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

UNIVERSITY OF OXFORD

OSCAR

NEWSLETTER 036 JULY 2020

CONTENTS

RECENT OSCAR ACADEMIC PUBLISHING

Enqi Chen
Research Technician

Enqi Chen, a Research Technician in Prof. Mauro Pasta's Energy Storage and Conversion group, has recently published a review article in Materials Today Advances. The paper, entitled "2D layered noble metal dichalcogenides (Pt, Pd, Se, S) for electronics and energy applications" focuses on the Group 10 noble metal dichalcogenides; their atomic structure, synthesis strategies, defects and dopants, layer dependent band structure, electronic properties, electrochemistrical activity and their application in broadband optoelectronic devices.

Two-dimensional layered materials of transition metal dichalcogenides (TMDs) are attracting increasing attention because of their unique properties arising from their atomic structures, bandgaps, electronic properties, electrochemistry activities. These offer interesting potential applications in devices.

Materials Today Advances 7 (2020) 100076

Contents lists available at ScienceDirect

Materials Today Advances

journal homepage: www.journals.elsevier.com/materials-today-advances/

2D layered noble metal dichalcogenides (Pt, Pd, Se, S) for electronics and energy applications

E. Chen [a], W. Xu [a, b], J. Chen [b], J.H. Warner [c, d, e, *]

[a] Oxford Suzhou Centre for Advanced Research, Suzhou, 215123, Jiangsu Province, PR China
[b] Department of Materials, University of Oxford, Parks Road, Oxford, OX1 3PH, United Kingdom
[c] Walker Department of Mechanical Engineering, The University of Texas at Austin, Austin, TX, 78712, United States
[d] Materials Graduate Program, Texas Materials Institute, The University of Texas at Austin, Austin, TX, 78712, United States
[e] Department of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, 78712, United States

MEET OSCAR'S RESEARCHERS

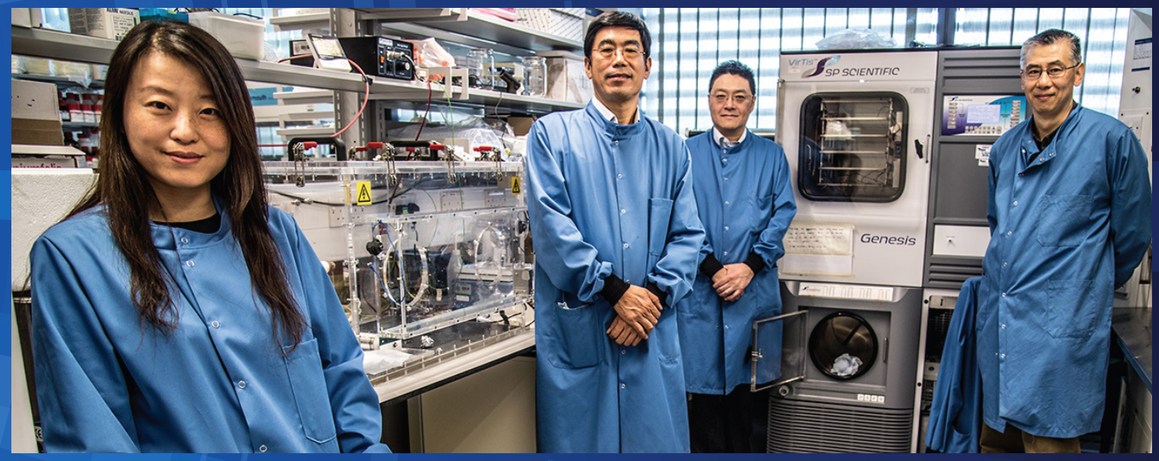
Hong Chang
Visiting Industrial Fellow at OSCAR

Dr. Hong Chang, Head of China Collaboration at Oxford MEStar Ltd., was appointed as a Visiting Industrial Fellow at OSCAR last month. This is an honorary position to encourage links with industry, increasing the strength and breadth of OSCAR's expertise and giving OSCAR researchers opportunities to learn new skills in specialist areas.

After completing her postdoctoral research at Oxford, Dr. Chang worked at a university spinout company producing biomedical engineered products and services. During her education and career, she has experienced biomedical product design and development at all stages. Her expertise in technology transfer and particularly regulatory approval and end-user interaction presents an excellent learning opportunity for OSCAR researchers.

