UNIVERSITY OF OXFORD

OSCAR

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NEWSLETTER 008

牛津大学高等研究院（苏州）

OXFORD SUZHOU CENTRE FOR ADVANCED RESEARCH

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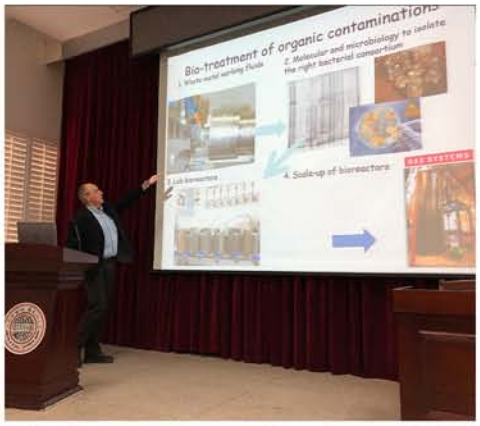
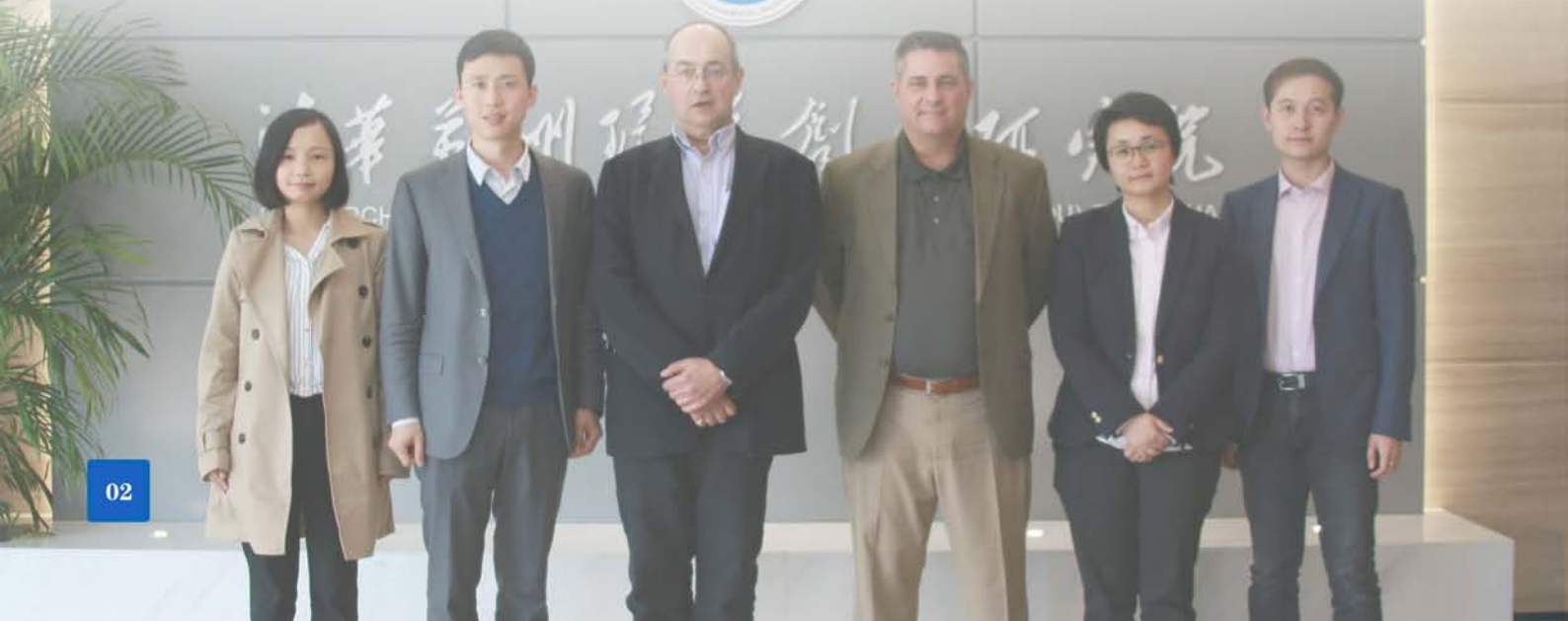
HEADLINES

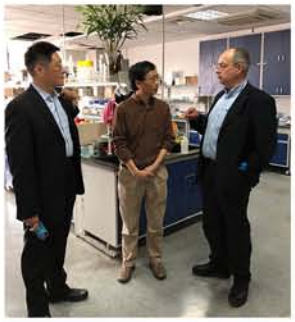
Principal Investigators Begin Research Programmes and Collaborations in Suzhou

From late March to early April, Principal Investigators (PIs) and senior researchers from the University of Oxford visited OSCAR. Professor Ian Thompson, Professor Wei Huang and Dr Jason Raymond were updated on the progress of the fit-out of the OSCAR building and briefed on the scientific research environment in Suzhou Industrial Park (SIP). They also paid visits to potential research partners in Suzhou and Nanjing.

