Jian Zhen Ou

Associate Professor, Director of Advanced Electronics and Sensors, School of Engineering, RMIT University, Australia

Adjunct Professor, Director of Joint Laboratory of Nanoscale Functional Materials and Sensing, School of Materials Science and Engineering, Southwest Jiaotong University, China

E-mails: jianzhen.ou@rmit.edu.au; Jzou@swjtu.edu.cn

ORCID ID: 0000-0002-6971-2634

Brief Biosketch of Prof. Jian Zhen Ou

Prof. Jian Zhen Ou is the director of Advanced Electronics and Sensors, School of Engineering, RMIT University, Australia and the director of Joint Laboratory of Nanoscale Functional Materials and Sensing, School of Materials Science and Engineering, Southwest Jiaotong University, China. His research interests include two-dimensional materials, chemical and biological sensing, nanoscale electronics, and artificial intelligence-driven sensors. He has over 130 peer-reviewed publications in top journals including Nature Materials, Nature Communications, Advanced Materials, Nano Today, ACS Nano, Nano Letters, and Advanced Functional Materials, with more than 11,000 citations and an h-index of 54. He was the recipient of several prestigious awards, including Victoria Fellow (2017), Malcolm Moore Industry Award by RMIT (2017), Discovery ECR Award by Australian Research Council (2016), Research Award of Excellence-ECR (Technology) by RMIT (2016), and Europe AMA Innovation Award Finalist by Association of Sensors + Measurement (2016). He was also selected as the top emerging leader in Engineering and Computer Science by The Australian Research Magazine in both 2018 and 2019. Prof. Ou is currently holding four international patents on “Human Gas Sensing Capsule” and has been the scientific advisor for RMIT’s spin-off company Atmo Biosciences Ltd since 2019.

The full Curriculum Vitae (CV) and lists of publications of Prof. Jian Zhen Ou are enclosed.

Expertise Areas:

Chemical sensors, biological sensors, low-dimensional materials, catalysts, and machine learning-assisted sensors

Prof. Jian Zhen Ou

Contacts

Address: School of Engineering, RMIT University, Australia
School of Materials Science and Engineering, Southwest Jiaotong University, China

Contact: +61 3 9925 2946 (work); +61 (0) 433926853 (mobile)

Email: Jianzhen.ou@rmit.edu.au; jzou@swjtu.edu.cn

Key Research Activities

- Two-dimensional materials
- Nanoelectronics
- Nanoplasmonics
- Chemical and biological sensors

Education Background

2009 — 2012	Doctor of Philosophy (Ph.D.), RMIT University, Melbourne, Australia.
2005 — 2008	Bachelor of Engineering (B.Eng., Honours First Class), RMIT University, Melbourne, Australia

Employment History

01/2020 — Current	Associate Professor, RMIT University
06/2019 — 12/2019	Senior Lecturer, RMIT University
06/2019 — Current	Director of the Joint Laboratory of Nanoscale Functional Materials and Nanosensing, Southwest Jiaotong University, China
05/2018 — Current	Director of the RMIT's Centre for Advanced Electronics and Sensors (CADES)
06/2018 — Current	Adjunct Professor, Southwest Jiaotong University, China
01/2017 — 03/2019	Senior Research Fellow (ARC DECRA Fellow), RMIT University
06/2016 — 12/2016	Research Fellow (ARC DECRA Fellow), RMIT University
09/2014 — 12/2014	Visiting scholar, Massachusetts Institute of Technology (MIT), USA
11/2012 — 05/2016	Postdoctoral Research Fellow, RMIT University

Research Students Supervision

Completion:

14 PhD students

Currently as primary supervisor:

10 PhD students

Awards and Distinction

2018, 2019	Top emerging Australian leader in Engineering & Computer Sciences, The Australian
2017	Victoria Fellowship, $18,000
2017	Malcolm Moore Industry Award, $35,000
2017	RMIT University Media Star
2016	RMIT Research Award of Excellence-Early Career Researcher (Technology), $3,000.
2016	Europe AMA Innovation Award Finalist
2015	Australia Research Council Discovery Early Career Research Award (DECRA)
2014	RMIT University Early Career Researchers International Travel Award, $6,800.