Dr. Chang completed her bachelor's degree in Polymer Materials at Shenyang University of Chemical Technology before moving to the UK to study for her masters and doctoral degrees in Materials Science, both at Queen Mary, University of London. She undertook a postdoctoral position in Prof. Cui's lab at the University of Oxford. Her research there involved fabrication of tunable protein membranes for use as scaffolds in 3D cell culture.

OXFORD SUZHOU CENTRE FOR ADVANCED RESEARCH



She then joined Oxford MEStar, a spinout from the Institute of Biomedical Engineering (IBME) at the University of Oxford, as a project manager. MEStar has developed technologies and products for cell preservation, engineered tissue culture, autologous cell therapy and stem cell processing and delivery. Hong is now Head of China Collaboration at MEStar and is experienced in seeking and maintaining international cooperation.

Dr. Chang was heavily involved in development of the rapid test kit for COVID-19 created by Prof. Zhanfeng Cui, Prof. Wei Huang and their teams. She participated in early lab-based research at Oxford's IBME and was instrumental in demonstrating compliance and seeking regulatory approval. Her contribution helped the test kit, Oxsed RaVid Direct, gain its CE mark in early July.

MEET OSCAR'S RESEARCHERS

Optoelectronic Technologies Laboratory (OeTL) Researchers

Geng He
Assistant Research Technician / Prof. Donal Bradley's Group

Geng He's research work at OSCAR involves the design and fabrication of organic semiconductor material microcavity lasers. He earned his Master's degree from the School of Optoelectronic Science and Engineering at Soochow University in 2020. During his study, Geng participated in a joint training programme between the Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences, and was engaged in research of third-generation semiconductor material microcavity lasers, including device fabrication, characterization and related optical simulation.

Email: geng.he@oxford-oscar.cn

Wenwen Tao
Assistant Research Technician / Prof. Donal Bradley's Group

Wenwen Tao's research work at OSCAR involves the development and application of fully-solution processed organic light-emitting diodes. She earned her Master's degree from Soochow University with distinction as an Excellent Graduate in 2020. She was engaged in the design and synthesis of thermally activated delayed fluorescence emitters and their application on organic light-emitting diodes.

Email: wenwen.tao@oxford-oscar.cn

Yun Hu
Research Scientist / Prof. Paul Stavrinou's Group

Yun Hu received his Ph.D. from Soochow University in July 2020. His doctoral research focused on organic semiconductor devices and their properties, including carrier injection, transportation, recombination, and energy levels. His current research work at OSCAR centres around organic photodetectors and near-infrared organic light-emitting diodes.

Email: yun.hu@oxford-oscar.cn

OUTREACH AND COLLABORATION

OSCAR signed a CDA with Harbour Biomed to facilitate further discussion in collaborations regarding cell reactor technologies and single cell technology.

Leah He, General Manager at OSCAR, was invited to speak at a Senior Business Executive Seminar held by SIP on 10th July in Suzhou. During her presentation, Leah laid out OSCAR's progress to date and new initiatives to continue and expand OSCAR's research and technology innovation. She also talked about how OSCAR is uniquely positioned to offer exciting solutions to real-world challenges and discussed OSCAR's commitment to research cooperation, particularly seeking expanded collaboration and partnership with both academia and industry.

OSCAR met with Mr. Yi Liu, Chairman of Jiteji (Suzhou) Biotech Co., Ltd on July 28th. Jiteji has developed a LAMP diagnosis platform and is interested in collaborating with OSCAR's molecular diagnosis group to develop a diagnostic kit for various pathogens. OSCAR's team previously used LAMP technology as the basis for the COVID-19 rapid test and could use this to create a platform technology.

On July 23rd, Prof. Jie Lin from Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP) at the Chinese Academy of Sciences, visited researchers from OSCAR's OeTL group. Prof. Lin has over ten years experience in the research of novel nano-luminescence phenomena, organic microcavity semiconductor laser diode and mechanisms. OeTL Senior Researcher Dr. Jingsong Huang previously visited the group of Prof. Xinyuan Liu and Prof. Jie Lin in CIOMP last September. This time, Prof. Lin reciprocated the visit and officially launched the cooperation between the two parties in the research of high-quality microcavity diodes. At the invitation of Dr. Huang, Prof. Lin presented on the topic of "Research Progress of Organic Microcavity Semiconductor Lasers" during his visit.

