牛津大学高等研究院（苏州）

OXFORD SUZHOU CENTRE FOR ADVANCED RESEARCH

Building A,388 Ruo Shui Road, Suzhou Industrial Park, Jiangsu, 215123, P.R. China

0086-512-62869088

info@oxford-oscar.cn

July 2018

NEWSLETTER 012

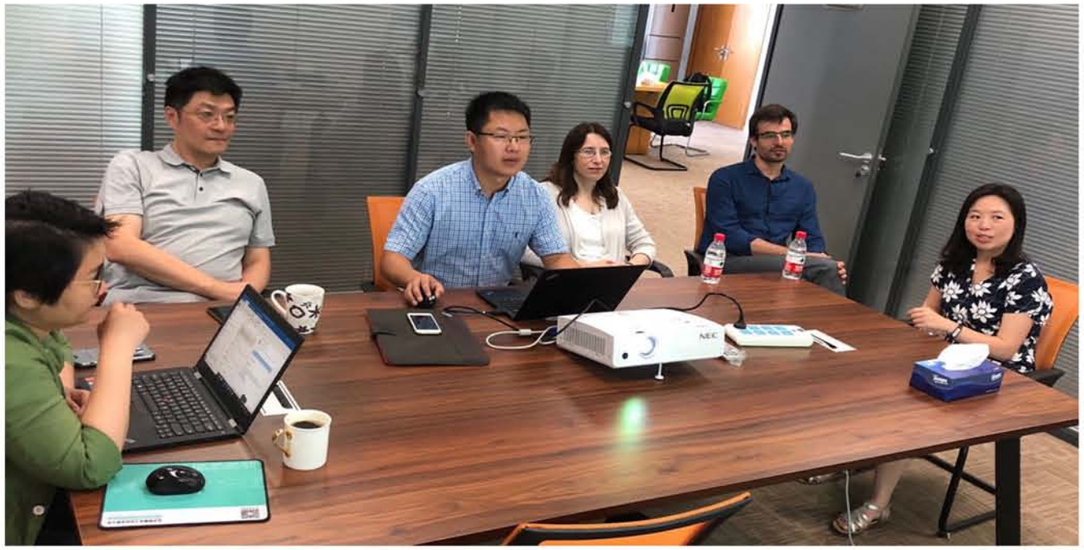
oscar.web.ox.ac.uk

HEADLINES

- **Principal Investigators Visit OSCAR and Potential Collaborators**
- **Introduction to Professor Donal Bradley's Laboratory - Physics and Application of Soluble Semiconductors**
- **OSCAR Director is Invited by the Suzhou Government as Suzhou Talent Advisor**
- **Progress of OSCAR's Fit-out and Construction in July**
- **Meet OSCAR's New Staff**
- **Neighbours of OSCAR**
  Nanopolis Suzhou
- **News Links in July**
  SIP Tech Outcomes Displayed at 10th VWIE
  Summit on Offshore Innovation and Entrepreneurship Kicked off in SIP
  North American Leg of the 7th 1000 Talents Plan Startup Contest Concludes

Principal Investigators Visit OSCAR and Potential Collaborators

IN July, Principal Investigator Professor Cathy Ye, Dr Pierre-Alexis Mouthuy, Senior Research Fellow of Botnar Research Centre (BRC), Principal Investigator Professor Wei Huang and Professor Gail M. Preston visited OSCAR, surveyed the fit-out and construction progress and expressed high expectations for OSCAR's grand opening in November.



ON 20 July, Prof. Wei Huang held a meeting with Jiangsu Industrial Technology Research Institute (JITRI), SIP Administrative Committee and SEID Administration Office at OSCAR. Prof. Wei Huang initiated the meeting by providing an overview of his Biosensor research and current projects, and emphasizing the future R&D plans at OSCAR. Mr. Tan (Director of Project Management Department of JITRI) and Mr. Jiang (Director of SEID Administration Office) raised questions about the technologies and their future market applications. They understood the support Prof. Wei Huang needed from JITRI and the Suzhou local government for his future R&D work at OSCAR, and they also introduced their current funding policies, including details on how to apply.

