



### Upcoming events

**EEST2016 CONFERENCE KUNMING CHINA. AUG 16-22, 2016**

Abstract submission deadline: May 31, 2016

Early registration deadline: June 15, 2016

**Workshop with top journal editors before EEST2016: AUG 16, 2016 (free registration)**

EEST2016 conference website: [www.iaoees.org/events/EEST2016/home.php](http://www.iaoees.org/events/EEST2016/home.php)

## Achievements

### Congratulation!

Prof. Shigang Sun, our Board Committee Member of the International Academy of Electrochemical Energy Science (IAOEES), professor of College of Chemistry and Chemical Engineering, Xiamen University, was elected as **Academician of Chinese Academy of Sciences in Academicians and Foreign Members By Election 2015**, according to the announcement by Chinese Academy of Sciences on 7 December, 2015.



Prof. Sun's research interests include electrocatalysis, electrochemical surface sciences, spectroelectrochemistry, nano-materials, and chemical power sources. He has published over 400 SCI papers with citations over 9000 times.

### Congratulation!

Prof. Jiujun Zhang, our Board Committee Chairman, and our organization's President was elected as Fellow (Member) of the Canadian Academy of Engineering (CAE) in April 2016, Fellow (Member) of the Engineering Institute of Canada (EIC) in December 2015, and the Fellow of Royal Society of Chemistry in May 2016. Dr. Zhang is a Principal Research Officer at the National Research Council of Canada (NRC). The technical expertise areas of Dr. Zhang are Electrochemistry, Photoelectrochemistry, Spectroelectrochemistry, Electrocatalysis, Fuel cells (PEMFC, SOFC, and DMFC), Batteries, and Supercapacitors. Up to now, Dr. Zhang has more than 400 publications with approximately 18000 citations, including 230 refereed journal papers, 18 edited/co-authored books, 41 book chapters, 110 conference keynotes and invited oral presentations, as well as 16 US/EU/WO/JP/CA patents, and produced in excess of 90 industrial technical reports.



### Congratulation!

Prof. Xueliang (Andy) Sun, our Board Committee Vice-Chairman, was elected as Fellow (Member) of the Canadian Academy of Engineering in April 2016. Dr. Sun is a Professor and Canada Research Chair (Tier I) for the development of nanomaterials for clean energy, at the University of Western Ontario, Canada. Dr. Sun's research is focused on advanced nanostructured materials for energy conversion and storage. Dr. Sun is an author and co-author of over 260 refereed-journals (e.g. Nature Communications, Advanced Materials, J. Am. Chem. Soc., Angew. Chem., Adv. Fun. Mat., Energy & Environmental Science) with citations of over 10000 times. He also edited 2 books, published 15 book chapters and filed 11 US patents. He received various awards such as Early Researcher Award (2006), University Faculty Scholar Award (2010) and Western Engineering Prize for Achievement in Research (2013).



### Congratulation!

Prof. Zhongwei Chen, our Board Committee Vice-Chairman, Associate Professor and Canada Research Chair at the University of Waterloo, Canada, is the recipient of an E.W.R Steacie Memorial Fellowship from the Natural Sciences and Engineering Research Council of Canada (NSERC) announced at Rideau Hall in Ottawa on Feb 16 2016 for his work in developing new materials that make batteries and fuel cells smaller, lighter and longer-lasting. The E.W.R. Steacie Memorial Fellowship honours the memory of Edgar William Richard Steacie, an outstanding chemist and research leader who made major contributions to the development of science in Canada during, and immediately following, World War II.



Professor Zhongwei Chen and Governor General David Johnston at the 2016 NSERC top researcher awards ceremony, February 16, 2016. (Photo: NSERC)



EEST2016 · Kunming, China

## How to Publish Your Research Results on Top Journals:

- Conversation with Editors

August 16<sup>th</sup>, 2016

Free Registration for EEST2016 Conference Participants But Limited Number

<http://www.iaoees.org/events/EEST2016/home.php>

In association with: International Conference on Electrochemical Energy Science and Technology, August 16-22, 2016, EEST2016

Organized by:

Prof. Andy (Xueliang) Sun  
University of Western Ontario, Canada

Dr. Jun Lu  
Argonne National Lab, USA

### Keynote Speakers:



**Dr. Luke Batchelor**  
Senior Editor  
Nature Communications



**Dr. Yi Cui**  
Associate editor  
Nano Letters



**Dr. Guangchen Xu**  
Deputy Editor  
Adv. Energy Mater.



**Dr. Khalil Amine**  
Associate editor  
Nano Energy



**Dr. Kirk Schanze**  
Editor-in-Chief  
ACS Appl. Mater. Interface



**Dr. Prashant V. Kamat**  
Editor-in-Chief  
ACS Energy Letters



### **News – Prof. Jiujuun Zhang and Prof. Xueliang (Andy) Sun visit KUST**

During April 19-21<sup>th</sup>, 2016, Prof. Jiujuun Zhang, our Board Committee Chairman, and Prof. Xueliang (Andy) Sun, our Board Committee Vice-Chairman, visited Kunming University of Science and Technology (KUST). KUST president Yingjie Zhang, along with dean of finance division, dean of international communication department and dean of material institute welcomed the distinguished guests and both sides discussed the coming EEST 2016 conference cooperation. Prof. Zhang and Prof. Sun fully affirmed the preparatory working progress and discussed the conference details, including reception, workshop, conference rooms, lunch and dinner.