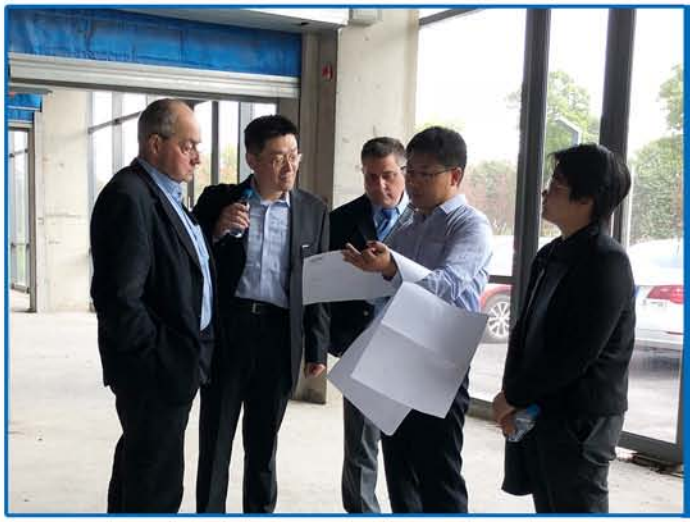


Invited by the College of Chemistry, Chemical Engineering and Materials Science (CCCEM) of Soochow University, Professor Ian Thompson, Professor Wei Huang and Dr Jason Raymond presented academic lectures to about 200 students and faculties. Leah He (General Manager of OSCAR) introduced OSCAR and its aims and vision to the audience. After their talks, the PIs discussed the possibility of research collaboration with Professor Yao Jianlin (Director of CCCEM of Soochow University).

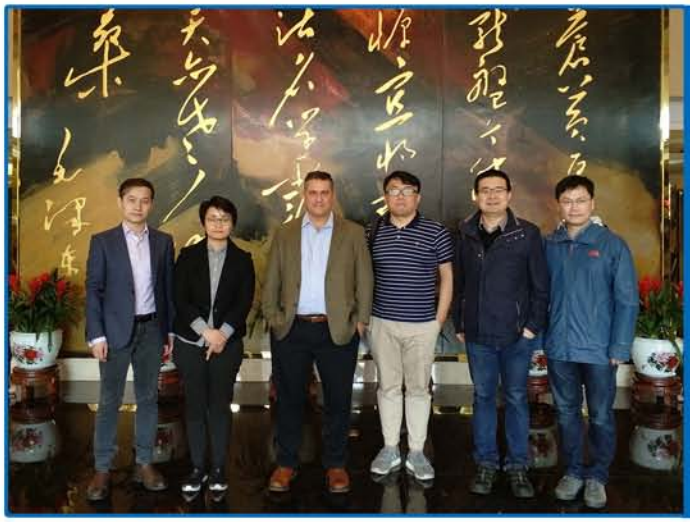



They also visited several other institutions, including the Suzhou Institute of Nano-Tec and Nano-Bionics (SINANO), the Chinese Academy of Science (CAS); Research Institute for Environmental Innovation (Suzhou), Tsinghua (RIET); and the Jiangsu JITRI Intelligent Sensor Research Institute (ISRI).

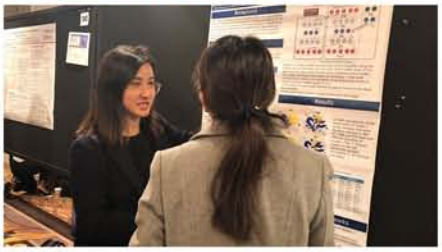


Professor Thompson, Professor Huang and Dr Raymond visited the OSCAR building to discuss the fit-out and construction plan with Frank Zhang (Head of Building Services and Facilities of OSCAR).



Dr Raymond, Leah He (GM of OSCAR), Tom Chen (GM of Isis-Changzhou) and Dr Weizhi Liu (Executive Assistant to Director of OSCAR) met Dr Ban Wang (CEO of Grosso Link Swiss Innovation) in Nanjing, to discuss the possibility of cooperation on research.