2012 Chinese Government Award of Outstanding Student Aboard, US$6,000.

Competitive Grants and Industry Contracts

Chief Investigator Australia Research Council DECRA Grant, "*Tunable plasmonics in ultra-doped transition metal oxides and chalcogenides*", $330,000, 2016-2019

Chief Investigator Accelerating Commercialisation Grant, Australian Government Department of Industry, Innovation and Science, "*Human gas monitoring capsule: A novel diagnostic device*", $243,111, 2016-2017

Chief Investigator Australia Research Council DISOVERY Grant, *"Exploring Piezoelectricity of Two-dimensional Nanocrystals and Nanodevices"*, $307,239, 2018-2020.

Chief Investigator Australia Research Council LINKAGE Grant, *"National Facility for Nanoscale Characterisation of Luminescent Materials"*, $541,705, 2018.

Chief Investigator Australia Research Council LINKAGE Grant, *"Facility for electric & magnetic probes of materials at extreme conditions"*, $824,080, 2018.

Chief Investigator ATSE Bridge Grant, "*RFID tag-based Food sensors*", $67,000, 2019 - 2020

Committee and Editorial Duties

Conference organising committee

- 2018 IEEE SENSORS Conference, New Delhi, India
- 2017 IEEE SENSORS Conference, Glasgow, UK
- 2016 IEEE SENSORS Conference, Orlando, USA
- 2016 9th PRICM, Kyoto, Japan
- 2015 IEEE SENSORS Conference, Busan, South Korea

Journal editorial duty

- 2018 - Current Editorial Broad Member, *Sensors*
- 2018 Guest Editor, *Beilstein Journal of Nanotechnology*

Research Publications and Presentations

Publication and Presentation Summary (2011 – Present)

Peer-Reviewed Publications		Presentations	
Journal articles	138	Oral presentations	13
Conference proceedings	10	Poster presentations	17
Total	**148**	**Total**	**30**

Citation Summary as in Oct 2021 (Ref: Google Scholar)

Citation: 11,100 **h-index:** 54

Selective publications:

[1] Bao Yue Zhang, Kai Xu, Qifeng Yao, Azmira Jannat, Guanghui Ren, Matthew R. Field, Xiaoming Wen, Chunhua Zhou, Ali Zavabeti & Jian Zhen Ou 2021, 'Hexagonal metal oxide monolayers derived from the metal-gas interface', *Nature Materials*, doi:10.1038/s41563-020-00899-9.

[2] Jannat, Azmira, Syed, Nitu, Xu, Kai, Rahman, Md. Ataur, Talukder, Md. Mehdi Masud, Messalea, Kibret A., Mohiuddin, Md.,Datta, Robi S., Khan, Muhammad Waqas, Alkathiri, Turki, Murdoch, Billy J., Reza, Syed Zahin, Li,

Jing, Daeneke, Torben, Zavabeti, Ali & Ou, Jian Zhen 2021, ‘Printable Single-Unit-Cell-Thick Transparent Zinc-Doped Indium Oxides with Efficient Electron Transport Properties’, *ACS Nano*, doi:10.1021/acsnano.0c06791.

[3] Kai Xu, Bao Yue Zhang, Md Mohiuddin, Nam Ha, Xiaoming Wen, Chunhua Zhou, Yongxiang Li, Guanghui Ren, Haijiao Zhang, Ali Zavabeti & Jian Zhen Ou 2021, ‘Free-standing ultra-thin Janus indium oxysulfide for ultrasensitive visible-light-driven optoelectronic chemical sensing’, *Nano Today*, vol. 37, pp. 101096, doi:https://doi.org/10.1016/j.nantod.2021.101096.