After the meeting, Prof. Zhang and Prof. Sun were invited to make academic reports about “Electrochemical Reduction of Carbon Dioxide (CO<sub>2</sub>) to Produce Low-Carbon Fuels: Challenges and Perspectives” and “Development of Nanostructured Materials for Energy Conversion and Storage” respectively. At last, KUST president Yingjie Zhang expressed her best wishes to the coming EEST2016 conference, hoping that EEST 2016 would promote the further cooperation between KUST and IOAEES.



# Highlight members



Professor Zidong Wei, our Board Committee Member, received his B.S from Shaanxi University of Science and Technology in 1984, Ph.D. from the Tianjin University in 1994. Currently, he is a chair professor of Cheung Kong Scholars Program of Chongqing University, and dean of College of Chemistry and Chemical Engineering of Chongqing University.

Prof. Wei's research interests include electrocatalysis, theoretical simulation, material synthesis and application in energy conversion and storage. He has published more than 200 peer reviewed articles in international journals including J. Am. Chem. Soc., Angewandte Chemie, Chem Soc Rev, Chem. Commun., J. Phys. Chem. C, Chem. Eng. Sci. and so on. His works have been cited over 4000 times.

Prof. Wei is also listed as an inventor on 26 patents associated with catalysis. He is also the leader of an innovation team of new energy chemical in Chongqing. Currently, he is taking charge of several research projects, including the China National 973 Program and the key projects from NSFC of China.

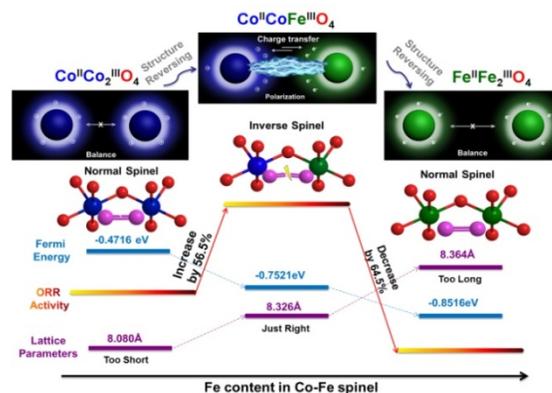


## Research News

### Enhancing by reversing

Prof Wei's group found that the electrocatalytic performance of a spinel for the ORR can be significantly promoted by reversing its crystalline structure from the normal to the inverse. The enhancement of activity originates from a dissimilarity effect of Fe and Co atoms at the octahedral sites, which modulates the oxygen adsorption energy at a proper level and activates the O-O bond compared to that on the normal spinel.

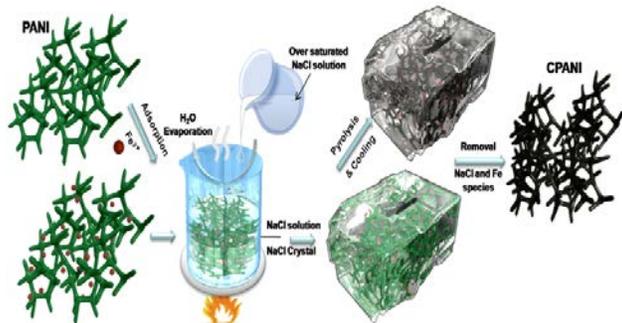
More information: *Angew. Chem. Int. Ed.*, 2016, 55, 1340.



### Shape Fixing via Salt Recrystallization

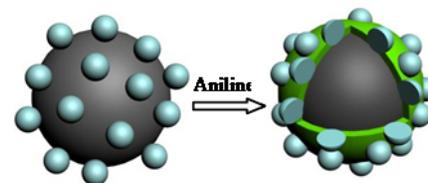
Currently, Pt-free materials have not performed as well as Pt catalysts, mainly because they have fewer and less accessible active sites. To address this challenge, Prof Wei's group developed a new method to efficiently synthesize N-doped carbon material for ORR. They use shape-fixing nanoreactor to make a better fuel cell catalyst. The catalyst processes a large number of active sites exposed to the three-phase zones and produces a peak power of 600 mW cm<sup>-2</sup> in single cell test.