OSCAR Supports Dr Yang's Attendance at BHI–BSN International Conference



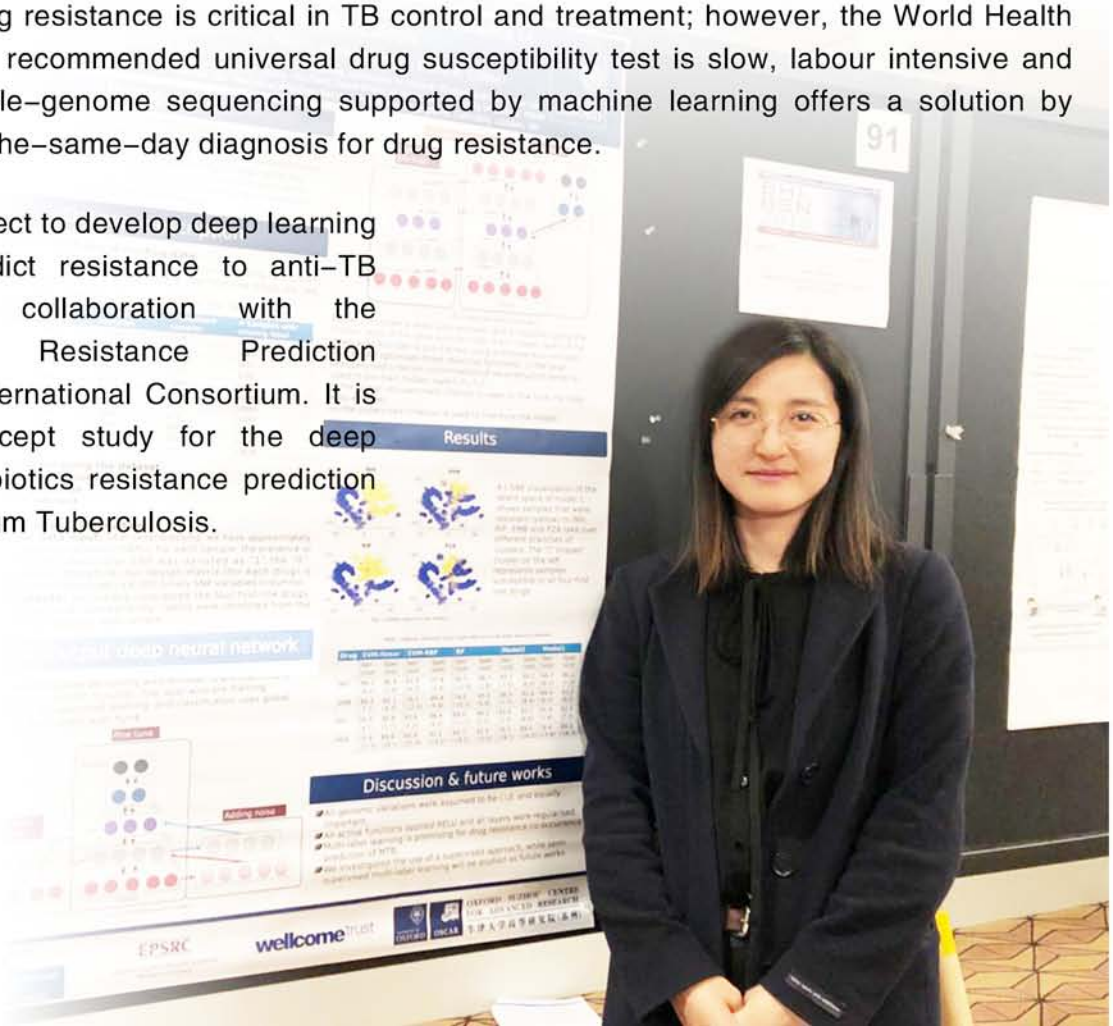
Dr Yang Yang, Senior Research Associate of Computational Health Informatics of the University of Oxford, was supported by OSCAR to attend the IEEE International Conference on Biomedical and Health Informatics and IEEE Body Sensor Networks Conferences (BHI–BSN), held on 4–7 March in Las Vegas, USA.

