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## **PROFESSIONAL EXPERIENCE**

- Assistant Professor, School of Materials Science & Engineering, Nanyang Technological University, Singapore, 10/2012 to present
- Postdoctoral Research Associate, Massachusetts Institute of Technology, Cambridge, 10/2009-9/2012
- Visiting Scientist, Institute of Physics, Chinese Academic of Sciences, Beijing, 3/2009-9/2009
- Research Associate, Chemistry Department, State University of New York at Binghamton, Binghamton, 5/2007-2/2009
- Research Assistant, Chemistry Department, Brown University, Providence, 10/2005-4/2007

## **EDUCATION**

- Ph.D. in Chemistry (Electro-analytical), June 2008, Lanzhou University, Institute of Physics CAS, & Brown University
- B.S. Chemistry (Hons), June 2002, Lanzhou University

## **ACADEMIC SERVICE**

- Reviewers for peer-review top journals published by NPG, ACS, Elsevier, Springer, Wiley, RSC, and etc.
- Guest Editor, *Electrochimica Acta*, *Special Issue of ICEI2016*
- Associate Editor, *Nano-Micro Letters*
- Conference Chair, 14<sup>th</sup> International Conference on Electrified Interfaces, 3-8 July, 2016, Singapore
- Symposium Chair, 9<sup>th</sup> Singapore International Chemistry Conference, Symposium 4: Energy Storage Materials, Characterization and Understanding, 11-14 December 2016, Singapore
- Member of Scientific Advisory Committee, 6<sup>th</sup> European PEFC & Electrolyser Forum 2017, Luzern, Switzerland

## **AWARDS & RECOGNITIONS**

- Top 10% highly cited author in General Chemistry portfolio of journals published by Royal Society of Chemistry (RSC)
- Teacher of the Year, School of Materials Science and Engineering, Nanyang Technological University, 2016

## **TEACHING**

- Lecturer for MS7020 (Advanced Topics in Polymer Chemistry), NTU, AY2014-present
- Lecturer for MS4014 (Nanomaterials: fundamental and applications), NTU, AY2014-present
- Mentor, URECA programme, NTU, AY2015 and AY2016

- Mentor, UROP programme, NTU, AY2016
- Mentor, NRP programme, NTU, AY2016
- Mentor, RVHS/ACJC for MSE Research Mentorship Program 2016
- Mentor, NED Energy Challenge, Institute of Engineering, Singapore, 2015 and 2016
- Lecturer, Outreach Activity Workshops in nanotechnology and renewable energy, NTU
- Instructor of Undergraduate Research Opportunities Program (UROP), MIT, 2009-2012

## **PUBLICATIONS**

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By Web of Science: Citation>4800, H-index=28, as of Jan 2017, ResearcherID: D-1661-2013.

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1. Shengnan Sun, Libo Sun, Shibo Xi, Yonghua Du, M.U. Anu Prathap, Zilong Wang, Qichun Zhang, Adrian Fisher, Zhichuan J. Xu, Electrochemical oxidation of C3 saturated alcohols on Co<sub>3</sub>O<sub>4</sub> in alkaline, *Electrochimica Acta*, 2017, 228, 183-194

