

Xuefei Li

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Purdue University
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EDUCATION

Ph.D. Chemistry, 2013. 08-2018. 12

Pennsylvania State University, University Park, PA
Thesis: Synthesis and Metal-Insulator Transition Properties of Vanadium Oxide Nanostructures
Advisor: Raymond E. Schaak

B.S. Chemistry, 2009. 09-2013. 06

Jilin University, Changchun, China

RESEARCH EXPERIENCE

Postdoctoral Fellow, 2019. 01-current

Purdue University, West Lafayette, IN
Advisor: Jianguo Mei

Projects:

- 1) Explore the fundamental mechanisms for stabilizing high oxidation potential electrochromic polymers
- 2) Identify generalizable electrochemical principles and supporting materials for stabilizing polymer-based electrochromic devices

Graduate Research Assistant, 2013. 08 – 2018. 12

The Pennsylvania State University
Advisor: Raymond E. Schaak

Projects:

- 1) Design solution-phase methods to synthesize strongly correlated materials at the nanoscale
- 2) Explore new reactive synthons for programmable engineering of nanoparticle composition, structure, and configuration

PUBLICATIONS

1. **Li, X.**; Wang, X.; You, L.; Zhao, K.; Mei, J. "Making Yellow Electrochromic Polymers Electrochemically Stable" *Submitted*
2. Chen, K.; He, J.; Zhang, D.; You, L.; **Li, X.**; Wang, H.; Mei, J. "Bioinspired Dynamic Camouflage from Colloidal Crystals-Embedded Electrochromics" *Nano Lett.* **2021**, *21*, 4500
3. **Li, X.**; Wang, Z.; Chen, K.; Zemlyanov, D. Y.; You, L.; Mei, J. "Stabilizing Hybrid Electrochromic Devices through Pairing Electrochromic Polymers with Minimally Color-Changing (MCC) Ion Storage Materials Having Closely Matched Electroactive Voltage Windows" *ACS Appl. Mater. Interfaces*, **2021**, *13*, 5312
4. **Li, X.**†; Perera, K. †; He, J.; Gumyusenge, A.; Mei, J. "Solution-Processable Electrochromic Materials and Devices: Roadblocks and Strategies towards Large-Scale Application" *J. Mater. Chem. C*, **2019**, *7*, 12761 (invited review, †equal contribution)
5. **Li, X.**; Schaak, R. E. "ZnO-Templated Synthesis and Metal-Insulator Transition of VO₂ Nanostructures" *Chem. Mater.*, **2019**, *31*, 2088
6. **Li, X.**; Schaak, R. E. "Size- and Interface-Modulated Metal-Insulator Transition in Solution-Synthesized Nanoscale VO₂-TiO₂-VO₂ Heterostructures" *Angew. Chem., Int. Ed.*, **2017**, *56*, 15550
7. **Li, X.**; Schaak, R. E. "Reactive AgAuS and Ag₃AuS₂ Synthons Enable the Sequential Transformation of Spherical Nanocrystals into Asymmetric Multicomponent Hybrid Nanoparticles" *Chem. Mater.*, **2017**, *29*, 4153
8. Luo, X.; **Li, X.**; Zhang, H.; Yang, B. "Colloidal Synthesis and Size-Related Capacitance of Small Cobalt Sulfide Nanocrystals" *Part. Part. Syst. Char.*, **2013**, *30*, 501

PATENTS

Approved

Jianguo Mei and Xuefei Li, Vanadium Oxide with a Formula of VO_x as Charge Balancing Material for Electrochromic Devices, PCT/US2020/048032, **2020**

Submitted

Jianguo Mei and Xuefei Li, Electrochromic Device with Improved Cycling Stability, **2021**

TEACHING and MENTORING EXPERIENCE

Teaching Assistant, Fall 2013

Chem 111, Experimental Chemistry I (undergraduate level), the Pennsylvania State University

Role: Providing hands-on instructions in introductory chemistry experiments and explaining fundamental theories involved; providing feedback in weekly office hours and lab reports.

Teaching Assistant, Spring 2014

Chem 213, Laboratory in Organic Chemistry (undergraduate level), the Pennsylvania State University

Role: Providing hands-on training in organic chemistry experiments; providing feedback and evaluations in weekly lab reports and office hours.

Student Mentor for Undergraduate Summer Research, Summer 2016

Summer research in nanomaterials for underrepresented undergraduate students, the partnership between Penn State and North Carolina Central University

Role: design and guide research project in nanoparticle synthesis, provide demonstration and training on nanomaterials characterization

Outreach Volunteer:

Penn State Materials Characterization Lab and Nanofabrication Lab Tour, 2016-2018

Role: introduce materials characterization facilities to K-12 students

Nano-Activities for Kids, Summer 2017, 2018

Role: design, demonstrate, and instruct interactive experiments for pre-school students and families

HONORS and AWARDS

Student travel award, Department of Chemistry, Penn State	2018
Student travel award, Department of Chemistry, Penn State	2017
Incoming student fellowship, Department of Chemistry, Penn State	2013

PRESENTATIONS

(5) **Li, X.**; Wang, Z.; Chen, K.; Zemlyanov, D. Y.; You, L.; Mei, J. "Stabilizing Hybrid Electrochromic Devices through Pairing Electrochromic Polymers with Minimally Color-Changing (MCC) Ion Storage Materials Having Closely Matched Electroactive Voltage Windows", 2021 Fall ACS meeting, oral presentation (pre-recorded)

(4) **Li, X.**; Schaak, R. E. "Size- and Interface-Modulated Metal-Insulator Transition in Solution-Synthesized Nanoscale VO₂-TiO₂-VO₂ Heterostructures", 2018 Spring MRS meeting, poster presentation

(3) **Li, X.**; Schaak, R. E. "Size- and Interface-Modulated Metal-Insulator Transition in Solution-Synthesized Nanoscale VO₂-TiO₂-VO₂ Heterostructures", 2017 Materials Day, Penn State Materials Research Institute, poster presentation

(2) **Li, X.**; Schaak, R. E. "Reactive AgAuS, and Ag₃AuS₂ Synthons Enable the Sequential Transformation of Spherical Nanocrystals into Asymmetric Multicomponent Hybrid Nanoparticles", 2017 Spring ACS meeting, oral presentation

(1) **Li, X.**; Schaak, R. E. "Solution Synthesis of Vanadium Dioxide Nanostructures", Nov. 2016, Penn State MRSEC seminar, oral presentation

CAREER DEVELOPMENT

New Faces in Chemistry: A Future Faculty Workshop

July 2021

This workshop, held by the Department of Chemistry, University of Virginia, provides a detailed and systematic preview of faculty job applications, including job search, curriculum vitae, cover letter, research plan, teaching and diversity statements, job talk, and funding opportunities.