[4] Ren, Guanghui, Zhang, Bao Yue, Yao, Qifeng, Zavabeti, Ali, Huertas, Cesar S, Brkljača, Robert, Khan, Muhammad Waqas, Nili, Hussein, Datta, Robi S, Khan, Hareem, Jannat, Azmira, Walia, Sumeet, Haque, Farjana, O’Dell, Luke A, Wang, Yichao, Zhu, Lianqing, Mitchell, Arnan & Ou, Jian Zhen 2019, ‘An Ultrasensitive Silicon Photonic Ion Sensor Enabled by 2D Plasmonic Molybdenum Oxide’, *Small*, vol. 15, pp. 1805251.

[5] Jannat, Azmira, Yao, Qifeng, Zavabeti, Ali, Syed, Nitu, Zhang, Bao Yue, Ahmed, Taimur, Kuriakose, Sruthi, Mohiuddin, Md, Pillai, Naresh, Haque, Farjana, Ren, Guanghui, Cheng, Ningyan, Du, Yi, Tawfik, Sherif Abdulkader, Spencer, Michelle JS, Murdoch, Billy J, Wang, Lan, McConville, Chris F, Walia, Sumeet, Daeneke, Torben, Zhu, Lianqing & Ou, Jian Zhen 2020, ‘Ordered-vacancy-enabled indium sulphide printed in wafer-scale with enhanced electron mobility’, *Materials Horizons*, vol. 7, pp. 827-834.

[6] Mohiuddin, Md, Zavabeti, Ali, Haque, Farjana, Mahmood, Asif, Datta, Robi, Syed, Nitu, Khan, Muhammad Waqas, Jannat, Azmira, Messalea, Kibret, Zhang, Baoyue, Chen, Guanyu, Zhang, Haijiao, Ou, Jian Zhen & Mahmood, Nasir 2020, ‘Synthesis of Two-Dimensional Hematite and Iron Phosphide for Hydrogen Evaluation’, *Journal of Materials Chemistry A*, vol. 8, pp. 2789-2797.

[7] Zhang, Bao Yue, Zavabeti, Ali, Chrimes, Adam F, Haque, Farjana, O’Dell, Luke A, Khan, Hareem, Syed, Nitu,

Datta, Robi, Wang, Yichao, Chesman, Anthony SR, Daeneke, Torben, Kalantar‐zadeh, Kourosh & Ou, Jian Zhen 2018, ‘Degenerately hydrogen doped molybdenum oxide nanodisks for ultrasensitive plasmonic biosensing’, *Advanced Functional Materials*, vol. 28, no. 11, pp. 1706006.

[8] Haque, Farjana, Zavabeti, Ali, Zhang, Bao Yue, Datta, Robi S, Yin, Yuefeng, Yi, Zhifeng, Wang, Yichao, Mahmood, Nasir, Pillai, Naresh, Syed, Nitu, Khan, Hareem, Jannat, Azmira, Wang, Ning, Medhekar, Nikhil, Kalantar-Zadeh, Kourosh & Ou, Jian Zhen 2019, ‘Ordered intracrystalline pores in planar molybdenum oxide for enhanced alkaline hydrogen evolution’, *Journal of Materials Chemistry A*, vol. 7, no. 1, pp. 257‐268.

[9] Zavabeti, Ali, Ou, Jian Zhen, Carey, Benjamin J, Syed, Nitu, Orrell-Trigg, Rebecca, Mayes, Edwin LH, Xu, Chenglong, Kavehei, Omid, O’Mullane, Anthony P, Kaner, Richard B & others 2017, ‘A liquid metal reaction environment for the room-temperature synthesis of atomically thin metal oxides’, *Science*, vol. 358, no. 6361, pp. 332‐335.

[10] Alsaif, Manal MYA, Chrimes, Adam F, Daeneke, Torben, Balendhran, Sivacarendran, Bellisario, Darin O, Son, Youngwoo, Field, Matthew R, Zhang, Wei, Nili, Hussein, Nguyen, Emily P, Latham, Kay, Embden, Joel van, Strano, Michael S, Ou, Jian Zhen, Kalantar-zadeh, Kourosh 2016, ‘High-performance field effect transistors using electronic inks of 2D molybdenum oxide nanoflakes’, *Advanced Functional Materials*, vol. 26, no. 1, pp. 91‐100.