CURRICULUM VITAE

XIULEI (DAVID) JI

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EDUCATION

2006 − 2009 **Ph. D.** in Materials Chemistry, University of Waterloo, Canada
Dissertation title: *"Nanostructured Materials for Energy Storage and Conversion"*
Supervisor: *Professor Linda F. Nazar*

2004 − 2006 **M. Sc.** in Materials Chemistry, University of Waterloo, Canada
Thesis title: *"Synthesis and Characterization of Graphitic Mesoporous Carbons and MoO_2/Mesoporous Carbon Composites"*
Supervisor: *Professor Linda F. Nazar*

1999 – 2003 **B. Sc.** in Chemistry, Jilin University, China
Thesis title*: "Fluorescent Nanocrystal-Polymer Composites"*
Supervisor: *Professor Bai Yang*

PROFESSIONAL EXPERIENCE

2012 – Assistant Professor, Department of Chemistry, Oregon State University

2010 – 2012 NSERC Postdoctoral Fellow, University of California, Santa Barbara
Supervisor: *Professor Galen D. Stucky*

2009 – 2010 Postdoctoral Fellow, University of Waterloo
Supervisor: *Professor Linda F. Nazar*

TEACHING EXPERIENCE

2012 – Now Teach *Batteries and Capacitors for Energy Storage* for graduate level

Teach *Inorganic Chemistry* for both senior undergraduate and graduate levels

Teach *General Chemistry* for freshman undergraduate students

Mentor three postdoctoral scholars, four PhD graduate students and eleven undergraduate students

2010 – 2012 ***Columnist*** on energy topics for *Zhongxuesheng Shulihua* (Translated as: Middle School Students Mathematics, Physics and Chemistry), the most well-known monthly scientific education magazine in China

AWARDS AND HONORS

- **Vicki and Patrick F. Stone Scholar**, (2012-)
- **Innovation Challenge Award**, Natural Sciences and Engineering Research Council of Canada (2010)
- **Postdoctoral Fellowship**, Natural Sciences and Engineering Research Council of Canada (2010 to 2012)
- **Chinese Government Award for Outstanding Students Studying Abroad** (2009)

ACADEMIC SERVICE

- **Editorial board member for *Scientific Reports*** (2013 -)
- **Organizer** for the symposium of "Batteries and Fuel Cell Technologies: Challenges and Solutions Towards Global Stewardship" in 248th ACS Meeting, 2014.
- **Guest Editor** for a focus issue in ECS journals: "Printable Functional Materials for Electronics and Energy Applications"
- **Materials science faculty** at OSU.
- **Reviewers** *for Nature Commun., Nano Lett., Angew. Chem. Int. Ed., Adv. Fun. Mater., Chem. Euro J., Chem. Commun., ACS Appl. Mater. Inter., J. Mater. Chem. A, Carbon, Mater. Horizons* and other journals.

RESEARCH FUNDING

- **OSU Start-up Package**, **PI,** (2012 -)
- **ARPA-E Award for Highly Powerful Capacitors, Co-PI,** (2013 to 2016)
- **ARPA-E award for Grid Storage by Na-Ion Batteries, Co-PI,** (2013 to 2016)

PUBLICATIONS (Total ISI citations: >1700, H-index 14)

30. Bao Wang, J. A. Macia-Agullo, D. G. Prendiville, X. Zheng, D. Liu, S. W. Boettcher, X. Ji*, G. D. Stucky* A hybrid redox supercapacitor system with anionic catholyte and cationic anolyte. *J. Electrochem. Soc.* **2014**, In press.
29. Clememnt Bommier, Wei Luo, Wen-Yang Gao, Alex Greaney, Shengqian Ma, Xiulei Ji* Predicting capactiy of hard carbon anodes in sodium-ion batteries using porosity measurements. *Carbon* **2014**, In press.
28. Xiulei Ji, Guang He, Carmen Andrei, and Linda F. Nazar* Gentle reduction of SBA-15 silica to silicon replica with retention of morphology. *RSC Advance* **2014**, In press.
27. Wei Luo, Bao Wang, Christopher G. Heron (undergraduate), Marshall J. Allen (undergraduate), Jeff Morre, Claudia S. Maier, William F. Stickle and Xiulei Ji* Pyrolysis of cellulose under ammonia leads to nitrogen-doped nanoporous carbon generated through methane formation" *Nano Lett.* **2014**, *14*, 2225-2229.
    - Featured by *Science Daily*, "Trees go high-tech: Process turns cellulose into energy storage devices" April 7, 2014.
26. Wei Luo, Simon Lorger, Bao Wang, Clement Bommier and Xiulei Ji* Facile synthesis of one-dimensional peapod-like Sb@C submicron-structures. *Chemical Commun.* **2014**, In Press, DOI:10.1039/C4CC01326C.
    - Featured as Front Inside Cover Paper.
25. Vadivukarasi Raju, Xingfeng Wang, Wei Luo and Xiulei Ji* Multiple ambient hydrolysis deposition of tin oxide into nanoporous carbon as a stable anode for Li-ion batteries. *Chem. Eur. J.* **2014**, In Press, DOI: 10.1002/chem.201402280R1.
24. Xingfeng Wang#, Vadivukarasi Raju#, Wei Luo, Bao Wang, William F. Stickle and Xiulei Ji* Ambient hydrolysis deposition of TiO2 in nanoporous carbon and the converted TiN–carbon capacitive electrode. *J. Mater. Chem. A* **2014**, *2*, 2901-2905.