Prof. Wei Huang also visited Jiangsu Academy of Agriculture Sciences in Nanjing for an academic exchange on Biosensor inspections for soil contamination.

IN July, Professor Cathy Ye gave a presentation of her research and introduced OSCAR at Tsinghua Bio-manufacturing Center. Potential research collaborations regarding 3D printing/Bioprinting, bio-inks, bio-scaffold, bio-materials and drug toxicity testing were discussed. OSCAR is currently recruiting researchers and welcomes Tsinghua University students to apply for the research positions at OSCAR.

Photo: Professor Wei Sun (Director of Tsinghua Bio-manufacturing Center) and Professor Cathy Ye.

Professor Cathy Ye introduced OSCAR at Tsinghua Bio-manufacturing Center.
Professor Cathy Ye visited Department of Mechanical Engineering of Tsinghua Bio-maufacturing Center.

Department of Mechanical Engineering of Tsinghua University

The Department of Mechanical Engineering was founded in 1932, and it is one of the earliest departments in the field of engineering at Tsinghua University, as well as one of the most oldest engineering departments in China.
Please visit the website for more info:

http://www.tsinghua.edu.cn/publish/jxxen/4181/index.html

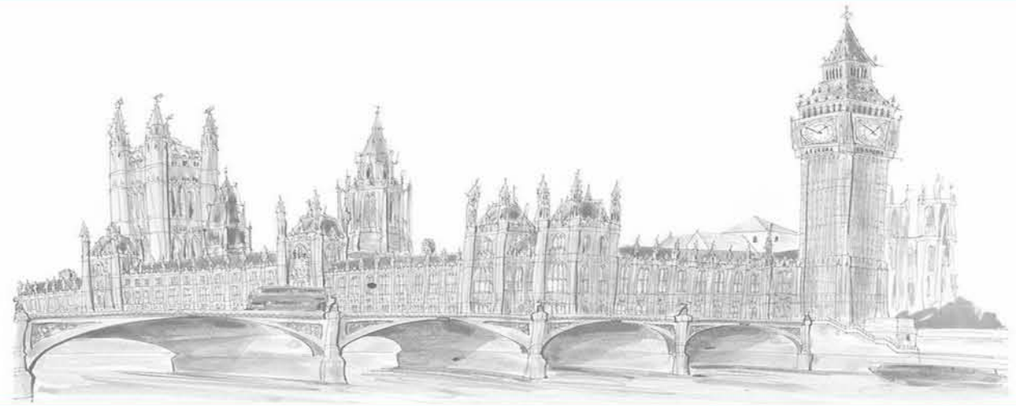
Introduction to Professor Donal Bradley's Laboratory - Physics and Application of Soluble Semiconductors

Left to right:(Back row):
Dr Rick Hamilton (Senior Postdoctoral Research Assistant); Dr Chen Sun (Postdoctoral Research Associate); Bingjun Wang (DPhil candidate); Nikol Lambeva (DPhil candidate)
(Front row):
Florian Le Roux (DPhil candidate); Alice Smith (DPhil candidate); Professor Donal Bradley CBE FRS; Yuping Shi (DPhil candidate)

The Physics and Application of Soluble Semiconductors research group is based in the Physics and Engineering Departments at the University of Oxford. It has a broad research spectrum across semiconductor electronics, optoelectronics and photonics: from fundamental studies of materials and device physics, through novel micro-/nano-scale process development, to application-focused research on light emitting diodes, lasers, solar cells, transistors and biosensors. Professor Donal Bradley, one of the pioneers of plastic electronics, believes that the extension research laboratory based in OSCAR will greatly enhance collaboration with both academia and industry in China and offer an environment well-suited to innovation.

