

## Biographical Sketch— Jiaxing Huang

Materials Science & Engineering  
Northwestern University  
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### PROFESSIONAL PREPARATION

- Miller Research Fellow (2004-2007), University of California, Berkeley  
Sponsor: Prof. Peidong Yang
- PhD in Chemistry (2000-2004), University of California, Los Angeles  
Advisor: Prof. Richard B. Kaner
- BS in Chemical Physics (1995-2000), University of Science and Technology of China  
Research Advisor: Prof. Yi Xie

### APPOINTMENTS

2013- Associate Professor of Materials Science and Engineering, Northwestern University  
2011-13 Morris E. Fine Junior Professor in Materials and Manufacturing  
2007-13 Assistant Professor of Materials Science and Engineering, Northwestern University

### PROFESSIONAL INTERESTS AND PHILOSOPHIES

- Research: Create new knowledge, materials and techniques that are potentially useful
- Education: Develop intuition and inspire creativity through experiential learning and innovation

### HONORS AND AWARDS

- JSPS Fellow (Japan Society for the Promotion of Science, 2016)
- Highly Cited Researcher in Chemistry (Thomson Reuters, 2014, 2015)
- Guggenheim Fellow (John Simon Guggenheim Memorial Foundation, 2014-2015)
- Fissan-Pui-TSI Award (International Aerosol Research Assembly, 2014)
- AVS Prairie Chapter Early Career Award (American Vacuum Society, 2014)
- SME Gustav Olling Outstanding Young Manufacturing Engineer Award (Society of Manufacturing Engineers, 2013)
- Inaugural ISEN Early Career Investigator Award (Initiative for Sustainability and Energy at Northwestern, 2011)
- Morris E. Fine Chair in Materials and Manufacturing (Northwestern University, 2011-2013)
- Searle Center for Teaching Excellence Junior Fellow (Northwestern University, 2011-2012)
- Sloan Research Fellow (The Alfred P. Sloan Foundation, 2011)
- NSF CAREER Award (National Science Foundation, 2010-2015)
- Miller Research Fellow (UC-Berkeley, 2004-2007)
- National Starch and Chemical Award for Outstanding Graduate Research in Polymer Science and Engineering (POLY/PMSE divisions, American Chemical Society, 2006)
- IUPAC Young Chemists Prize (The International Union of Pure & Applied Chemistry, 2005)

## SELECTED PROFESSIONAL SERVICES

- Member of editorial/advisory board, *Carbon* (American Carbon Society, Elsevier), *Journal of Materials Chemistry - A* (Royal Society of Chemistry), *Chemistry of Materials* (American Chemical Society), *Applied Materials Today* (Elsevier)
- Guest co-editor of special issues for *Journal of Solid State Chemistry* (Elsevier, 2014-2015) and *Advanced Drug Delivery Review* (Elsevier, 2015-2016)
- Co-editor of MRS proceeding Vol 1344 “Functional 2D Layered Materials - From Graphene to Topological Insulators”, Cambridge University Press, 2011, ISBN:9781605113210
- Member of international advisory committee, New Diamond and Nano Carbons Conference (2013 and 2016), and International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM) (2014)
- Co-founder and symposium organizer, the 1<sup>st</sup>-3<sup>rd</sup> “International Symposium on Graphene for Energy and Fuels”, ACS Meeting (2012-2014); Symposium organizer, “Functional 2D Layered Materials”, MRS meeting (2011); Co-organizer, symposium “Two-dimensional Nanosheets and Nanosheet-Based Materials”, Pacificchem (2015); Co-chair and symposium organizer, the 40<sup>th</sup>-43<sup>rd</sup> ICMCTF Topical Symposium “Graphene and 2D Nanostructures” (Sponsored by AVS Advanced Surface Engineering Division, 2013-2016), Symposium chair for the 5<sup>th</sup> International Conference on Multifunctional, Hybrid and Nanomaterials (Lisboa, Portugal, 2017)
- External reviewer for President’s Science Award, Singapore
- Evaluator for Gordon Research Conferences
- Chair of proposal review panel, European Science Foundation