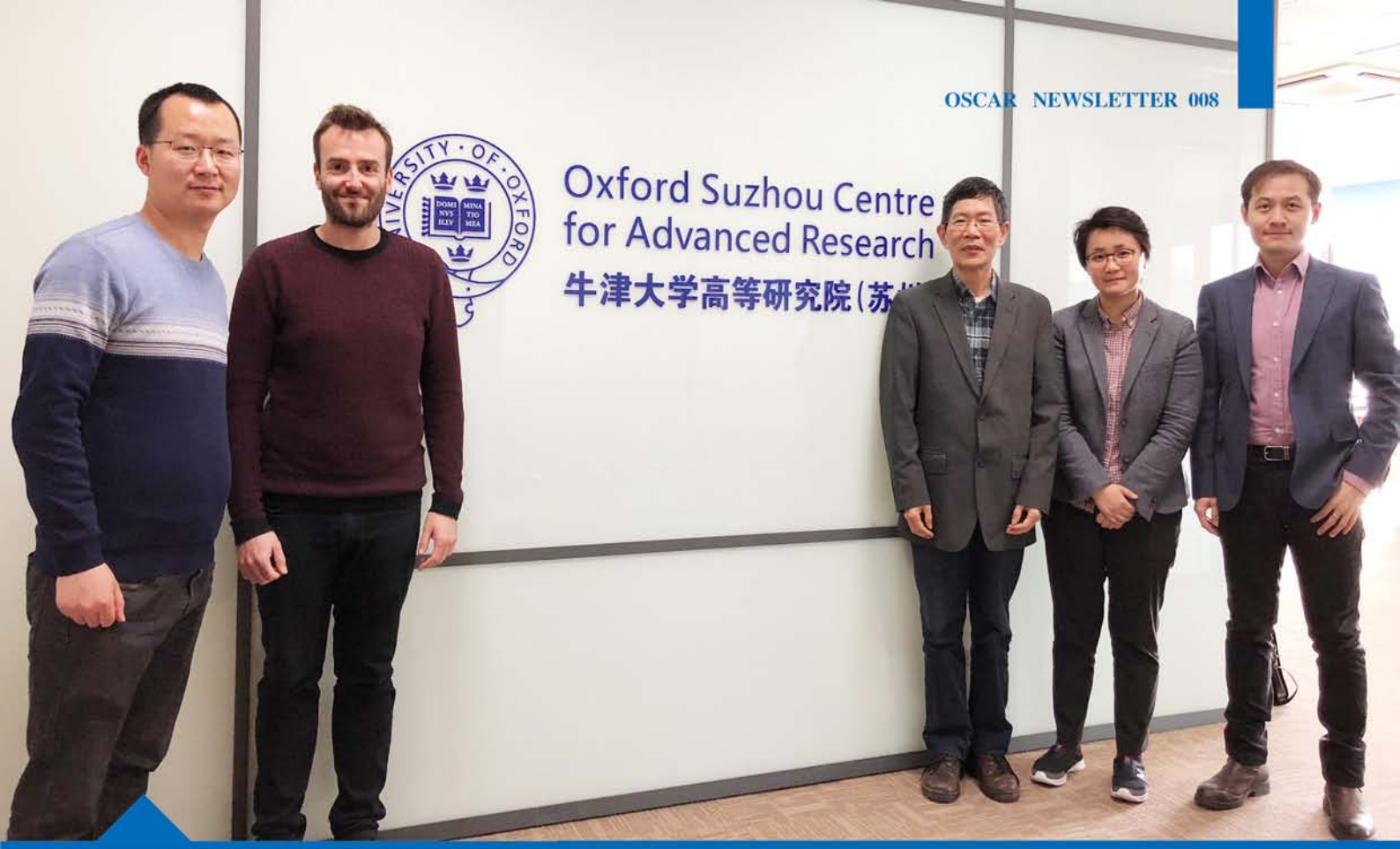
Biomedical and Health Informatics and Body Sensor Networks are two fast–growing fields which promise to improve the quality of health care delivery and patient outcome, while reducing costs. The BHI–BSN conference brings together leading researchers in the two fields, offering an opportunity for the 2,000 attendees across more than 20 countries to network. The conference had more than 500 conference papers submitted.

Dr Yang presented her poster 'Deep Learning for Predicting Multiple Drug Resistance of Mycobacterium Tuberculosis' and special session paper 'Deep Learning for Fighting Antimicrobial Resistance'.

Antimicrobial resistance has become a global threat in Tuberculosis (TB) control. Timely diagnosis of drug resistance is critical in TB control and treatment; however, the World Health Organization's recommended universal drug susceptibility test is slow, labour intensive and expensive. Whole–genome sequencing supported by machine learning offers a solution by providing near–the–same–day diagnosis for drug resistance.

Dr Yang's project to develop deep learning models to predict resistance to anti–TB drugs is in collaboration with the Comprehensive Resistance Prediction Tuberculosis International Consortium. It is a proof–of–concept study for the deep learning in antibiotics resistance prediction for Mycobacterium Tuberculosis.





Dr Pu Qian from the University of Sheffield Visits OSCAR

On 9 March, Dr Pu Qian and two PhD students from the University of Sheffield visited OSCAR. Leah He, the General Manager of OSCAR, gave them an introduction about OSCAR and discussed the possibility of cooperation in the future.

Dr Pu Qian is from the Department of Molecular Biology and Biotechnology of the University of Sheffield and his research interests include microbiology, phototrophic bacteria, cyanobacteria, membrane proteins, biochemistry, enzymology and nanotechnology.

Caption: Dr Jason Raymond (left) and Professor Ron Roy (right) lead the Physic

Introduction to the Physical Acoustics Laboratory

Based in the Department of Engineering Science at the University of Oxford, the Physical Acoustics Laboratory focuses on research projects which share a common foundation in the physics of high–intensity ultrasound. Acoustics is a technology that sits at the interface of a number of application areas, such as healthcare and environmental technology. Dr Jason Raymond and Professor Ronald Roy believe acoustics research at OSCAR can help build bridges across disciplines and promote new ideas and collaborative teaming within the OSCAR community.