Solution processed conductors, semiconductors and insulators offer an attractive alternative to traditional vacuum deposited or crystalline wafer-based materials for many application sectors. They have the potential to broaden and simplify manufacturing methods, using coating and printing processes performed under ambient temperature and atmosphere, thereby helping to lower the capital and energy costs of fabrication. They may also support the development of formats beyond the scope of conventional devices; large area structures, conforming to curved surfaces, integrable with textiles or simply more robust than glass. The Physics and Application of Soluble Semiconductors laboratory at OSCAR will focus on novel materials development using molecular scale control to implement device performance improvement, on exploration of new application fields, on the elucidation of operation mechanisms towards building new device architectures and novel devices, and on manufacturing process optimization towards near-term commercialization. The laboratory will foster existing collaborations and open up new ones with colleagues in Suzhou, Nanjing, Guangzhou, Hong Kong, Macau, Changchun, Xi'an and elsewhere. It will also work closely with the Jiangsu Industrial Technology Research Institute (JITRI) in both China and Oxford (Oxford-JITRI IMPACT Institute).

Professor Donal Bradley is a Fellow of the Royal Society, Commander of the Order of the British Empire, Fellow of the Institute of Physics, Fellow of the Institution of Engineering and Technology, and a Chartered Engineer. He is currently Head of the Division of Mathematical, Physical & Life Sciences at the University of Oxford, overseeing the activities of ten departments (Mathematics, Statistics, Computer Science, Engineering Science, Materials, Physics, Chemistry, Earth Sciences, Plant Sciences, and Zoology). He is also a Professor in the Physics and Engineering Science Departments and a Professorial Fellow at Jesus College. Professor Bradley is known for his pioneering contributions to the development of molecular electronic materials and devices, including the invention of conjugated polymer electroluminescence, thereby helping to initiate the associated development of a new technology platform, widely known as Plastic or Printed Electronics. This platform embodies a paradigm shift towards low temperature, solution-based device fabrication with applications in energy efficient displays and lighting, photovoltaic energy generation, large-area electronics, medical diagnostics and with longer-term potential for optical communications. Professor Bradley has also actively promoted the commercialization of new technologies as a co-founder of Cambridge Display Technology Ltd (now a subsidiary of the Sumitomo Chemical Company) and Molecular Vision Ltd (now a subsidiary of the Abingdon Health Group), and a founding Director of Solar Press (UK) Ltd.



OSCAR Director is Invited by the Suzhou Government as Suzhou Talent Advisor

Venture Week for International Elites in Suzhou (VWIE), held every July by Suzhou Municipal Government, was inaugurated in 2009. It serves as a platform to attract high-level overseas innovation and business start-up talents. In 2017, a total of 3,057 participants from more than 20 countries and regions presents with 2,868 entrepreneurial projects. This year, it attracts 4618 talents worldwide with 5097 projects.

Prof Cui(left) and Secretary of Suzhou Municipal Party Committee, Mr. Zhou Naixiang, in meeting.

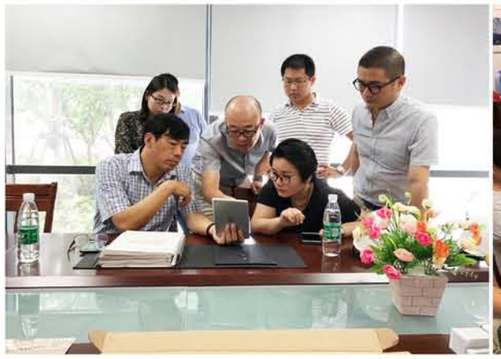
The aim of VWIE is to boost cluster effect of talents and projects in Suzhou engaging in the fields of new energy, new material, smart power grids, nanotechnology, medicine and biotechnology, modern equipment manufacturing, and some other emerging industries.