## PATENTS AND INVENTION DISCLOSURES

- From Northwestern research: 3 US and 1 Korean patents issued, 1 licensed, more pending
- From prior research: 4 US patents issued

## PEER-REVIEWED PUBLICATIONS

Google scholar profile: <http://scholar.google.com/citations?user=sbfLJqUAAAAJ&hl=en>

### Selected Publications at Northwestern (\* Denotes corresponding author)

1. Andrew R. Koltonow and Jiaying Huang\* “Two-dimensional Nanofluidics” *Science*, **2016**, 351, 1395-1396 (Perspective)
2. Xuan Dou, Andrew R. Koltonow, Xingliang He, Hee Dong Jang, Qian Wang,\* Yip-Wah Chung\* and Jiaying Huang\* “Self-dispersed Crumpled Graphene Balls in Oil for Friction and Wear Reduction” *Proceeding of National Academy of Sciences*, **2016**, 13, 1528–1533 (Cover article, featured in *C&EN*, *Fortune.com*)
3. Jiayan Luo, Jun Gao, Aoxuan Wang, and Jiaying Huang\* “Bulk Nanostructured Materials Based on Two-Dimensional Building Blocks: A Roadmap” *ACS Nano*, **2015**, 9, 9432-9436 (Invited Perspective)
4. Huali Nie, Xuan Dou, Zhihong Tang, Hee Dong Jang and Jiaying Huang\* “High-Yield Spreading of Water-Miscible Solvents on Water for Langmuir-Blodgett Assembly” *Journal of the American Chemical Society*, **2015**, 137,10683-10688 (Featured in *C&EN*, H.L. Nie featured in *Women in Nanoscience*)

5. Xiaoding Wei, Lily Mao, Rafael A. Soler-Crespo, Jeffrey T. Paci, Jiaying Huang,\* SonBinh T. Nguyen\* and Horacio D. Espinosa\* “Plasticity and Ductility in Graphene Oxide - A Novel Mechanochemically Induced Damage-Tolerance Mechanism”, *Nature Communications*, **2015**, 6, 8029
6. Jiao-Jing Shao, Kalyan Raidongia, Andrew R. Koltonow and Jiaying Huang\* “Self-assembled Two-dimensional Nanofluidic Proton Channels with High Thermal Stability” *Nature Communications*, **2015**, 6, 7602 (Featured in *Materials360.com*)
7. Hee Dong Jang,\* Hyekyoung Kim, Hankwon Chang, Jiwoong Kim, Kee Min Roh, Ji-Hyuk Choi, Bong-Gyoo Cho, Eunjun Park, Hansu Kim,\* Jiayan Luo and Jiaying Huang\* “Aerosol-Assisted Extraction of Silicon Nanoparticles from Wafer Slicing Waste for Lithium Ion Batteries” *Scientific Reports*, **2015**, 5, 9431 (Featured in *C&EN*)
8. Stanley S. Chou,\* Yi-Kai Huang, Jaemyung Kim, Bryan Kaehr, Brian M. Foley, Ping Lu, Conner Dykstra, Patrick E. Hopkins, C. Jeffrey Brinker, Jiaying Huang\* and Vinayak P. Dravid\* “Controlling the Metal to Semiconductor Transition of MoS<sub>2</sub> and WS<sub>2</sub> in Solution” *Journal of the American Chemical Society*, **2015**, 137, 1742-1745 (In *JACS Spotlights*)
9. Rodrigo A. Bernal, Amin Aghaei, Sangjun Lee, Seunghwa Ryu, Kwonnam Sohn, Jiaying Huang, Wei Cai, and Horacio Espinosa\* “Intrinsic Bauschinger Effect and Recoverable Plasticity in Pentatwinned Silver Nanowires Tested in Tension” *Nano Letters*, **2015**, 15, 139-146 (Cover article)
10. Che-Ning Yeh, Kalyan Raidongia, Jiaojing Shao, Quan-Hong Yang and Jiaying Huang\* “On the Origin of the Stability of Graphene Oxide Membrane in Water” *Nature Chemistry*, **2015**, 7, 166-170 (Featured in *Science*, *C&EN*, *Materials Today*, C.N. Yeh featured in *Women in Nanoscience*)
11. Alexander J. Smith, Chen Wang, Dongning Guo, Cheng Sun\* and Jiaying Huang\* “Repurposing Blu-ray Movie Discs as Low-cost, Quasi-random Nanoimprinting Templates for Photon Management” *Nature Communications*, **2014**, 5, 5517 (Featured in *Nature*, *C&EN*, *Scientific American*, *The Washington Post*, *NBC*, *PBS*, *NPR*)
12. Cheng Wei Lin, Zhibo Zhao, Jaemyung Kim and Jiaying Huang\* “Pencil Drawn Strain Gauges and Chemiresistors on Paper” *Scientific Reports*, **2014**, 4, 3812 (Featured in *Materials360*, *Fox News-Tech Take*)
13. Deepti Krishnan, Kalyan Raidongia, Jiaojing Shao and Jiaying Huang\* “Graphene Oxide Assisted Hydrothermal Carbonization of Carbon Hydrates” *ACS Nano*, **2014**, 8, 449-457
14. Alvin T. L. Tan, Jaemyung Kim, Jing-Kai Huang, Lain-Jong Li and Jiaying Huang\* “Seeing 2D Sheets on Arbitrary Substrates by Fluorescence Quenching Microscopy” *Small*, **2013**, 9, 3253-3258 (Frontispiece article)
15. Jaemyung Kim, Segi Byun, Alexander J. Smith, Jin Yu, and Jiaying Huang\* “Enhanced Electrocatalytic Properties of Transition Metal Dichalcogenides Sheets by Spontaneous Gold Nanoparticle Decoration”, *Journal of Physical Chemistry Letters*, **2013**, 4, 1227-1232 (Featured in *Chemistry World*)

