/researchers agree to the collaborative use of targeted research infrastructure.

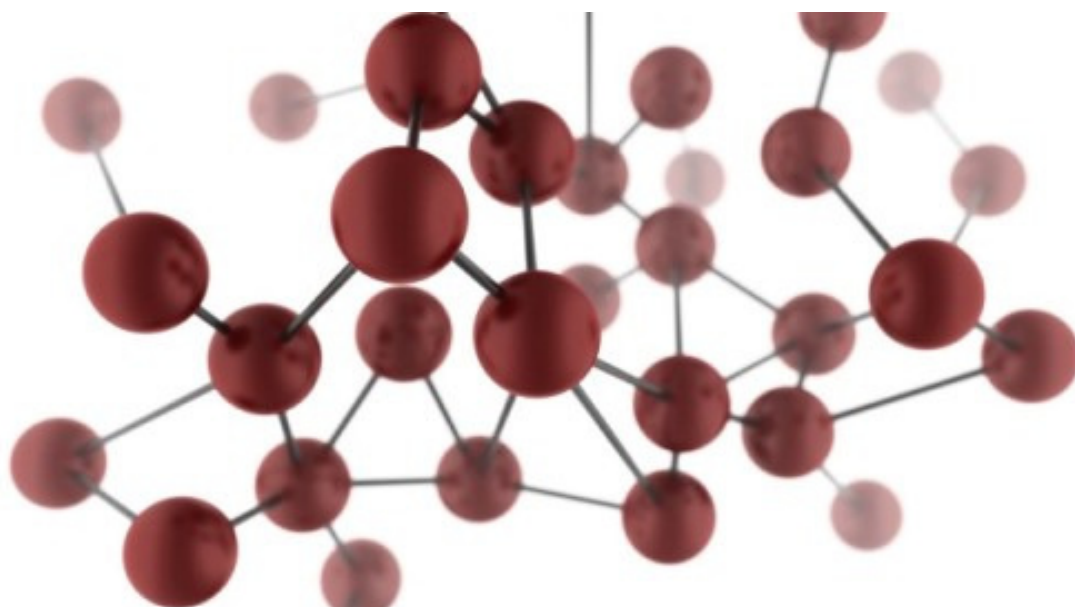
What Is Needed From an RIDB?

- the RIDB should be as broadly deployable as researcher demand requires. The breadth of any RIDB will be driven by the value proposition to researchers ;
- in proceeding towards an RIDB (Nano) it will be necessary to ensure that the value add is clear, and where appropriate bring additional support resources for the collaborative activities that result.

Next Steps:

- 1) a small working group will evaluate existing data bases across the ATN that may be relevant to an RIDB (Nano). This working group will include representation from each ATN member university;
- 2) the working group will develop a plan to establish the RIDB (Nano), including detail around how the RIDB will work and budgetary implications for implementation in the second half of 2011.

If you are interested to learn more – or participate in this project – please contact Neil.Furlong@rmit.edu.au



ATN-Southeast University Joint Laboratory update

Planning for the ATN/Southeast Joint Laboratory in Nanoscience, to be located at Suzhou Industry Park, has continued since the formal signing of an overarching MOU in Shanghai last October (see *December 2010 Bulletin*).

Discussions have focused on the development of an initial Plan for the Joint Laboratory and the establishment of a

Joint Laboratory Steering Committee and Research Leaders Group – both comprising senior members of Southeast University and ATN member universities.

The agreed elements of this Plan will be circulated as part of the next NanoNetwork Information Bulletin.



Researcher Profile: Qin Li



A/Professor Qin Li

Associate Professor Qin Li from Curtin University is an internationally recognised researcher in nanomaterials. She has particularly been recognised for her work in photoluminescent carbon nanodots, promising alternatives to the heavy-metal-contained semiconductor quantum dots, used for applications including energy-saving displays, photovoltaic devices and bioimaging.

Qin joined Curtin University in 2004, and was seconded to the Max Planck Institute for Polymer Research (MPIP), Germany, under a Marie Curie International Incoming Fellowship in 2006.

During her time there, she led her team to a breakthrough in the novel synthesis

of photoluminescent carbon nanodots using a carrier-supported nanocarbon synthesis route, recognized as one of the seminal works in the field.

Since returning to Curtin in 2009, Qin has continued the work on carbon dots and has made new breakthroughs on using carbon dots as targeted nanoprobe to seek out cancer cells and developing effective synthesis methods.

Along with carbon nanodots, Professor Li has a broad spectrum of research interests, including nanotechnology and clean energy solutions; nanomaterials and environment engineering; colloids, particles and interfaces; as well as aquifer storage and recharge, water resource management. She believes her choice of an academic career is to constantly pursue new knowledge and apply them for making the world a better place to live. She also believes in the ability of science to bring like-minded people together and the crucial importance of collaboration in today's interdisciplinary research.

Qin has been actively establishing collaboration partners in China and has recently built up a Curtin – Fudan PhD co-supervision program, further reinforcing her collaboration with Fudan University on novel functional nanocarbons.

Nanotechnology report released

The Australian Nanotechnology Alliance has recently released the fourth Edition of its "Nanotechnology : Australian Capability Report".

This Report provides an in depth summary of Australian nano capabilities across the research, Government and industry sectors and can be accessed at:

www.nanotechnology.org.au