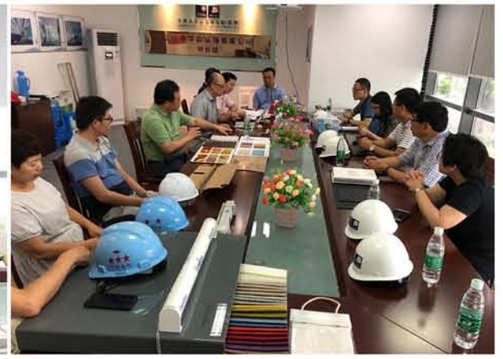
This year, the 10th VWIE, was held from July 10 to July 12. At the Opening Ceremony on July 10th, the awarding of first batch of Suzhou Municipal Special Talent Advisors was held. OSCAR director, Prof Zhanfeng Cui, was awarded as Suzhou Talent Advisor and invited to give a talent-focused speech to the audience of the opening, including Secretary of Suzhou Municipal Party Committee Mr. Zhou Naixiang, Suzhou Mayor Mr. Li Yaping, and Department Director Yu Jiadong from Ministry of Human Resources and Social Security of PRC, and other distinguished guests.

In his speech, Prof Cui typically briefed the audience of OSCAR's history, progress, mission, recruitment plan and others. Prof Cui drew special attention to why the University of Oxford chose to establish OSCAR, its first overseas research centre, in Suzhou. Much interest was aroused in the audience and media.

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

With accompany of General Manager Leah He and others, OSCAR Director prof Zhanfeng Cui visited construction site and attended the fit-out construction meeting during which he exchanged opinions with relevant teams about materials and colour choices, etc. At the end of the meeting, he thanked the construction staff for their hard work.





Updates on fit-out construction tendering process:

Fit-out construction is now under the process of government regulated public tendering. The construction companies for the five sections have been confirmed. (Construction Engineering Supervision, Non-lab Space Construction, Lab Space Construction, Air-conditioning Construction, IT Construction).

On-site construction:

The on-site Construction Permit has been approved by the relevant government authority, and on-site construction has started in the OSCAR building.

Meet OSCAR's New Staff

Dr Jingsong Huang, Senior Research Scientist in Professor Donal Bradley's group, has a 20-year track record of research activities in leading universities and industries. His specialty is plastic semiconducting material and device, especially in the application research of photovoltaics and light emitting diodes (LEDs). He holds B.S, M.S and Ph.D in the field of Microelectronics and Optoelectronics from Jilin University. For his Ph.D research work, he obtained China University Science and Technology Award (Second Prize) and Jilin Province Science and Technology Progress Award (First Prize). In 2000, he was awarded the prestigious Research Fellowship from Alexander von Humboldt Foundation and published the first highly efficient p-i-n multi-junction OLEDs with low operating voltage in Technische Universität Dresden. In 2002, he joined the Imperial College London and worked on solution-based LEDs and photodetectors. As a co-inventor of a novel interlayer lithographic method, he obtained Royal Society Brian Mercer Innovation Award UK. From 2006 to date, he has been developing his career in industries: as a Principal Scientist in Molecular Vision Ltd, he worked on optical detection system based on lab-on-a-chip platform for bio-medical uses; as a Senior Scientist in Solar Press Ltd, he worked on flexible solar cell with roll-to-roll manufacturing method; as a Senior Scientist in Oxford Photovoltaic Ltd, he exploited emerging perovskite technology and pursued its large-area manufacturing processes development towards commercialization of perovskite tandem solar cell. He has a proven track record of innovation (9 patent applications) and publications (>70 peer-reviewed journal paper).

Email: Jingsong.Huang@oxford-oscar.cn

Dr Yang Cao, Research Scientist of OSCAR, DPhil in Inorganic Chemistry of the University of Oxford.