16. Stanley S. Chou, Mrinmoy De, Jaemyung Kim, Conner Dykstra, Jiaying Huang\*, Vinayak P. Dravid\* “Ligand conjugation of chemically exfoliated MoS<sub>2</sub>”, *Journal of the American Chemical Society*, **2013**, 134, 16725-16733
17. Jiayan Luo, Hee Dong Jang and Jiaying Huang\* “Effect of Sheet Morphology on the Scalability of Graphene-Based Ultracapacitors” *ACS Nano*, **2013**, 7, 1464-1471 (Featured in *C&EN*)
18. Jiayan Luo, Jaemyung Kim and Jiaying Huang\* “Material Processing of Chemically Modified Graphene: Some Challenges and Solutions” *Accounts of Chemical Research*, **2013**, 46, 2225-2234 (Invited, cover article)
19. Jaemyung Kim, Laura J. Cote and Jiaying Huang\* “Two Dimensional Soft Material: New Faces of Graphene Oxide” *Accounts of Chemical Research*, **2012**, 45, 1356-1364
20. Kalyan Raidongia and Jiaying Huang\* “Nanofluidic Ion Transport through Reconstructed Layered Materials” *Journal of the American Chemical Society*, **2012**, 134, 16528-16531 (Featured in *Materials Today*, *IEEE Spectrum*)
21. Stanley S. Chou, Mrinmoy De,\* Jiayan Luo, Vincent M. Rotello, Jiaying Huang\* and Vinayak P. Dravid\* “Nanoscale Graphene Oxide (nGO) as Artificial Receptors: Implications for Biomolecular Interactions and Sensing” *Journal of the American Chemical Society*, **2012**, 134, 16725-16733
22. Jian Yao Zheng, Yongli Yan, Xiaopeng Wang, Yong Sheng Zhao,\* Jiaying Huang and Jiannian Yao\* “Wire-on-wire Growth of Fluorescent Organic Heterojunctions” *Journal of the American Chemical Society*, **2012**, 134, 2880-2883 (Featured in *Chemistry World*)
23. Jiayan Luo, Xin Zhao, Jinsong Wu, Hee Dong Jang, Harold H. Kung and Jiaying Huang\* “Crumpled Graphene-Encapsulated Si Nanoparticles for Lithium Ion Battery Anodes” *Journal of Physical Chemistry Letters*, **2012**, 3, 1824-1829
24. Vincent C. Tung, Jen-Hsien Huang, Jaemyung Kim, Alexander J. Smith, Chih-Wei Chu, Jiaying Huang\* “Towards Solution Processed All-Carbon Solar Cells: A Perspective” *Energy & Environmental Science*, **2012**, 5, 7810-7818 (Inside cover article)
25. Jiayan Luo, Vincent C. Tung, Hee Dong Jang, and Jiaying Huang\* “Graphene Oxide based Conductive Glue as Binder for Ultracapacitor Electrodes” *Journal of Materials Chemistry*, **2012**, 22, 12993-12996
26. Kwonnam Sohn, Yoon Joo Na, Hankwon Chang, Ki-Min Roh, Hee Dong Jang and Jiaying Huang\* “Capillary Molding Route to Oil Absorbing Graphene Capsules” *Chemical Communications*, **2012**, 48, 5968-5970 (Cover article, featured in *Chemistry World*)
27. Deepti Krishnan, Franklin Kim, Jiayan Luo, Rodolfo Cruz-Silva, Laura J Cote, Hee Dong Jang and Jiaying Huang\* “Energetic Graphene Oxide: Challenges and Opportunities” *Nano Today*, **2012**, 7, 137-152 (Invited)
28. Vincent C. Tung, Jaemyung Kim and Jiaying Huang\* “Graphene Oxide:Single Walled Carbon Nanotube Based Interfacial Layer for All-solution-processed Multijunction Solar Cells in Both Regular and Inverted Geometries” *Advanced Energy Materials*, **2012**, 2, 299-303 (Frontispiece article)