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2. Luyuan Paul Wang, Yann Leconte, Zhenxing Feng, Chao Wei, Yi Zhao, Qing Ma, Wenqian Xu, Samantha Bourrioux, Philippe Azais, Madhavi Srinivasan, Zhichuan J. Xu, Novel Preparation of N-doped SnO<sub>2</sub> Nanoparticles via Laser-Assisted Pyrolysis: Demonstration of Exceptional Lithium Storage Properties, *Advanced Materials*, 2016, DOI: 10.1002/adma.201603286
3. Yi. Zhao, Luyuan Paul Wang, M. T. Sougrati, Zhenxing Feng, Yann Leconte, Adrian. Fisher, Madhavi. Srinivasan, Zhichuan. J. Xu, A review on design strategies for carbon based metal oxides and sulfides nanocomposites for high performance Li and Na ion battery anodes, *Advanced Energy Materials*, 2016, DOI: 10.1002/aenm.201601424
4. Hualiang Lv, Yuhang Guo, Yue Zhao, Haiqian Zhang, Baoshan Zhang, Guangbin Ji, Zhichuan J. Xu, Achieving tunable electromagnetic absorber via graphene/carbon sphere composites, *Carbon*, 2016, 110, 130-137
5. Naiqiang Liu, Fei Ai, Weikun Wang, Hongyuan Shao, Hao Zhang, Anbang Wang, Zhichuan J. Xu, Yaqin Huang, Nano-hydroxyapatite as an Efficient Polysulfide Absorbent for High-performance Li-S Batteries, *Electrochimica Acta*, 2016, 215, 162-170
6. Jian Xie, Zilong Wang, Peiyang Gu, Yi Zhao, Zhichuan J. Xu, Qichun Zhang, A novel quinone-based polymer electrode for high performance lithium-ion batteries, *Science China Materials*, 2016, 59, 6-11
7. Zhicheng Zhang, Zhimin Luo, Bo Chen, Chao Wei, Jian Zhao, Junze Chen, Xiao Zhang, Zhuangchai Lai, Zhanxi Fan, Chaoliang Tan, Meiting Zhao, Qipeng Lu, Bing Li, Yun Zong, Chengcheng Yan, Guoxiong Wang, Zhichuan J. Xu, Hua Zhang, One-Pot Synthesis of Highly Anisotropic Five-Fold-Twinned PtCu Nanoframes Used as a Bifunctional Electrocatalyst for Oxygen Reduction and Methanol Oxidation, *Advanced Materials*, 2016, DOI: 10.1002/adma.201603075
8. Tam D. Nguyen, Günther G. Scherer, Zhichuan J. Xu, A Facile Synthesis of Size-Controllable IrO<sub>2</sub> and RuO<sub>2</sub> Nanoparticles for the Oxygen Evolution Reaction, *Electrocatalysis*, 2016, 7, 420-427
9. Chao Wei, Zhenxing Feng, Murat Baisariyev, Linghui Yu, Li Zeng, Tianpin Wu, Haiyan Zhao, Yaqin Huang, Michael J. Bedzyk, Thirumany Sritharan, Zhichuan J. Xu, Valence Change Ability and Geometrical Occupation of Substitution Cations Determine the Pseudocapacitance of Spinel Ferrite XFe<sub>2</sub>O<sub>4</sub> (X = Mn, Co, Ni, Fe), *Chemistry of*

- Materials*, 2016, 28, 4129–4133
10. Yu Zhang, Huanwen Wang, Zhongzhen Luo, Hui Teng Tan, Bing Li, Shengnan Sun, Zhong Li, Yun Zong, Zhichuan J. Xu, Yanhui Yang, Khiam Aik Khor, Qingyu Yan, An Air-Stable Densely Packed Phosphorene–Graphene Composite Toward Advanced Lithium Storage Properties, *Advanced Energy Materials*, DOI: 10.1002/aenm.201600453