He joined professor Luet Wong's group in 2012, focusing on engineering the P450(BM3) monooxygenase to manipulate stereo-, regio- and stereoselectivity towards non-natural substrate of WT P450(BM3) enzyme. Terpenes and Terpenoids are the main targets in the research to synthesize high add-value natural grade compounds via biotransformation, and to increase the diversity of hydroxylated products from naturally occurring compounds.

The research project, scalable process of oxidizing valencene to produce valuable natural grade nootkatone via biotransformation catalysed by P450(BM3) variant, is now under further development by Oxford Biotrans to meet the industrial requirement. The first batch of product will be launched soon.

Another research focus is on manipulating regio- and stereoselectivity of P450(BM3) enzyme via molecular biological techniques. Targeting on sesquiterpenes, the research goal is to activate all C-H bond at all potential positions, as well as to regulate stereoselective synthesis at each chiral centre on a substrate structure.

Email: Yang.Cao@oxford-oscar.cn

Alex Yang, as OSCAR JITRI Fellow, is responsible for liaison between OSCAR and JITRI and will coordinate collaborative activities between Oxford University and JITRI, and he will also promote OSCAR to Jiangsu industries to identify industrial collaborative research opportunities. Prior to this, Alex worked for University of Western Ontario Tech Transfer Office China Centre as BD Director for the past five years, in charge of developing local partners, business negotiation, patent application, fund raising, grant application and other works related to tech transfer & tech cooperation.

Alex also has 10 years' experience in working for Chinese pharmaceutical companies in international sales. Alex has obtained his BEng in Chemical Engineering and MMed in Pharmaceutical Analysis from Zhejiang University in 2000 and 2005.

Email: Alex.Yang@oxford-oscar.cn

Siyan Jin, Administrative Assistant to General Manager of OSCAR.
She graduated from Peking University in 2016 as a graduate student in English Translation. Since 2016 August, Jin worked in the Suzhou Municipal Foreign Affairs Office as liaison officer and interpreter for various events and international conferences for 2 years.
Email: Siyan.Jin@oxford-oscar.cn

Vailia Xue joined OSCAR as the Administrative Coordinator in June. She graduated from Kristianstad University (Sweden) in 2017. Currently she is responsible for administrative support and HR related work.
Email: Vailia.Xue@oxford-oscar.cn

Linling Xia is the Financial Assistant of OSCAR. In 2012, she completed her Certified Accounting Technician qualification and then worked in Singapore for two years. From 2014 to 2018, She worked as accountant and auditor in an accounting agency company.
Email: Linling.Xia@oxford-oscar.cn

Neighbours of OSCAR

Nanopolis Suzhou is a comprehensive industrial community that specializes in nanotechnology applications. It provides a full range of professional services to companies in respects of platform support, project investment, intellectual property rights, nanotech standardization, international collaboration, industrial alliance, industrial exchanges, funding application and training.

Today, Nanopolis Suzhou has become a gateway for international nanotech counterparts to access China as it has established diverse partnerships with over 20 countries and regions across the world, including Finland, Holland, Czech Republic, Germany, Korea, Japan, US and France. With the initiation of international nanotech centres (e.g. China-Finland Nano Innovation Center, Holland High Tech China Center and Czech Tech China Center) Nanopolis Suzhou is undoubtedly a 'bridgehead' connecting China to international industrial clusters.

China-Finland Nano Innovation Center
• Gears up the matchmaking between the two countries of various industrial resources

Holland High Tech China Center
• Aims to strengthen the cooperation on nanotechnol and MEMs industry between China and the Netherlan

CzechTech China Center
• Play a role as a bridge to connect China and the Czech Republic's high-tech resources and explore a long-term

Iran Nanotech China Center
• An non-profit organization for developing Nanotechnology cooperation between Iran and China

Ontario Nanotech Innovation Center
• Share nanotech industrial resources, investigation reports and market trends

For more information, please visit their website: www.nanopolis.cn/en/Index.aspx

News links in July

SIP Tech Outcomes Displayed at 10th VWIE

The 10th Venture Week for International Elites (VWIE) took place at Suzhou International Expo Centre in July, with 10 parallel events across 10 counties and districts within Suzhou and three in North America, Japan and the Republic of Korea. SIP set up a pavilion at the event, showcasing its business environment and outcomes in technology development.