29. Jiayan Luo, Hee Dong Jang, Tao Sun, Li Xiao, Zhen He, Alexandros P. Katsoulidis, Mercuri G. Kanatzidis, J. Murray Gibson, and Jiaxing Huang\* “Compression and Aggregation-resistant Particles of Crumpled Soft Sheets” *ACS Nano*, **2011**, 5, 8943–8949 (Cover article, featured in *Nature*, *C&EN*, *Materials Today* and *Chemistry & Industry*)
30. Jaemyung Kim, Vincent C. Tung and Jiaxing Huang\* “Water Processable Graphene Oxide: Single Walled Carbon Nanotube Composite as Anode Modifier for Polymer Solar Cells” *Advanced Energy Materials*, **2011**, 1, 1052-1057 (Frontispiece article)
31. Ken C. Pradel, Kwon Nam Sohn and Jiaxing Huang\* “Cross-flow Purification of Nanowires” *Angewandte Chemie International Edition*, **2011**, 50, 3412-3416 (Named a “hot paper”, frontispiece article, and featured in *ChemViews Magazine*)
32. Tae Hee Han, Yi-Kai Huang, Alvin T. L. Tan, Vinayak P. Dravid\* and Jiaxing Huang\* “Steam Etched Porous Graphene Oxide Network for Chemical Sensing” *Journal of the American Chemical Society*, **2011**, 133, 15264-15267 (Selected for *JACS* and *Analytical Chemistry* virtual issue on “Nanomaterials in Analytical Chemistry”)
33. Vincent C. Tung, Jaemyung Kim, Laura J. Cote, and Jiaxing Huang\* “Sticky Interconnect for Solution-Processed Tandem Solar Cells” *Journal of the American Chemical Society*, **2011**, 133, 9262-9265 (Featured in *Nanowerk.com*)
34. Vincent C. Tung, Jen-Hsien Huang, Ian Tevis, Franklin Kim, Jaemyung Kim, Chih-Wei Chu, Samuel I. Stupp, and Jiaxing Huang\* “Surfactant-free Water-processable Photoconductive All-carbon Composite” *Journal of the American Chemical Society*, **2011**, 133, 4940-4947 (Featured in *C&EN*, and *Fast Company*)
35. Laura J. Cote, Jaemyung Kim, Vincent C. Tung, Jiayan Luo, Franklin Kim, and Jiaxing Huang\* “Graphene Oxide as Surfactant Sheets” *Pure and Applied Chemistry*, **2011**, 83, 96-110 (Cover article, invited Perspective) Chinese translation published in *Industrial Materials* (工業材料雜誌) by ITRI, Taiwan
36. Jiayan Luo, Laura J. Cote, Vincent C. Tung, Alvin T. L. Tan, Philip E. Goins, Jinsong Wu and Jiaxing Huang\* “Graphene Oxide Nanocolloids” *Journal of the American Chemical Society*, **2010**, 132, 17667-17669 (Featured in *Materials Today*)
37. Laura J. Cote, Jaemyung Kim, Zhen Zhang, Cheng Sun\* and Jiaxing Huang\* “Tunable Assembly of Graphene Oxide Surfactant Sheets: Wrinkles, Overlaps and Impacts on Thin Film Properties” *Soft Matter*, **2010**, 6, 6096-6101 (Inside cover article)
38. Franklin Kim, Jiayan Luo, Rodolfo Cruz-Silva, Laura J. Cote, Kwonnam Sohn and Jiaxing Huang\* “Self-Propagating Domino-Like Reactions in Oxidized Graphite” *Advanced Functional Materials*, **2010**, 20, 2867-2873 (Frontispiece article, featured in *C&EN*, *Chemistry & Industry* and highlighted in *Journal of Materials Chemistry*)
39. Jaemyung Kim, Franklin Kim, Laura J. Cote, Wa Yuan, Kenneth R. Shull and Jiaxing Huang\* “Graphene Oxide Sheets at Interfaces” *Journal of the American Chemical Society*, **2010**, 132, 8180-8186 (Featured in *Nature Chemistry*)
40. Jaemyung Kim, Franklin Kim and Jiaxing Huang\* “Seeing Graphene-Based Sheets” *Materials Today*, **2010**, 13, 28-38 (Invited Review, cover article, a top 25 Hot Article)

