

NATIONAL RESEARCH FOUNDATION

PRESS RELEASE

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SHANGHAI JIAO TONG UNIVERSITY TO SET UP ENVIRONMENTAL SUSTAINABILITY RESEARCH CENTRE IN SINGAPORE

- *NRF announces collaboration with Shanghai Jiao Tong University to establish CREATE R&D centre on energy and environmental sustainability*

1. The National Research Foundation (NRF) has approved the proposal for Shanghai Jiao Tong University, one of China's top universities, to set up a research centre in Singapore, in collaboration with the National University of Singapore (NUS) to work on "Energy and Environmental Sustainability Solutions for Megacities (E2S2)". This centre will be part of the NRF CREATE (Campus for Research Excellence And Technological Enterprise) programme.

2. NRF Chairman and Deputy Prime Minister Mr Teo Chee Hean said: "We are very pleased to engage in this strategic partnership with Shanghai Jiao Tong University to develop solutions for energy and environmental sustainability in cities. Given the rapid rate of global urbanisation, this is a timely project, which brings together the complementary expertise of researchers from China and Singapore to address the challenges of waste management and environmental contamination facing large cities today. It will contribute significantly to Singapore's push to be at the forefront of urban solutions research."

3. The research agenda for the centre was developed by researchers from Shanghai Jiao Tong University, in close collaboration with NUS counterparts. The centre aims to improve energy recovery from waste, as well as develop system modeling and data management tools to track and mitigate emerging environmental contaminants. Industry collaboration will be a key component of the project, and test-bedding sites in Singapore and Shanghai have already been identified.

4. Professor Zhang Wenjun, Vice President of Research and International Relations in Shanghai Jiao Tong University said: "More than half the world's population currently lives in cities. The continued growth of urban areas will bring about increasing environmental stresses. The E2S2 programme will take a systems approach to develop and testbed sustainable solutions in the area of waste management, energy and the environment. We believe the research results will bring important benefits to Shanghai and Singapore, as well as other cities around the world. We look forward to a fruitful partnership with our Singapore colleagues."

5. A summary of the research proposal and the CVs of key personnel involved in the project are at [Annex A](#).

The National Research Foundation (NRF)

The National Research Foundation (NRF), set up on 1 January 2006, is a department within the Prime Minister's Office. The NRF sets the national direction for research and development (R&D) by developing policies, plans and strategies for research, innovation and enterprise. It also funds strategic initiatives and builds up R&D capabilities and capacities by nurturing local talents and attracting foreign ones. In addition to coordinating the research agenda of different agencies to transform Singapore into a knowledge-intensive, innovative and entrepreneurial economy, it also provides secretariat support to the Research, Innovation and Enterprise Council (RIEC), chaired by the Prime Minister. The NRF aims to transform Singapore into a vibrant R&D hub that contributes towards a knowledge-intensive, innovative and entrepreneurial economy; and make Singapore a talent magnet for scientific and innovation excellence. For more information, please visit www.nrf.gov.sg.

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Energy and Environmental Sustainability Solutions for Megacities (E2S2)

The growth of urban areas has placed tremendous and unsustainable pressures on our environment. For example, we have seen how urbanisation has created higher air and water pollution. To address these problems, Shanghai Jiao Tong University, in collaboration with NUS, will be establishing a research programme titled “Energy and Environmental Sustainability Solutions for Megacities”.

The programme consists of two problem-directed projects on (i) waste management and energy recovery, (ii) emerging environmental contaminants, and two supporting projects on (iii) systems modelling and (iv) data management.

Further details of the individual projects are elaborated below:

(i) Waste management in megacities for sustainability and energy recovery

This project aims to integrate and optimise biological and chemical treatment technologies to improve energy recovery and decrease the amount of pollutants released into the environment.

(ii) Challenges of emerging contaminants on environmental sustainability in megacities

This project seeks to identify and develop protocols to track sources of emerging contaminants, as well as evaluate their impact on human health. The end goal is to produce an integrated environmental monitoring system.

(iii) Mission-oriented system models for megacity sustainability

This project aims to create system modelling tools capable of solving highly interlinked and complex problems which can be used to address city management and planning issues. The project will develop test models for the projects on waste management and environmental pollution.

(iv) Distributed clouds: Peta-scale urban sensing and data management

This project seeks to develop cloud computing data management tools for more efficient integration and analysis of data. The technology will be tested using data from the above projects on waste management and environmental pollution.