Xiaobing, a Microsoft chatbot with compelling personality and sense of 'intelligence' for human conversations, served at the pavilion's entrance to guide the visitors in using natural language.

The interior of the pavilion showcased the latest products from SIP-based tech companies, such as a quantum dot screen boasting higher performance for eye protection, and a 46cm-high 3D printing machine that works at a speed 10 times faster than most of other 3D printers do.

http://www.sipac.gov.cn/english/categoryreport/IndustriesAndEnterprises/201807/t20180712_749882.htm

Summit on Offshore Innovation and Entrepreneurship Kicked off in SIP

Suzhou International Summit on Offshore Innovation and Entrepreneurship 2018 kicked off in SIP on July 11, gathering more than 150 representatives from domestic and overseas innovative organizations, startups and investors.

At the event, the participants held discussions to explore ways for stronger mutual development relying on offshore innovation and business support projects, which is believed to be an efficient mode for uniting global intelligent resources. David A. Weitz, a member of the National Academy of Engineers of the United States and a professor at Harvard University, shared his experiences and feelings about joining a Chinese offshore project.

Moreover, SIP IVY Offshore Innovation and Business Research Institute, which will dedicate to providing solutions for market-oriented operation of Suzhou's offshore innovation and business start-up bases, was inaugurated.

http://www.sipac.gov.cn/english/news/201807/t20180712_749850.htm

North American Leg of the 7th 1000 Talents Plan Startup Contest Concludes

The North American round of the 7th 1000 Talents Plan Startup Contest concluded in Silicon Valley, the United States, on 20 July. Of the 11 finalists, the teams from Medabome, Multiversemi, Ampcera, Neuvition, Sensely and Eyecloud garnered the top 6 places. Eyecloud bagged the 'Most Popular Project' award. Nearly 500 Chinese and American venture capital investors and startup operators participated in the award ceremony.

The finalists come from a wide range of fields, such as AI, new energy, biomedicine, new materials, medical equipment and comprehensive health. For example, Medabome is engaged in the development of therapeutic antibodies, immunotherapies and vitro diagnostic products, while Eyecloud deals with low-power and low-cost wireless AI-on-edge camera solutions.

Zhu Xuehua, science and technology counsellor of the Chinese Consulate General in San Francisco delivered a speech at the event. He encouraged Chinese and US parties to enhance exchange and win-win cooperation in innovation and business incubation. Zhu commented on Silicon Valley as home to a large number of global high-calibre talents and expected to see further cooperation between Silicon Valley and SIP which he hailed as "one of China's most active zones for innovation and entrepreneurship".

Wei Zhe, founder partner and chairman of Vision Knight Capital, spoke highly of the event. He said the projects with high technical content and the project developers who are so gifted at presenting and marketing their projects have set up good examples for Chinese startup operators. 'I hope those who didn't win in the competition will not lose heart. As long as you listen more to the voices of the customers and the market, there will be chances to win the favour of the investors,' he added.

The 1000 Talents Plan Startup Contest is an annual event initiated by SIP Venture Capital Community (run by the financing service arm of ORIZA Holdings) and Thousand Talents Program Experts Sodality in 2012. It is aimed at offering a helping hand to global new start-ups and teams that intend to start their own businesses in fundraising, marketing and seeking industrial cooperation.

The North American rivalry is the third leg of this year's event. The event will later head to China's Beijing, Chengdu and Xi'an, and the winners in all the six areas will compete in the final of the year.

http://www.sipac.gov.cn/english/news/201807/t20180725760652.htm