More information: *Angew. Chem. Int. Ed.* 2013, 52, 11755 ; *J. Am. Chem. Soc.*, 2015, 137, 5414.



### Pt/C@PANI Core-Shell Catalyst

Prof Wei's group designed and synthesized a Pt/C@PANI core-shell structure catalyst to address activity and durability by directly polymerization a thin layer PANI on carbon surface of Pt/C catalyst. The theoretical calculations suggested that the number of holes in PANI increased with the transfer of electrons from PANI to support C, which caused PANI partial oxidation and thus strengthened the electric conductivity of PANI. The markedly decreased system energy of Pt/C@PANI catalyst means that the Pt/C@PANI is more stable than Pt/C. The lifted HOMO energy level and lowered d band center of Pt/C@PANI compared with Pt/C are conducive for (1) electron transfer between Pt/C@PANI and O<sub>2</sub>, and (2) the desorption of intermediate species on the surface of the catalysts.

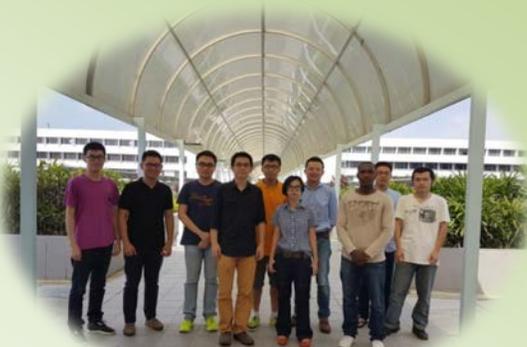


More information: *J. Am. Chem. Soc.* 2012, 134:13252; *Scientia Sinica Chimica* 2013, 43: 1566

# Highlight members



Prof. Xin Wang, our Board Committee Member, received his Bachelor (1994) and Master (1997) degrees in Chemical Engineering from Zhejiang University, and Ph.D. (2002) in Chemical Engineering from Hong Kong University of Science and Technology. From 2003 to 2005, he worked as a research fellow at University of California, Riverside, and concurrently, as R&D director and vice president for a startup fuel cell company listed in NASDAQ. He joined Nanyang Technological University as assistant professor in 2005 and was promoted to associate professor with tenure in 2010.

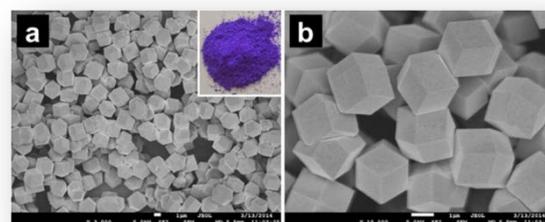


Prof. Wang has been working on electrocatalysis and electrochemical technology for energy harvesting. His recent research focus includes 1) electrocatalyst and electrode development for fuel cells, CO<sub>2</sub> electro-reduction and water splitting, and 2) electrochemical reactor with co-generation of electricity and valuable chemicals. He has published over 150 SCI papers with citations over 10,000 and H index of 55 (Google scholar), including Nature Energy, JACS, Angewandte Chemie, Advanced Materials, Energy & Environmental Science, etc. He is also listed as an inventor of 6 US/international patents with one licensed to a start-up company. He is currently a Fellow of Royal Society of Chemistry (FRSC) and an associate editor of RSC Advances.

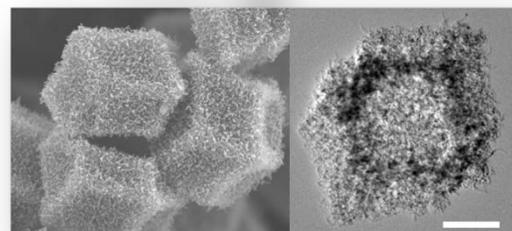
## Research News

### A Metal–Organic Framework-Derived Bifunctional Oxygen Electrocatalyst

Oxygen electrocatalysis is of great importance for many energy storage and conversion technologies, including fuel cells, metal–air batteries and water electrolysis. Replacing noble metal-based electrocatalysts with highly efficient and inexpensive non-noble metal-based oxygen electrocatalysts is critical for the practical applications of these technologies. Here we report a general approach for the synthesis of hollow frameworks of nitrogen-doped carbon nanotubes derived from metal–organic frameworks, which exhibit high electrocatalytic activity and stability for oxygen reduction and evolution and retains its original precursor morphology. The remarkable electrochemical properties are mainly attributed to the synergistic effect from chemical compositions and the robust hollow structure composed of interconnected crystalline nitrogen-doped carbon nanotubes. The presented strategy for controlled design and synthesis of metal–organic framework-derived functional nanomaterials offers prospects in developing highly active electrocatalysts in electrochemical energy devices.



Thermal treatment  
in H<sub>2</sub>/Ar



More Information: *Nature Energy*, 1 (2016), 15006