Contact us
Address: Building A, 388 Ruoshui Road, Suzhou Industrial Park, Jiangsu, P.R. China, 215123
Tel：0086-512-62869088
Email：info@oxford-oscar.cn
Website：https://oscar.web.ox.ac.uk/

联系我们
地址：中国江苏省苏州工业园区若水路388号A幢（215123）
电话：0086-512-62869088
电邮：info@oxford-oscar.cn
官网：https://oscar.web.ox.ac.uk/
微信公众号：牛津大学高等研究院（苏州）

WeChat / 微信公众号

OSCAR UNIVERSITY OF OXFORD

NEWSLETTER 053 DECEMBER 2021

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OSCAR Scientists' 'Year in Review' shines a light on future technologies

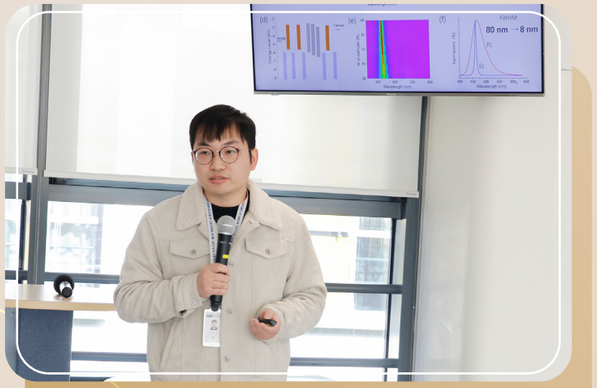
As the end of 2021 approached, OSCAR scientists gathered at the OSCAR Club on 17th December, ready to present their professional '2021 in Review' with their colleagues.

Dr Lin Jie, Optoelectronic Technology Lab

As is becoming tradition, OSCAR's annual 'Year in Review' convention this year remained a showcase of OSCAR's broad spread of research themes and a mechanism for open discussion and intellectual stimulation.

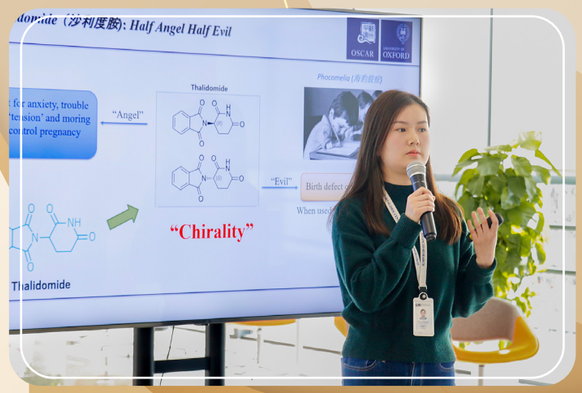
At the gathering, each laboratory laid out their field of cutting-edge research, which each holds the potential to answer some of the pressing medical, energy, environmental and financial questions facing humanity. Throughout the talks, speakers adopted creative use of multimedia and good humor, and left peer researchers and the administration team marveling at the prospect for OSCAR research to yield innovative future technologies.

