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EDUCATION

2008 Ph.D. Electrical and Materials Science Engineering, Brown University
2005 M.S. Electrical and Materials Science Engineering, Brown University
2004 B.S. Physics, University of Science and Technology of China (USTC)

RESEARCH EXPERIENCE

2008 - Present: Postdoctoral Research Associate (Advisors: Dr. Vojislav R. Stamenkovic and Dr. Nenad M. Markovic)
Materials Science Division, Argonne National Laboratory, Argonne, IL

2005 - 2008: Graduate Research Associate (Advisor: Prof. Shouheng Sun)
Department of Chemistry, Brown University, Providence, RI

2002 - 2004: Undergraduate Student (Advisors: Prof. Qinwei Shi and Prof. Jianguo Hou)
Department of Physics, University of Science and Technology of China (USTC), Hefei, China

TEACHING EXPERIENCE

Fall 2006: Teaching Assistant for “*Digital Electronics Systems Design*” (ENGN1630)
Division of Engineering, Brown University

Spring 2006: Teaching Assistant and Laboratory Associate for “*Electricity and Magnetism*” (ENGN0510),
Division of Engineering, Brown University

AWARDS AND HONORS

2006 Graduate Student Scholarship, Hitachi Maxwell Ltd.
2004 Graduate Student Fellowship, Brown University
2003 Outstanding Student Award, University of Science and Technology of China (USTC)

MEMBERSHIP

2011 Sigma Xi, full member
2009 American Chemical Society
2007 American Physical Society
2003 Materials Research Society

PROFESSIONAL ACTIVITIES

Reviewer for *Angewandte Chemie*
Reviewer for *Journal of the American Chemical Society*
Reviewer for *ACS Nano*
Reviewer for *Journal of Physical Chemistry*
Reviewer for *Langmuir*
Reviewer for *Nano Research*

Reviewer for *Catalysis Letters*

Reviewer for *Electrochimica Acta*

Reviewer for *Applied Catalysis B: Environmental*

Symposium Co-Organizer for *International Manufacturing Science and Engineering Conference (2010)*

JOURNAL PUBLICATIONS

Published or Accepted

32. **Chao Wang**, Miaofang Chi, Dongguo Li, Dennis van der Vliet, Guofeng Wang, Qiyin Lin, John F. Michell, Karren L. More, Nenad M. Markovic, Vojislav R. Stamenkovic*, “Synthesis of Homogeneous Pt-Bimetallic Nanoparticles as Highly Efficient Electrocatalysts”, *ACS Catalysis* **2011**, accepted.
31. Dennis van der Vliet, **Chao Wang**, Mark Debe, Radoslav Atanasoski, Nenad M. Markovic, Vojislav R. Stamenkovic*, “Platinum-Alloy Nanostructured Thin Film Catalysts for the Oxygen Reduction Reaction”, *Electrochimica Acta* **2011**, accepted.
30. **Chao Wang**, Miaofang Chi, Dennis van der Vliet, Guofeng Wang, Karren More, Nenad M. Markovic, Vojislav R. Stamenkovic*, “Design and Synthesis of Bimetallic Electrocatalyst with Multilayered Pt-Skin Surface”, *Journal of the American Chemical Society* **2011**, ASAP online.
29. Yi Liu, **Chao Wang***, Yujie Wei, Leyi Zhu, Dongguo Li, Samuel Jiang, Nenad M. Markovic, Vojislav R. Stamenkovic, Shouheng Sun*, “Surfactant Induced Post-Synthetic Modulation of Pd Nanoparticle Crystallinity”, *Nano Letters* **2011**, *11*, 1614-1617.
28. **Chao Wang**, Dennis van der Vliet, Nestor J. Zaluzec, Karren L. More, Shouheng Sun*, Guofeng Wang, Jeffrey Greeley, Nenad M. Markovic, Vojislav R. Stamenkovic*, “Multimetallic Au/FePt₃ Nanoparticles as Highly Durable Electrocatalyst”, *Nano Letters* **2011**, *11*, 919-926 (featured on the cover page).
27. **Chao Wang**, Miaofang Chi, Dennis van der Vliet, Guofeng Wang, Karren More, Nenad M. Markovic, Vojislav R. Stamenkovic*, “Pt-bimetallic Nanocatalysts with Composition Dependent Surface Chemistry in Electrochemical Environments”, *Advanced Functional Materials* **2011**, *21*, 147-152 (featured on the cover page).
26. Dennis van der Vliet*, Dusan S. Strmcnik, **Chao Wang**, Vojislav R. Stamenkovic, Nenad M. Markovic, Marc T. M. Koper, “On the Importance of Correcting for the Uncompensated Ohmic Resistance in Model Experiments of the Oxygen Reduction Reaction” *Journal of Electroanalytical Chemistry* **2010**, *647*, 29-34.
25. **Chao Wang**, Guofeng Wang, Dennis van der Vliet, Nenad M. Markovic, Vojislav R. Stamenkovic*, “Monodisperse Pt₃Co Nanoparticles as Electrocatalyst: The Effects of Particle Size and Pretreatment on Electrocatalytic Reduction of Oxygen”, *Physical Chemistry Chemical Physics* **2010**, *12*, 6933-6939 (featured on the cover page).
24. Yang Lu, Jiang Yu Huang, **Chao Wang**, Shouheng Sun, Jun Lou*, “Cold Welding of Ultrathin Gold Nanowires”, *Nature Nanotechnology* **2010**, *5*, 218-224.
23. **Chao Wang***, Wende Tian, Yong Ding, Zhonglin Wang, Yu-Qiang Ma, Nenad M. Markovic, Vojislav R. Stamenkovic, Hideo Daimon, Shouheng Sun*, “Rational Synthesis of Heterostructured Nanoparticles with Morphology Control”, *Journal of the American Chemical Society* **2010**, *132*, 6524-6529.
22. **Chao Wang***, Yujie Wei, Hongyuan Jiang, Shouheng Sun*, “Bending Nanowire Growth in Solution by Mechanical Disturbance”, *Nano Letters* **2010**, *10*, 2121-2125.
21. Tao Xu*, Chikai Lin, **Chao Wang**, Dale L. Brewe, Yasuo Ito, Jun Lu, “Synthesis of Supported Platinum Nanoparticles from Li-Pt Solid Solution”, *Journal of the American Chemical Society* **2010**, *132*, 2151-2153.
20. **Chao Wang***, Hongfeng Yin, Sheng Dai, Shouheng Sun*, “A General Approach toward Noble Metal-Metal Oxide Dumbbell Nanoparticles and Their Catalytic Application for CO Oxidation”, *Chemistry of Materials* **2010**, *22*, 3277-3282.