41. Franklin Kim, Laura J. Cote and Jiaxing Huang\* “Graphene Oxide: Surface Activity and Two Dimensional Assembly” *Advanced Materials*, **2010**, 22, 1954-1958 (Invited)
42. Jaemyung Kim, Laura J. Cote, Franklin Kim and Jiaxing Huang\* “Visualizing Graphene Based Sheets by Fluorescence Quenching Microscopy” *Journal of the American Chemical Society*, **2010**, 132, 260-267 (Featured in *Nature Chemistry*, *C&EN*)
43. Yongsheng Zhao, Peng Zan, Jaemyung Kim, Cheng Sun and Jiaxing Huang\* “Patterned Growth of Vertical Organic Nanowire Waveguide Arrays” *ACS Nano*, **2010**, 4, 1630-1636
44. Yongsheng Zhao, Jinsong Wu and Jiaxing Huang\* “Vertical Organic Nanowire Arrays: Controlled Synthesis and Chemical Sensors” *Journal of the American Chemical Society*, **2009**, 131, 3158-3159
45. Kwon Nam Sohn, Franklin Kim, Ken Pradel, Jinsong Wu, Yong Peng, Feimeng Zhou and Jiaxing Huang\* “Construction of Evolutionary Tree for Morphological Engineering of Nanoparticles” *ACS Nano*, **2009**, 3, 2191-2198 (Featured in *Nature Nanotechnology*)
46. Laura J. Cote, Rodolfo Cruz-Silva and Jiaxing Huang\* “Flash Reduction and Patterning of Graphite Oxide and Its Polymer Composite” *Journal of the American Chemical Society*, **2009**, 131, 11027-11032 (Featured in *C&EN* and its 2009 end of year review, *Physics World*)
47. Laura J. Cote, Franklin Kim and Jiaxing Huang\* “Langmuir-Blodgett Assembly of Graphite Oxide Single Layers” *Journal of the American Chemical Society*, **2009**, 131, 1043-2049 (Cover article, featured in *C&EN*)
48. Franklin Kim, Kwon Nam Sohn, Jinsong Wu and Jiaxing Huang\* “Chemical Synthesis of Au Nanowires in Acidic Solutions” *Journal of the American Chemical Society*, **2008**, 130, 14442-14443
49. Shabnam Virji, Bruce H. Weiller, Jiaxing Huang\*, Heather Shepherd, Phil Haussmann, Tanya Faltens, Richard Blair, Sarah Tolbert\* and Richard B. Kaner\* “Construction of a Polyaniline Nanofiber Gas Sensor” *Journal of Chemical Education*, **2008**, 158, 1102-1104