A major focus of the laboratory is on developing new techniques to enable biomedical imaging and therapy at the intersection of light and sound. Healthcare technology continues to be a key area for technology development and new start–ups. The scientists hope to help fuel local economic development in this area by helping to promote translational research in therapeutic ultrasound and photo–acoustic imaging.

Similarly, the scientists believe that ultrasound can play a positive role in industrial manufacturing by mitigating bio–contamination and the generation of untreatable waste. They will form a multi–disciplinary environmental engineering team based at OSCAR in collaboration with Professor Ian Thompson and Professor Wei Huang which will focus on development of technologies to promote enhanced biodegradation, gene transfer and manipulation of microbial growth and biofilms using ultrasound.

al Acoustics Group at OSCAR.

Professor Roy is the Chair of Mechanical Engineering and an Associate Head of the Department of Engineering Science (Research) at the University of Oxford. Trained as a physicist and an engineer, he specialises in the application of physical acoustics principles to problems in biomedical acoustics, industrial ultrasonics, and acoustical oceanography. He was formerly Professor and Chairman of the Department of Mechanical Engineering at Boston University and has served on numerous professional society committees, review panels, editorial boards, and was a past Editor–in–Chief of Acoustics Research Letters Online (now called JASA Express Letters). Professor Roy is a Fellow and past Vice–President of the Acoustical Society of America (ASA) and a recipient of the ASA Helmholtz–Rayleigh Interdisciplinary Silver Medal. He holds the titles of Honorary Professor of Biomedical Engineering at Hong Kong Polytechnic University, and Adjunct Professor of Acoustics at Nanjing University.

Dr Raymond is a Senior Research Associate in the Department of Engineering Science at the University of Oxford. He holds a B.S. in Interdisciplinary Engineering and M.S. in Mechanical Engineering from Boston University, and a PhD in Biomedical Engineering from the University of Cincinnati. He was awarded a Whitaker International Fellowship beginning in 2013 during which he conducted research in biomedical ultrasound at the Erasmus Medical Centre in Rotterdam, the Netherlands. The following year he was awarded the prestigious Frederick V. Hunt Fellowship of the Acoustical Society of America, and joined the University of Oxford in 2015. Partly with the support of this fellowship, he travelled extensively in China and gave fellowship talks at Southeast University and the Institute of Acoustics at Nanjing University. He has been actively involved in developing physical acoustics research at OSCAR since 2016. In March, he visited and delivered seminars at Tsinghua University School of Environment and Soochow University.

The lab is interested in collaborations in the areas of industrial ultrasonics and biomedical acoustics and has ongoing projects in the following areas:

- Facilitating high–intensity focused ultrasound (HIFU) therapy using light and sound.
- Contrast enhanced photo–acoustic imaging.
- Ultrasound enhancement of biodegradation, gene transfer and control of microbial growth and biofilms.

For more information, please visit: http://paclab.hmc.ox.ac.uk/

Brief Introduction to the 'Double Innovation Plan' of Jiangsu Province

The programme for High-Level Entrepreneurial and Innovative Talents of Jiangsu Province is referred to as the 'Double Innovation Plan', and includes three categories:

1) Double Innovation Talent

Over three years, Jiangsu province will provide either CNY 3 million, 1 million or 0.5 million to the grantees, depending on their level. The subsidy will be paid to the employer, and the grantee is entitled to at least 30% of the subsidy. The rest of the subsidy could be used for research activities.

Requirements for applicants:

- No more than 55 years old;
- More than 5 years' working experience in the related area;
- Started working in Jiangsu during the past 3 years and able to continue working 3 years more after awarding;
- Has world-class research level and has published academic papers in authoritative journals in the last five years.

2) Double Innovation Team

Over three years, Jiangsu province will provide the total amount of CNY 3 to 8 million to the team of the grantee. The subsidy will be paid to the employer, the team of the grantee is entitled to at least 30% of the subsidy. The rest of the subsidy can be used for team's research.

Requirements for applicants:

- 1 leader and at least 2 core members;
- The leader should be a Noble prize winner, Fellow of Royal Academy of Sciences, Fellow of the Royal Academy of Engineering, Fields Medallist, Turing Award winner or the equivalent to the above levels;
- No more than 55 years old (The leader could be up to 80 years old);
- More than 5 years' working experience in the related area;
- All members should have started working in Jiangsu during the past 5 years and should be able to continue working in Jiangsu for 3 years more after the award.

3) Double Innovation PhD

Over two years, Jiangsu province will provide the total amount of CNY 150k to the grantee.

Requirements for applicants:

- No more than 35 years old;
- Started working in Jiangsu during the past year and are able to continue working in Jiangsu for 2 years more after the award.