Li Binbin, OSCAR-Prenetics ITC



Dr. Hu Yun, Optoelectronic Technology Lab

Dr. Muhammad Irfan Arif, Environmental and Synthetic Biology Lab



Dr. Xiong Ziyue, Chemistry Lab

Dr. Cao Yang, Chemistry Lab

Ji Xianglin, Synthetic Biology and Single-cell Biotechnology Lab

Dr. Wang Dandan, Functional Materials Lab

Dr. Liu Xiaosong, Functional Materials Lab

Dr. Jerry Liu, Energy Storage and Conversion Lab

Zeng Yida, Regenerative Medical Engineering Lab

Dr. Pei Haiyun, Regenerative Medical Engineering Lab

Alex Yang, Research Cooperation Section

Gui Yechen, Research Cooperation Section

Leah He, OSCAR General Manager

OSCAR General Manager Leah He, who hosted the meeting, said that 'this annual event is an effective platform to invite staff input and encourage intergroup communication'. She urged staff to keep up the excellent work in support of the mission, vision and objectives set forth in the OSCAR Strategic Plan 2021-2025. Leah also reiterated the spirit of 'Creativity, Reproducibility, Initiative, Standardization, and Productivity' or 'CRISP', upheld by Oxford University, encouraging OSCAR scientists to strive for excellence in their research, while the administration team were encouraged to ensure 'IREQ', i.e. 'Integrity', 'Reliability', 'Efficiency' and 'Quality', in providing support to our researchers, so that they can put their focus to tackling complex scientific challenges.

OSCAR 2021 in numbers

OSCAR was awarded its first 'Suzhou International Academician Workstation' by the Suzhou Municipal Science and Technology Department. The Workstation, led by OSCAR Director Prof. Zhanfeng Cui, focuses on the research and development of molecular diagnostics and in vitro cell amplification technologies.

2

OSCAR was awarded its 2nd 'Foreign Expert Workshop'. The Workshop is led by Prof. Luet who supervises the Biocatalysis, Enzyme Evolution and Synthetic Biology laboratory at OSCAR.

OSCAR's Phase 2 fit-out construction commenced in late November, transforming new spaces to house expanding research activities.

OSCAR filed 3 new patents (2 PCT applications) in 2021.

3

OSCAR celebrated its 3rd anniversary on 17th November.

The 4th Meeting of Oxford-SIP Cooperation and Development Board took place on 25th November, renewing both side's commitment to the OSCAR project, and bringing both parties on the same page about OSCAR's next steps.

4

4 sessions of the OSCAR Academic Seminar Series were held in 2021, offering interdisciplinary insights that help inspire new research questions.

9

9 research projects at OSCAR secured funding through diverse grant programmes.

13

OSCAR produced 13 new publications.

14

OSCAR welcomed 14 new researchers into its big family.

26

OSCAR scientists received 26 talent awards.

More than 50 business representatives showed up for the innovative biomedical project matchmaking held at OSCAR on 15th April.

50

1,000,000

OSCAR received $1 million grant from Prenetics to set up its first industry-sponsored Innovation and Technology Centre, dedicated to the development of molecular diagnostics.

OSCAR Recent Successes

OSCAR secures municipal level funding as a legal entity

OSCAR is one of the only two projects in the Suzhou Industrial Park selected this year to receive funding under the 'International Research Institute Programme'. The programme, supported by Suzhou Science and Technology Bureau, provides funding for a span of three years to legal entities that are engaged in physical sciences research and related technology development, and which connect advanced innovation resources efficiently across the globe.

This is the first time that OSCAR has been awarded funding as a legal entity from a municipal level funding agent, securing new resources for OSCAR's continuing success, a key priority for the next five years.

OSCAR named winner of '2021 SIP Integrated Innovation Award'

OSCAR was named winner of the '2021 Suzhou Industrial Park Integrated Innovation Award' at the Jinji Lake Conference and Award Ceremony held on 27th December.

Dr. Huang Jingsong, Co-PI and Head of OSCAR's Optoelectronic Technology Lab, attended the ceremony to accept the trophy.

The award was presented to OSCAR in recognition of its part in SIP's innovation and development.

Meet OSCAR's New Researcher

Dr. Liu Xiaosong
Research Scientist
in Prof. Mark Moloney's group

Dr. Liu Xiaosong joined OSCAR in December 2021 as a Research Scientist in Prof. Mark Moloney's surface science group. He earned his first PhD degree in Textile Science and Engineering (Textile Materials and Design) from Donghua University in 2015 and his second in Mechanical Engineering from Villanova University in 2021. His first PhD was focused on the deep-colouring mechanism of textile materials and design, and during this time, he spent one and half years as a visiting PhD student at the University of Georgia studying surface chemistry of fiber and polymers. Then, he switched to pursue his second PhD focusing on organic phase change materials (PCMs)-based nanomaterials for thermal energy storage applications, primarily concerning the synthesis of polymer shelled PCM core nanocapsules and its functionalization with nanoparticles, such as graphene quantum dots (GQDs) and silver nanorods, with the aim to enhance the thermal conductivity of nanocapsule assembly.