#### Selected Publications Prior to Northwestern

#### ***Postdoctoral research: Dewetting instability and patterning of nanostructures***

1. Ruoxue Yan, Peter Pausauskie, Jiaxing Huang and Peidong Yang “Direct Photonic-Plasmonic Coupling and Routing in Single Nanowires” *Proceedings of the National Academy of Sciences*, **2009**, 106, 21045-21050
2. Jiaxing Huang, Rong Fan, Stephen Connor and Peidong Yang “One Step Patterning of Aligned Nanowire Arrays by Programmed Dip Coating” *Angewandte Chemie International Edition*, **2007**, 119, 2466-2469
3. Jiaxing Huang, Andrea R. Tao, Stephen Connor and Peidong Yang “A General Method for Assembling Single Colloidal Particle Lines”, *Nano Letters*, **2006**, 6, 524-529
4. Jiaxing Huang, Franklin Kim, Andrea R. Tao, Stephen Connor and Peidong Yang “Spontaneous Formation of Nanoparticle Stripe Patterns via Dewetting” *Nature Materials*, **2005**, 4, 896-900

#### ***Graduate research: Conducting polymer nanostructures***

5. [Book chapter] Jiaying Huang and Richard B. Kaner "Polyaniline Nanofibers: Syntheses, Properties and Applications" Chapter 7 (page 1-49) for *Handbook of Conducting Polymers*, 3<sup>rd</sup> Ed., Edited by Skotheim T.A. and Reynolds, J.R. CRC Press, **2007**
6. Jiaying Huang\* "Syntheses and Applications of Conducting Polymer Polyaniline Nanofibers" *Pure and Applied Chemistry*, **2006**, 78, 15-27 (invited Review)
7. Jiaying Huang and Richard B. Kaner "The Intrinsic Nanofiber Morphology of Polyaniline" *Chemical Communications*, **2006**, (4), 367-376 (invited Feature Article, cover article)
8. Ling Ma, Julie Hamdi, Jiaying Huang, and M. Frederick Hawthorne "Camouflaged Carborane Amphiphiles: Synthesis and Self-Assembly" *Inorganic Chemistry*, **2005**, 44, 7249-7258
9. Jiaying Huang, James A. Moore, J. Henry Acquaye and Richard B. Kaner "A Mechanochemical Route to the Conducting Polymer Polyaniline" *Macromolecules*, **2005**, 38, 317-321
10. Ricky J. Tseng, Jiaying Huang, Jianyong Ouyang, Jun He, Richard B. Kaner and Yang Yang "Polyaniline Nanofiber/Gold Nanoparticle Non-Volatile Memory" *Nano Letters*, **2005**, 5, 1077-1080
11. Shabnam Virji, Christina Baker, Jiaying Huang, Richard B. Kaner and Bruce H. Weiller "Polyaniline Nanofiber Composites with Metal Salts: Chemical Sensors for Hydrogen Sulfide" *Small*, **2005**, 1, 624-627
12. Jiaying Huang and Richard B. Kaner "Flash Welding of Conducting Polymer Nanofibers" *Nature Materials*, **2004**, 3, 783-786
13. Jiaying Huang and Richard B. Kaner "Nanofiber Formation in the Chemical Polymerization of Aniline: A Mechanistic Study" *Angewandte Chemie International Edition*, **2004**, 43, 5941-5945
14. Jiaying Huang and Richard B. Kaner "A General Chemical Route to Polyaniline Nanofibers" *Journal of the American Chemical Society*, **2004**, 126, 851-855
15. Jiaying Huang, Shabnam Virji, Bruce H. Weiller and Richard B. Kaner "Nanostructured Polyaniline Sensors" *Chemistry-A European Journal*, **2004**, 10, 1314-1319 (invited Concept Article)
16. Shabnam Virji, Jiaying Huang, Richard B. Kaner and Bruce H. Weiller "Polyaniline Nanofibers as Gas Sensors: Response to Classes of Vapors and Comparison to Thin Films" *Nano Letters*, **2004**, 4, 491-496
17. Jiaying Huang, Shabnam Virji, Bruce H. Weiller and Richard B. Kaner "Polyaniline Nanofibers: Facile Synthesis and Chemical Sensors" *Journal of the American Chemical Society*, **2003**, 125, 314-315
18. Jiaying Huang, Veronica M. Egan, Hailan Guo, Jeong-Yeol Yoon, Alejandro L. Briseno, Iris E. Rauda, Robin L. Garrell, Charles M. Knobler, Feimeng Zhou and Richard B. Kaner "Enantioselective Discrimination of D- and L-Phenylalanine by Chiral Polyaniline Films" *Advanced Materials*, **2003**, 15, 1158-1161