23. Wei Luo, Bao Wang, Xingfeng Wang, William F. Stickle and Xiulei Ji* Graphene Reduced from Magnesiothermic Reaction. *Chem. Commun.* **2013,** *49*, 10676-10678.
    - Highlighted as the front cover paper.
22. Wei Luo, Xingfeng Wang, Colin Meyers (undergraduate), Nick Wannenmacher, Weekit Sirisaksoontorn, Michael M. Lerner and Xiulei Ji* Efficient fabrication of nanoporous Si and Si/Ge enabled by a heat scavenger in magnesiothermic reactions. *Sci. Rep.* **2013**, *3*, doi:10.1038/srep02222.
    - Featured by *Science Daily*, "Pass the Salt: Common Condiment Could Enable New High-Tech Industry -- Silicon Nanostructures" Aug. 8, 2013.
21. Wei Luo, Jenna Schardt, Clement Bommier, Bao Wang, Joshua Razink, John Simonsen* and Xiulei Ji*, Cellulose nanofibers derived carbon nanofibers as a long-life anode material for rechargeable sodium-ion batteries. *J. Mater. Chem. A* **2013**, *1*, 10662-10666.
20. Matthew L. Snedaker, Yichi Zhang, Christina S. Birkel, Heng Wang, Tristan Day, Yifeng Shi, Xiulei Ji, Stephan Kraemer, Carolyn E. Mills, Armin Moosazadeh, Martin Moskovits, G. Jeffrey Snyder, and Galen D. Stucky, Silicon-Based Thermoelectrics Made from a Boron-Doped Silicon Dioxide Nanocomposite. *Chem. Mater.* **2013**, *25*, 4867-4873.

Before Joining OSU

19. Xiaonao Liu, Yi Shen, Routing Yang, Shihui Zou, Xiulei Ji, Lei Shi, Yichi Zhang, Deyu Liu, Liping Xiao, Xiaoming Zheng, Song Li, Jie Fan, and Galen D. Stucky, Ink-jet Printing Assisted Synthesis of Multi-component Mesoporous Metal Oxides for Ultrafast Catalyst Exploration, *Nano Lett.* **2012**, *12*, 5733−5739.
18. Joun Lee, Syed Mubeen, Xiulei Ji, Galen D. Stucky, and Martin Moskovits, Plasmonic Photoanodes for Solar Water Splitting with Visible Light, *Nano Lett.* **2012**, *12*, 5014-5019.
17. N.-S. Choi, Z. Chen, S. A. Freunberger, G. Yushin, X. Ji, Y.-K. Sun, K. Amine, L. F. Nazar, J. Cho , and P. G. Bruce, 2012, Current Issues in Energy Storage Materials and Devices, *Angew. Chem.* **2012**, *51*, 9994-10024.
16. Yichi Zhang, Tristan Day, Matthew L. Snedaker, Heng Wang, Stephan Krämer, Christina S. Birkel, Xiulei Ji, Deyu Liu, G. Jeffrey Snyder, and Galen D. Stucky, "A Mesoporous Anisotropic n-Type Bi_2Te_3 Monolith with Low Thermal Conductivity as an Efficient Thermoelectric Material." *Adv. Mater.* **2012**, *24*, 5065-5070.
15. Kyu Tae Lee, Robert Black, Taeeun Yim, Xiulei Ji, and Linda F. Nazar, "Surface-Initiated Growth of Thin Oxide Coatings for Li-Sulfur Battery Cathodes." *Adv. Eng. Mater.* **2012**, *2*, 1490-1496.
14. Xiulei Ji, Deyu Liu, Daniel G. Prendiville, Yichi Zhang and Galen D. Stucky, Dendrite-free lithium deposition electrodes via functionalized carbon fiber papers. *Nano Today* **2012**, *7*, 10-20.
13. Yichi Zhang, Matthew Snedaker, Syed Mubeen, Christina Birkel, Xiulei Ji, Yifeng Shi, Deyu Liu, Xiaonao Liu, Martin Moskovits, Galen D. Stucky, Solution synthesized Ag-Sb_2Te_{3+x} hetero-structure with enhanced seebeck coefficient *via* hot carrier filtering effect. *Nano Lett.* **2012**, *12*, 1075-1080.
12. Guang He, Xiulei Ji, Linda F. Nazar, High "C" rate Li-S cathodes: sulphur imbibed bimodal porous carbons. *Energy Environ. Sci.* **2011**, *4*, 2878-2883.
11. Xiulei Ji, Scott Evers, Robert Black, and Linda F. Nazar, Stabilizing lithium-sulfur cathode using polysulphide reservoirs. *Nature Commun.* **2011**, 2, 325 doi:10.1038/ncomms1293.
10. Xiulei Ji, Linda F. Nazar, Li-S batteries: Advances in sulphur electrode. *J. Mater. Chem.* **2010**, *20*, 9821-9826.
    - Invited highlight paper