'I am grateful to Prof. Moloney for taking me into the big OSCAR family,' Xiaosong said, 'the vibe on research at OSCAR is so nice and pleasant, and very professional across the different research groups.' Dr. Liu previously showed great interest in the fabrication and characterization of functional nanomaterials. 'Nanomaterials are an increasingly important product of nanotechnologies, which are coming into use in varied fields, like healthcare, electronics, cosmetics and other potential areas.'

At OSCAR, Xiaosong's work mainly involves biscarbene synthesis and its applications in the surface modification of renewable biobased polymer. Biscarbene surface modification alters surface performance without changing the bulk properties of the materials, while nanomaterials could probably do either way when designed and synthesized properly in certain fashions. 'The combination of biscarbene surface modification and nanomaterials synthesis/fabrication holds great potential for enriching the functionalities and properties of materials.' said Xiaosong, 'Though it is expected that a bumpy road awaits such an attempt, we do have the confidence to fulfil such a goal, since OSCAR has many researchers talented in different fields, and we can exchange ideas and thoughts and learn from each other.'

OSCAR Outreach

OSCAR Senior Research Scientist invited to speak at the Fourth International Week Themed Forum, Soochow University

The Fourth International Week Themed Forum, Soochow University took place on 10th December.

The Forum this year was themed 'New Opportunities and Challenges: Exploration and Practice of University Internationalization in the Post-Covid-19 Era', and it was attended by eminent academics and leaders from universities and research institutes located in Suzhou.

Dr. Yun Wang, OSCAR Senior Research Scientist and Vice Director of the OSCAR-Prenetics ITC was one of the keynote speakers invited to the event. In her talk, Dr. Wang shared the story of how well-coordinated efforts between Oxford University and OSCAR led to the development and commercialization of the Covid-19 rapid testing technology with impressive efficiency, which is a strong example of the value of international cooperation in times of global emergencies.

OXFORD SUZHOU CENTRE FOR ADVANCED RESEARCH

Researcher team from CIAC visited OeTL at OSCAR

Dr. Gao Xiang from Changchun Institute of Applied Chemistry (CIAC), Chinese Academy of Sciences, visited the Optoelectronic Technology Laboratory (OeTL) on 23rd December to hold a seminar. Dr. Gao, from Prof. Qin Chuanjiang's research group at CIAC, introduced the group's research interests and recent study of perovskite optoelectronic materials and devices. All OeTL team members and visiting students were present at the seminar and took part in a lively discussion on material growth and application of 2D perovskites.

After the visit, OeTL and Prof. Qin's research group at CIAC will seek to cooperate with each other on research into new types of microcavity lasers.

SIP News in December

Females receive commendations for innovation and entrepreneurship

The winners of the 1st SIP Women Innovation and Entrepreneurship Competition were announced on December 8. Multiple contestants received awards for their start-up projects, and 10 female college students received accolades for their outstanding performance in a career assistance program designed to support female employment.

The competition was jointly sponsored by the SIP Working Committee on Women, Federation of Trade Unions and Youth League Working Committee with the aim of encouraging females to launch their own businesses and helping their start-up project through its first years of initiation.

OXFORD SUZHOU CENTRE FOR ADVANCED RESEARCH

The career assistance program, consisting of job recommendation, online and offline recruitment drives, information sessions and training, helped 206 female college students land jobs in SIP during this year's summer vacation.

After the award ceremony, four female entrepreneurs were invited to share with the participants their experience in launching and operating start-ups, followed by the launch of a training program on entrepreneurship and employment for women.