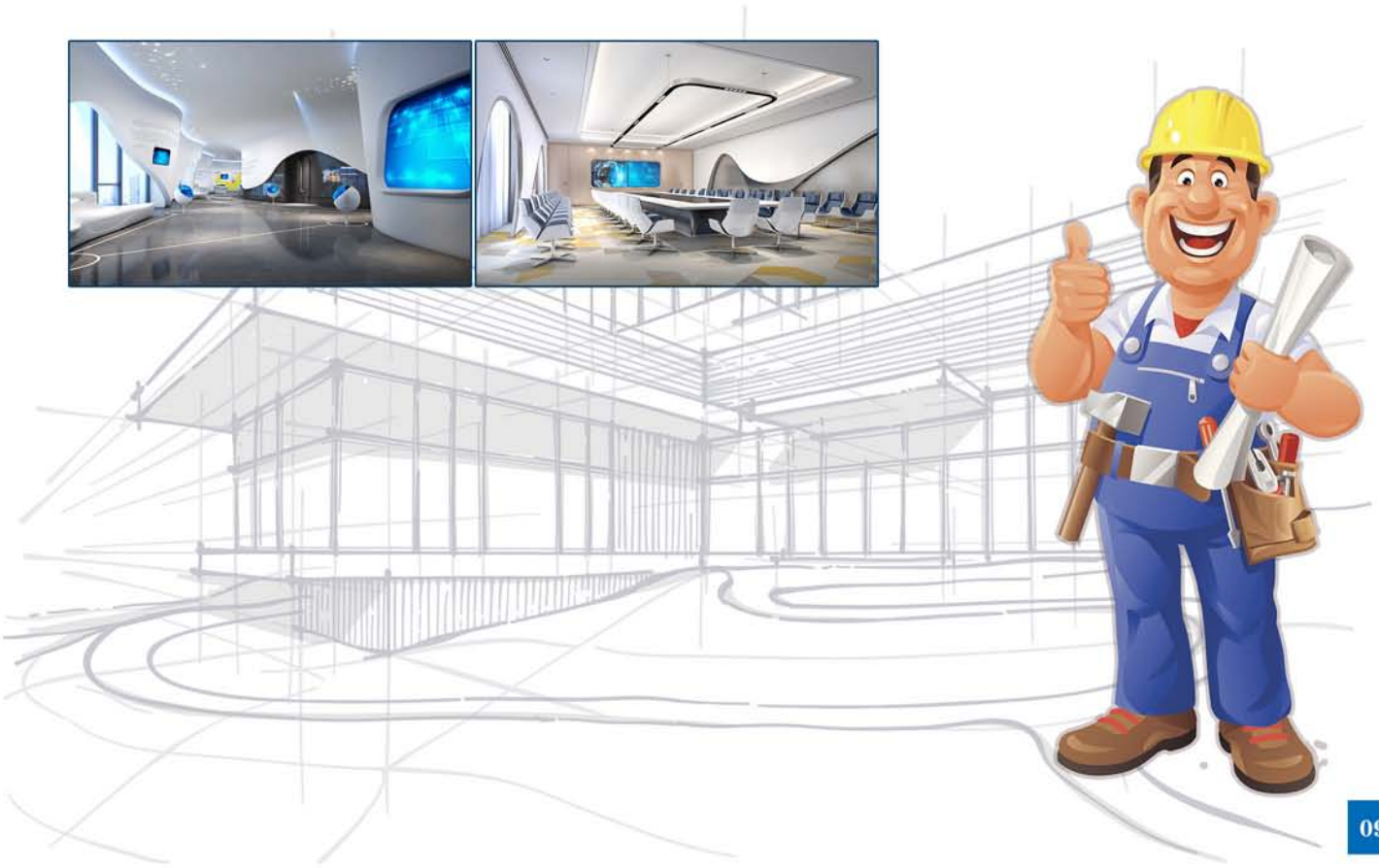
Online applications can be made from March to April every year.

Contact Dr Weizhi Liu for more information about talent policies (weizhi.liu@oxford-oscar.cn)

Progress of OSCAR's Fit-out and Construction in March

The OSCAR building fit-out and construction is now undergoing the tendering process (a government-regulated procedure) which consists of five major parts: Non-Lab Construction, Lab Construction, IT Construction, Air Conditioning Construction and Exhibition Hall Decoration.

- The consolidating of tendering documents for Air Conditioning Construction was completed in late March and will be announced for public tendering in early April 2018.
- The tendering documents for Non-Lab Construction will be submitted for public tendering in mid-April 2018.
- The tendering documents for Lab Construction will be submitted for public tendering in late April 2018.
- The consolidating of tendering documents for the IT Construction is ongoing and will be submitted for public tendering in late April 2018.
- Work on the design of Exhibition Space on the Ground Floor is ongoing.