  11. Liling Zhang, Chao Yang, Nantao Hu, Zhi Yang, Hao Wei, Changxin Chen, Liangming Wei, Zhichuan J. Xu, Yafei Zhang, Steamed water engineering mechanically robust graphene films for high-performance electrochemical capacitive energy storage, *Nano Energy*, 2016, 26, 668–676
  12. Chao Yang, Liling Zhang, Nantao Hu, Zhi Yang, Hao Wei, Zhichuan J. Xu, Yanyan Wang, Yafei Zhang, Densely-packed graphene/conducting polymer nanoparticle papers for high-volumetric-performance flexible all-solid-state supercapacitors, *Applied Surface Science*, 2016, 379, 206–212
  13. Ying Wang, Yuanmiao Sun, Hanbin Liao, Shengnan Sun, Shuzhou Li, Joel W. Ager III, Zhichuan J. Xu, Activation Effect of Electrochemical Cycling on Gold Nanoparticles towards the Hydrogen Evolution Reaction in Sulfuric Acid, *Electrochimica Acta*, 2016, 209, 440–447
  14. Jian Xie, Xianhong Rui, Peiyang Gu, Jiansheng Wu, Zhichuan J. Xu, Qingyu Yan, Qichun Zhang, Novel Conjugated Ladder-Structured Oligomer Anode with High Lithium Storage and Long Cycling Capability, *ACS Applied Materials & Interfaces*, 2016, 8, 16932–16938
  15. Sheng Long Gaw, Jingxian Wang, Shengnan Sun, Zhili Dong, Meital Reches, Pooi See Lee, Zhichuan J. Xu, Electrochemical Cycling Induced Surface Segregation of AuPt Nanoparticles in HClO<sub>4</sub> and H<sub>2</sub>SO<sub>4</sub>, *Journal of The Electrochemical Society*, 2016, 163, F752-F760
  16. Pei-Yang Gu, Yi Zhao, Jian Xie, Nursimaa Binte Ali, Lina Nie, Zhichuan J. Xu, Qichun Zhang, Improving the Performance of Lithium–Sulfur Batteries by Employing Polyimide Particles as Hosting Matrixes, *ACS Applied Materials & Interfaces*, 2016, 8, 7464–7470
  17. Hualiang Lv, Haiqian Zhang, Guangbin Ji, Zhichuan J. Xu, Interface Strategy To Achieve Tunable High Frequency Attenuation, *ACS Applied Materials & Interfaces*, 2016, 8, 6529–6538
  18. Min Wang, Xiaochun Hou, Christian Wiraja, Libo Sun, Zhichuan J. Xu, Chenjie Xu, Smart Magnetic Nanosensors Synthesized through Layer-by-Layer Deposition of Molecular Beacons for Noninvasive and Longitudinal Monitoring of Cellular mRNA, *ACS Applied Materials & Interfaces*, 2016, 8, 5877–5886
  19. M.U. Anu Prathap, Shengnan Sun, Zhichuan J. Xu, An electrochemical sensor highly selective for lindane determination: a comparative study using three different  $\alpha$ -MnO<sub>2</sub> nanostructures, *RSC Advances*, 2016, 6, 22973-22979
  20. Zhihong Yang, Tong Xue, Linghui Yu, Guangbin Ji, Guoyue Xu, Zhichuan J. Xu, Nanocasting synthesis of Fe<sub>3</sub>O<sub>4</sub>@HTC nanocapsules and their superior electromagnetic properties, *RSC Advances*, 2016, 6, 20386-20391
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  22. Shengnan Sun, Ye Zhou, Benlin Hu, Qichun Zhang, Zhichuan J. Xu, Ethylene glycol and ethanol oxidation on spinel Ni-Co oxides in alkaline, *Journal of The Electrochemical Society*,