***Undergraduate research: Synthesis of inorganic nanoparticles***

19. Jiaxing Huang, Yi Xie, Bin Li, Yu Liu, Yitai Qian and Shuyuan Zhang “In-Situ Source–Template–Interface Reaction Route to Semiconductor CdS Submicrometer Hollow Spheres” *Advanced Materials*, **2000**, 12, 808-811
20. Bin Li, Yi Xie, Jiaxing Huang, Yu Liu and Yitai Qian “Sonochemical Synthesis of Nanocrystalline Copper Tellurides Cu<sub>7</sub>Te<sub>4</sub> and Cu<sub>4</sub>Te<sub>3</sub> at Room Temperature” *Chemistry of Materials*, **2000**, 12, 2614-2616
21. Yi Xie, Jiaxing Huang, Bin Li, Yu Liu and Yitai Qian “A Novel Peanut-like Nanostructure of II-VI Semiconductor CdS and ZnS” *Advanced Materials*, **2000**, 12, 1523-1526
22. Bin Li, Yi Xie, Jiaxing Huang, Yitai Qian “Synthesis by Solvothermal Route and Characterization of CuInSe<sub>2</sub> Nano-whisker and Nanoparticle” *Advanced Materials*, **1999**, 11, 1456-1459

### **RESEARCH GROUP MEMBERS AND THEIR ACHIEVEMENTS**

#### Former students and postdocs in faculty positions (8):

- Franklin Kim, Associate Professor, Kyoto University, Japan
- Yong Sheng Zhao, Professor, Institute of Chemistry, Chinese Academic of Science, China
- Rodolfo Cruz-Silva, Associate Professor, Shinshu University, Japan
- Vincent Tung, Assistant Professor, University of California, Merced, USA
- Tae Hee Han, Assistant Professor, Hanyang University, South Korea
- Jiayan Luo, Professor, Tianjin University, China
- Jiao-Jing Shao, Professor, Guizhou University, China
- Kalyan Raidongia, Assistant Professor, Indian Institute of Technology, Guwahati, India

#### Former group members in industry:

- Laura Cote, Senior Staff Material and Process Engineer, Continental Corporation
- Kwon Nam Sohn, Senior Manager, LG Chem
- Jaemyung Kim, Staff Engineer, Intel

#### Significant external awards received by students related to their work in the group

- ECS Nanocarbons Division SES Young Investigator Award
- Carbon Journal Prize for Outstanding PhD Thesis in Carbon Research (2 awards in 2014) (typically 1 award per year, an exception was made in 2014 to give 2 awards)
- Josephine de Karman Fellowship (<8 awards per year to PhD candidates in any discipline in North America)
- P.E.O. Scholar Awards (recognizes outstanding female PhD candidates in North America)
- MRS Graduate Student Awards (2 Gold and 2 Silver awards)
- 1000 Plan Program for Young Talents, China
- Chinese Government Award for Outstanding Self-Financed Students Abroad
- Taiwanese Ministry of Education’s Scholarship for Studying Abroad
- NSF East Asia and Pacific Summer Institutes (EAPSI) Fellowship
- NSF Graduate Fellowship (4 awards+1 honorable mention)
- NSF Engineering Innovation Fellowship
- NDSEG Fellowship
- Forbes 30 Under 30
- Dow Sustainability Innovation Student Competition (1 Grand Prize and 2 Second Prizes)



- Clean Energy Trust Consumer Favorite Prize
- Illinois Technology Foundation Fifty For The Future Award
- Phi Beta Kappa