The Suzhou Associaton of Industrial Parks comprises prominent industrial parks across China. On 17th July, the Association's Secretary-General Shen Yuan visited OSCAR to explore collaboration opportunities. The Association has close connections to tens of thousands of businesses across the country that specialize in advanced manufacturing, artificial intelligence, electronic information, big data, energy efficiency, biomedicine, new materials and culture. It aims to identify cooperation potential with all tech companies based in the many industrial parks in Suzhou.

A small delegation led by Mr. Lei Zhang, General Manager of Panasonic Factory Solutions Suzhou (PFSS), visited OSCAR on 23rd July. The delegation was given a tour of OSCAR's Innovation and Technology Centre (ITC) for Optoelectronics. Dr. Jingsong Huang, OSCAR Senior Research Scientist, shared with the delegation progress of his research work in advanced optoelectronic materials, multifunctional device fabrication and photonic membranes. PFSS talked about the technological challenges they have observed in their day-to-day manufacturing and showed interest in applying OSCAR's anti-reflective coating on some of their products. The visit laid a foundation for potential future collaborations between OSCAR and PFSS.

SIP NEWS FOR JULY

Suzhou increases efforts to develop production service industry

The Conference for Advancing Production Service Industry convened at the Suzhou International Expo Centre on 18th July. About 500 representatives from government departments, leading companies and venture capital institutions, among others, attended the conference.

A list of 28 first-batch leading enterprises in the production service industry was announced at the conference. A total of 20 key investment promotion projects were signed at the conference, promising to boost the city's production service industry.

Suzhou's production service industry includes:
① Information technology service
② R&D design
③ Financial service
④ Inspection, testing, and authentication
⑤ Intellectual property service
⑥ Energy conservation and environmental protection service
⑦ Human resources service
⑧ Modern supply chain management
⑨ Commercial service

Since the start of the "13th Five Year Plan", Suzhou's production service industry (PSI) has seen a yearly growth of 8.1% on average. In 2019, the added value of the city's PSI rose by 523.1 billion RMB.

According to a policy designed to facilitate innovation and development of PSI Cluster, Suzhou will provide subsidies based on national preferential taxation policies for advanced technological service enterprises. Additionally, high-contribution talents will be eligible for a grant 5% to 20% of their income (up to 400,000 RMB per year) if their annual income exceeds 400,000 RMB.
https://mp.weixin.qq.com/s/T70hJVMYi_F-0aj1DeVkrw

Suzhou placed 6th in China's top 100 foreign trade cities

Suzhou was ranked the 6th on the latest list of China's top 100 foreign trade cities in 2019, according to the General Administration of Customs.

The selection criteria of 25 indicators include foreign trade competitiveness and structural competitiveness among the country's municipalities, such as Beijing and Shanghai, as well as prefecture-level cities.

Suzhou has sought to consolidate its position as a leader in this area by adopting multiple new policies to facilitate steady development of foreign trade in the wake of the COVID-19 outbreak.

SIP will remain a strong magnet to foreign investors

Despite the impact of COVID-19 in the first half of this year, Suzhou Industrial Park achieved a GDP of 129.051 billion RMB, representing a year-on-year increase of 2.1 percent. Remarkable progress was also made in attracting foreign investment and boosting international trade.

During the period, the Park realized 305.245 billion RMB in foreign trade value, up 4.5 percent year on year. The imports and exports in IC industry rose 13.24 percent year on year to reach $20.048 billion. Meanwhile, the Park saw a registered foreign investment of $2.07 billion, a year-on-year growth of 149 percent. The paid-in foreign investment climbed by 196 percent to reach $1.28 billion.

The Park has strengthened efforts to improve the environment for investment and trade, government service, innovation and entrepreneurship, and urban livability. To support this, the Park has also made comprehensive efforts to promote epidemic prevention and control and assist companies in resuming work. Measures such as tax relief, fee cuts, financing service, and employee support have greatly enhanced investor confidence.

In recent months, several critical projects have settled down in the park, where some foreign-funded enterprises also increased their registered capital or expanded production.
https://mp.weixin.qq.com/s/rImQc9rti4ZuH3QnEftSYg