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23. Wei Shi, Xinyu Liu, Chao Wei, Zhichuan J. Xu, Stanley Siong Wei Sim, Linbo Liu, Chenjie Xu, Micro-optical coherence tomography tracking of magnetic gene transfection via Au-Fe<sub>3</sub>O<sub>4</sub> dumbbell nanoparticles, *Nanoscale*, 2015, 7, 17249-17253
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34. M.U. Anu Prathap, Chao Wei, Shengnan Sun, Zhichuan J. Xu, A New Insight into Electrochemical Detection of Eugenol by Hierarchical Sheaf-like NiCo<sub>2</sub>O<sub>4</sub> Nanosheets, *Nano Research*, 2015, 8, 2636-2645.
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36. Jing Zheng, Guangbin Ji, Peng Zhang, Xingzhong Cao, Baoyi Wang, Linhui Yu, Zhichuan J. Xu, Facile Aluminum Reduction Synthesis of Blue TiO<sub>2</sub> with Oxygen Deficiency for

Lithium-Ion Batteries, *Chemistry A European Journal*, 2015, 21, 18309-18315

37. Shengnan Sun, Zhichuan J. Xu, Composition dependence of methanol oxidation activity in nickel-cobalt hydroxides and oxides: an optimization toward highly active electrodes, *Electrochimica Acta*, 2015, 165, 56-66.
38. Xiao Zhang, Haiming Xie, Zhengdong Liu, Chaoliang Tan, Zhimin Luo, Hai Li, Jiadan Lin, Liqun Sun, Wei Chen, Zhichuan Xu, Linghai Xie, Wei Huang, Hua Zhang, Black Phosphorus Quantum Dots, *Angew. Chem. Int. Ed.*, 2015, 54, 3653–3657
39. Shiji Hao, Bowei Zhang, Sarah Ball, Mark Copley, Zhichuan Xu, Madhavi Srinivasan, Kun Zhou, Subodh Mhaisalkar, Yizhong Huang, Synthesis of multimodal porous  $\text{ZnCo}_2\text{O}_4$  and its electrochemical properties as an anode material for lithium ion batteries, *Journal of Power Sources*, 2015, 294, 112-119.
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42. Hanbin Liao, Adrian Fisher, Zhichuan J. Xu, Surface segregation in bimetallic nanoparticles: a critical issue in electrocatalyst engineering, *Small*, 2015, 11, 3221-3246.
43. M. U. Anu Prathap, Shengnan Sun, Chao Wei, Zhichuan J. Xu, A novel non-enzymatic lindane sensor based on  $\text{CuO}/\text{MnO}_2$  hierarchical nano-microstructures for enhanced sensitivity, *Chemical Communications*, 2015, 51, 4376 - 4379
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52. Hsin-Yi Wang, Jiazang Chen, Sunny Hy, Linghui Yu, Zhichuan Xu, Bin Liu, High-surface-area mesoporous TiO<sub>2</sub> microspheres via one-step nanoparticle self-assembly for enhanced lithium-ion storage, *Nanoscale*, 2014, 6, 14926-14931
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56. Chao Wei, Pooi See Lee, Zhichuan Xu, A comparison of carbon supports in MnO<sub>2</sub>/C supercapacitors, *RSC Advances*, 2014, 4, 31416-31423. (Invited)
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63. Jin Suntivich, Zhichuan Xu (co-first), Christopher E. Carlton, Junhyung Kim, Binghong Han, Seung Woo Lee, Nicéphore Bonnet, Nicola Marzari, Lawrence F. Allard, Hubert A. Gasteiger, Kimberly Hamad-Schifferli, Yang Shao-Horn, Surface Composition Tuning of Au–Pt Bimetallic Nanoparticles for Enhanced Carbon Monoxide and Methanol Electro-oxidation, *J. Am. Chem. Soc.*, 135 (2013), 7985

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67. Zhichuan Xu, Yanglong Hou, Shouheng Sun, Magnetic core/shell Fe<sub>3</sub>O<sub>4</sub>/Au and Fe<sub>3</sub>O<sub>4</sub>/Au/Ag nanoparticles with tunable plasmonic properties, *J. Am. Chem. Soc.* 129 (2007) 8698.
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### **PATENT APPLICATION**

1. Zhichuan Xu, A carbon monoxide oxidation catalyst using incineration ash as materials and the fabrication method, Singapore Patent Application Ref. PAT/069/15/15/SG PRV
2. Tran Dinh Phong, Zhichuan Xu, Jian Zhao, A Copper Electrode, The Fabrication Method, And Generating Hydrogen From Water Using The Same, Singapore Patent Application Ref. PAT/259/14/15/SG PRV
3. Chuan-Jian Zhong, Jin Luo, Zhichuan Xu, Ting He, Synthesis of PtCo nanoparticles, U.S. Patent number: US 20100018346 A1

### **CONFERENCE AND PRESENTATIONS**

1. Invited Talk, 9<sup>th</sup> Singapore International Chemistry Conference, 11-14 December 2016, Singapore
2. Invited Lecture, 4<sup>th</sup> International Symposium on Electrocatalysis (ECAT2016), 11-14 September, 2016, Japan
3. Invited Seminar, Beijing University of Chemical Engineering, 10/06/2016, China
4. Talk, 14<sup>th</sup> International Conference on Electrified Interfaces, 3-8 July, 2016, Singapore
5. Invited Seminar, Soochow University, 04/06/2016, China
6. Invited Talk, International Symposium on Energy Conversion and Storage, 31 May – 1 June, 2015, RSC, IPE-CAS, China
7. Invited Talk, 251<sup>st</sup> ACS National Meeting & Exposition, March 13-17, 2016, San Diego, USA
8. Invited Talk, University of California, Santa Cruz, 19/06/2015, USA
9. Invited Talk, University of California, Irvine, 22 June, 2015, USA
10. Invited Talk, The 29<sup>th</sup> Chinese Chemical Society Congress, 5 September, 2014, China
11. Invited Talk, 2013 National Conference for Nanosciences, Surface and Graphene Related Sciences and Technologies, 22 December, 2013, Hong Kong
12. Invited Talk, Nanjing University of Aeronautics and Astronautics, 15 December, 2014, China
13. Invited Talk, Institute of Physics, CAS, 29 November, 2013, China
14. Invited Talk, Peking University, 02 December, 2013, China
15. Invited Talk, Brown University, 30 May, 2013, USA
16. Talk, ACS 2010 Fall Meeting, Boston, August, 2010, USA
17. Talk, MRS 2010 Fall Meeting, Boston, November, 2010, USA
18. Talk, ACS 2008 Fall Meeting, Philadelphia, August, 2008, USA