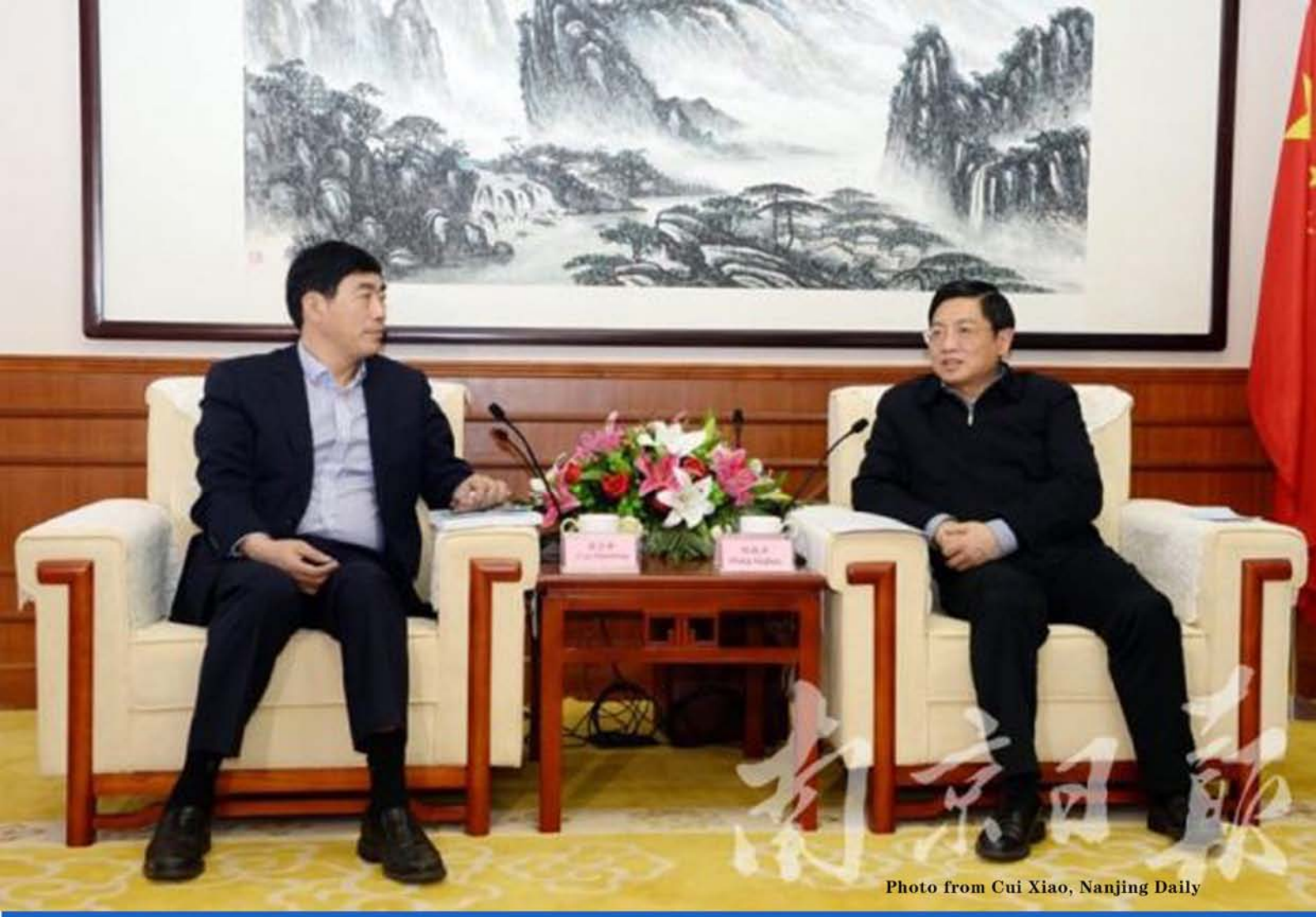


Photo from Cui Xiao, Nanjing Daily

Jiangsu Provincial Official Meets with OSCAR Director

On 17 March, Mr Zhang Jinghua, Member of the Standing Committee of the Jiangsu Provincial Committee and Secretary of the Nanjing Municipal Party Committee, met with Professor Zhanfeng Cui, Founding Director of Oxford Suzhou Centre for Advanced Research, Donald Pollock Professor of Chemical Engineering, Fellow of Royal Academy of Engineering, Director of CRMI Technology Centre of the University of Oxford.

The China–UK Science & Technology Innovation Forum

From 12-15 March 2018, the China-UK Science & Technology Innovation Forum was held across four locations; Minghang District and Baoshan District of Shanghai, Changzhou and Shenzhen. The event was hosted by the UK Government's Science & Innovation Network, local committees and companies, and Oxford University Innovation (OUI).