9. Xiulei Ji, Kyu T. Lee, Reanne Holden, Lei Zhang, Jiujun Zhang, Gianluigi Botton, Martin Couillard, Linda F. Nazar, Nanocrystalline intermetallics on mesoporous carbon for direct formic acid fuel cell anodes. *Nature Chem.* **2010**, *2*, 286-293.
8. Xiulei Ji, Linda F. Nazar, Agitation induced loading of sulfur into carbon CMK-3 nanotubes: scavenging of Pt ions from aqueous solution. *Chem. Commun.* **2010**, *46*, 1658-1660.
7. Xiulei Ji, Kyu T. Lee, Linda F. Nazar, A highly ordered nanostructured carbon-sulphur cathode for lithium-sulphur batteries. *Nature Mater.* **2009**, *8*, 500-506.
   - Featured by *Science Daily*, "New lithium battery can store and deliver more than three times power of conventional lithium batteries"
   - *CBC NEWS*, "Canadian research team reports major breakthrough in lithium battery technology"
   - *NSERC News No. 178*
6. Kyu T. Lee, Xiulei Ji, Mathieu Rault, Linda F. Nazar, Simple synthesis of graphitic ordered mesoporous carbon materials by a solid-state method using metal phthalocyanines. *Angew. Chem. Inter. Ed.* **2009**, *48*, 1-6.
5. Xiulei Ji, Kyu T. Lee, Muguette Monjauze and Linda F. Nazar, Strategic synthesis of SBA-15 nanorods. *Chem. Commun.* **2008**, 4288-4290.
   - Selected as *Front Cover Page*
   - Featured by *Chem. Comm.* "Nanorods get even smaller"
4. Xiulei Ji, P. Subramanya Herle, Youngho Rho, and L. F. Nazar, Carbon/MoO_2 composite based on porous semi-graphitized nanorod assemblies from in situ reaction of tri-block polymers. *Chem. Mater.* **2007**, *19*, 374-383.
3. Hao Zhang, Chunlei Wang, Minjie Li, Xiulei Ji, Junhu Zhang, Bai Yang, Fluorescent nanocrystal-polymer composites from aqueous nanocrystals: methods without ligand exchange. *Chem. Mater.* **2005**, *17*, 4783-4788.
2. Hao Zhang, Zhanchen Cui, Yao Wang, Kai Zhang, Xiulei Ji, Changli Lü, Bai Yang, and Mingyuan Gao, From water-soluble CdTe nanocrystals to fluorescent nanocrystal-polymer transparent composites using polymerizable surfactants. *Adv. Mater.* **2003**, *15*, 777-780.
1. Hao Zhang, Guang Lu, Xiulei Ji, Zhe Li, and Bai Yang, Encapsulating of aqueous CdTe nanocrystals into polymerizable surfactants. *Chem. Res. Chin. Univ.* **2003**-01.

PATENTS and PATENT APPLICATIONS

5. **Xiulei Ji**, Xingfeng Wang, Vadivukarasi Raju, Hydrolysis Deposition. US Provisional Patent Application, 61/869,003, filed on August 22nd, 2013, pending.
4. Galen D. Stucky, **Xiulei Ji,** High energy capacitors boosted by both anolyte and catholyte. US Provisional Patent Application, 61/656672, filed on June 7th, 2012, *pending.*
3. Galen D. Stucky, **Xiulei Ji,** Surface insulated porous current collectors as a dendrite-free lithium plating electrode. WO 2013003846, Filed July 2nd, 2012, *pending.*
2. Linda F. Nazar, **Xiulei Ji,** Curbing polysulfides in sulphur electrode by porous polar insulators. PCT/CA2011/050370, filed on June 17th, 2011, *pending.*
1. Linda F. Nazar, **Xiulei Ji,** Kyu Tae Lee, Sulfur-carbon material. US Patent, No. 8173302.