Curriculum Vitae



Professor Zhang Wenjun

Vice President (Research and International Relations),
Shanghai Jiao Tong University
Chair Professor, Department of Electronic Engineering
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Professor Zhang (SMIEEE) was born in Qingdao, China in 1963. He received his BS, MS and PhD degrees in electronic engineering from Shanghai Jiao Tong University in 1984, 1987 and 1989, respectively. He has been the Vice President of Shanghai Jiao Tong University since 2002.

From 1990 to 1993, he worked as a postdoctoral fellow at Philips Kommunikation Industrie AG in Nuremberg, Germany, where he was actively involved in developing HD-MAC (former European HDTV) system. When he returned from Germany in 1993, he joined the Faculty of Shanghai Jiao Tong University and became a full professor in the Department of Electronic Engineering two years later. As a team leader, he successfully developed the first Chinese HDTV prototype system in 1998. By solving the technical bottleneck of high-speed mobile reception of digital television signals, he was one of the major contributors to the Chinese Digital Television Terrestrial Broadcasting Standard which was issued in 2006. He has more than 37 patents granted and more than 80 referred papers published in international journals and conferences.

Prof. Zhang's current research interests include digital video coding and transmission, multimedia semantic processing and intelligent video surveillance. He is a Changjiang Scholarship Professor and has been awarded the Distinguished Youth Scholars Fund by the National Science Foundation of China for his expertise in communications and information systems.



Professor Peng Yinghong

Assistant President, Shanghai Jiao Tong University
Director, Institute of Mechatronic Design and Knowledge Based Engineering, and Professor, Department of Mechanical Engineering
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Prof Peng was born in 1963 in Chengdu, China. He graduated from Central South University and received his Ph.D. in 1993. Prof Peng was promoted to a full professor of Shanghai Jiao Tong University in 1997.

From 1997 to 2002, Prof Peng was appointed as deputy director of National Die & Mold CAD Research Engineering Center in Shanghai Jiao Tong University. In 2002, he was appointed as the director of Research Management Office of Shanghai Jiao Tong University. In 2010, Prof. Peng was appointed as the Assistant President of Shanghai Jiao Tong University in charge of research and development.

His major research directions are Materials Precision Plastic Deformation Theory & Technology and Knowledge Based Engineering Theory & Technology. He has published more than 200 academic papers and 3 books in his research fields. Prof Peng has presided numerous joint research projects with colleagues from the US, Switzerland, Germany and Japan. He has been appointed Ford Professor since 2008 for his contribution in applying light weight alloy in vehicle body components.



Professor Tan Thiam Soon

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Professor Tan Thiam Soon is Vice Provost (Education) at the National University of Singapore. He assists the Provost in setting educational directions and policies for the University, in ensuring high academic standards, and in education quality assurance. He has oversight of the Registrar's Office, Office of Admissions, Centre for Development of Teaching and Learning and the Centre for Instructional Technology.

Prof Tan is a faculty member with the Department of Civil Engineering and was Dean of Admissions from 2005 to 2007. Developing broad knowledge of NUS' undergraduate educational policies programmes and initiatives across the University, he has also previously served in Faculty as well as University-level roles. As Engineering Vice-Dean for Undergraduate Programmes, Prof Tan helped shape the engineering curriculum, including the launch of the Bachelor of Engineering (Materials Science and Engineering) and the double degree with Bachelor of Science (Physics). He was a member of the University Curriculum Committee/University Committee on Education Policy and the General Education Modules (GEM) Steering Committee, contributing to developing initiatives such as the implementation of GEMs and the University Curriculum Structure.

Graduating from the University of Canterbury (New Zealand) in 1979 under a Colombo Plan Scholarship, Prof Tan subsequently obtained his MS and PhD from the California Institute of Technology. He joined the Department of Civil Engineering in 1986. His main areas of research interest are deep excavation, soil improvement, land reclamation and soil characterisation. He has given invited and keynote lectures at a number of international conferences and received the ASTM's C A Hogentogler Award for 2007, the Public Administration Medal (Silver) in 2008 and the Best Research Paper Award 2008 from the Japanese Geotechnical Society.



Professor Tay Tong Earn

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Prof Tay obtained his BE in Mechanical Engineering (First Class) in 1984 from the University of Melbourne, Australia and did his PhD in Solid Mechanics at the same University in 1988 under the Melbourne University Scholarship. He joined the NUS as a lecturer in 1988. His research interests are fracture and damage mechanics of composite materials, temperature and moisture effects on mechanical behaviour of composite materials and laser based methods in non destructive testing of composites.