Innovation experts from the UK presented at the Forum, with more than 300 representatives from companies, research institutes and investment institutions in attendance.

The main speakers included:

- Morag Brown, Senior Innovation Policy Officer of the British Embassy, introduced exemplar policies and funds of Sino-UK international cooperation projects.
- Dr. Adam Workman, the Head of New Ventures Support and Investing at OUI, gave a detailed introduction of joint OUI-China ventures, the OUI Angel Network and the Oxford Innovation Society.
- Dr. Steven Chance presented his Oxford Brain Diagnostics technology.
- Dr. Nick Skaer presented Orthox FibroFix™ implants: Commercial silk biomaterial technology to repair articular and meniscal cartilage.
- Dr. Mike Karim presented details of a next generation flow diverter for curing brain aneurysms.
- Project manager of Isis-Changzhou, Elena Yang, highlighted a few of the latest projects from OUI.

The event proved very successful, with local government and Chinese companies showcasing their innovation resources, policy advantages and willingness to collaborate with the Oxford delegation. Many institutions expressed great interest in following up on the conversations started at the Forum.

Neighbours of OSCAR

Institute for Process Modelling and Optimisation

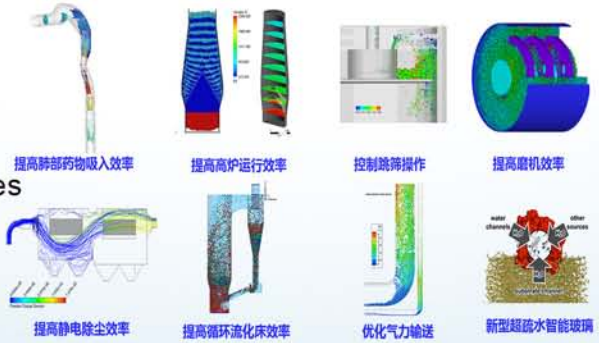
The Institute for Process Modelling and Optimisation was founded in September 2016, supported by the Jiangsu Industrial Technology Research Institute (JITRI) and the Suzhou Industrial Park (SIP), with Professor Aibing Yu as Director.

The Institute has already attracted 9 Academicians/Fellows from China, Australia and the rest of the world in addition to over 50 world-class researchers and experts. The Institute has over 5,000m2 of office and R&D space and has obtained around CNY100m from various resources for the coming five years. The Institute aims to develop clean and intelligent industrial processes using modelling and optimisation technology, and provides new technologies, methods and products for industrial applications of various types. It will promote the industrialisation of scientific and technological achievements. The institute also aims to incubate high tech companies and nurture innovative talents that are in line with provincial and state interests and needs.

Research Areas

- Advanced Computational Particle Technology
- High Performance Computing and Control Platform
- Information Intellectualization of Industrial Processes
- Process Intensification and Innovation

http://en.jitri.org/yanjiuyuan73.html



SIP News in March

SIP rewards 'special talents'

SIP launched the Housing Rewards mechanism on 17 Mar, starting to offer talents rewards and subsidies for house purchasing and renting, children's schooling and medical care spending. The first award went to 18 talents, including one of more than CNY 830,000.

It is noteworthy that the new mechanism is not only targeted at leading and high-caliber talents. People who work in SIP and have paid a certain amount of individual income tax in total will have the chance to receive the rewards and subsidies for buying a house and improving their living conditions. In the first instance, a total of more than CNY 20 million will be granted to 300 eligible candidates.

According to Pan Yu, Deputy Director of SIP Talent Service Office, the local authority has allocated CNY 500 million for attracting talents, and the highest housing allowance under the mechanism will reach CNY 5 million.

http://www.sipac.gov.cn/english/news/201803/t20180319_694681.htm

Innovent Biologics declared a Unicorn enterprise

The Ministry of Science and Technology of China released its 2017 List of Chinese Unicorn Enterprises and Trend Study Report on 23 March. Innovent Biologics, an SIP-based pharmaceutical company, is on the list. It is the only one in Suzhou and one of seven in Jiangsu province.

'Unicorn' was chosen in 2013 by American venture capitalist Aileen Lee to represent the statistical rarity of less than 10-year-old start-ups valued at over US$1 billion. The Chinese evaluation follows the same criteria.

Founded in SIP's Suzhou Biomedicine Industrial Park in August 2011, Innovent Biologics has seen a fast development, with an R&D team of over 500 high-calibre talents and 13 kinds of new drugs for tumours, ocular fundus diseases, autoimmune diseases and cardiovascular diseases in its lineup. In addition, the company has partaken in a series of national medical research programmes. All of these achievements helped it take a place on the list.

From Suzhou Daily

http://www.sipac.gov.cn/english/news/201803/t20180325_696975.htm

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