19. **Chao Wang**, Dennis van der Vliet, Kee-Chul Chang, Hoydoo You, John A. Schlueter, Nenad M. Markovic, Vojislav R. Stamenkovic*, “Monodisperse Pt₃Co Nanoparticles as a Catalyst for the Oxygen Reduction Reaction: Size-Dependent Activity”, *Journal of Physical Chemistry C* **2009**, *113*, 19365-19368.
18. **Chao Wang***, Yujie Wei, Hongyuan Jiang, Shouheng Sun*, “Tug-of-War in Nanoparticles: Competitive Growth of Au on Au-Fe₃O₄ Nanoparticles”, *Nano Letters* **2009**, *9*, 4544-4547.
17. **Chao Wang**, Chenjie Xu, Hao Zeng, Shouheng Sun*, “Recent Progress in Syntheses and Applications of Dumbbell-like Nanoparticles”, *Advanced Materials* **2009**, *21*, 3045-3052 (invited review).
16. **Chao Wang**, Shouheng Sun*, “Synthesis of Ultrathin and Single Crystalline Au Nanowires”, *Chemistry-An Asian Journal* **2009**, *4*, 1028-1034 (invited review).
15. **Chao Wang**, Hideo Daimon, Shouheng Sun*, “Synthesis of Dumbbell-like Pt-Fe₃O₄ Nanoparticles and Their Enhanced Catalysis for Oxygen Reduction Reaction”, *Nano Letters* **2009**, *9*, 1493-1496.
14. **Chao Wang**, Sheng Peng, Shouheng Sun*, “Synthesis of High Magnetic Moment CoFe Nanoparticles via Interfacial Diffusion in Core/Shell Structured Co/Fe Nanoparticles”, *Nano Research* **2009**, *2*, 380-385.
13. **Chao Wang**, Sheng Peng, Ryan Chan, Shouheng Sun*, “Synthesis of AuAg Alloy Nanoparticles from Core/Shell Structured Ag/Au”, *Small* **2009**, *5*, 567-570.
12. **Chao Wang**, Hongfeng Yin, Ryan Chan, Sheng Peng, Sheng Dai, Shouheng Sun*, “One-Pot Synthesis of Oleylamine Coated AuAg Alloy NPs and Their Catalysis for CO Oxidation”, *Chemistry of Materials* **2009**, *21*, 433-435.
11. Natalie A. Frey, Sanyadanam Srinath, Hariharan Srikanth*, **Chao Wang**, Shouheng Sun, “Anomalous Magnetism and Exchange Bias in Coupled Au-Fe₃O₄ Nanoparticles”, *Journal of Applied Physics* **2009**, *105*, 07B502.
10. Sheng Peng, Youngmin Lee, **Chao Wang**, Hongfeng Yin, Sheng Dai, Shouheng Sun*, “A Facile Synthesis of Monodisperse Au Nanoparticles and Their Catalysis of CO Oxidation”, *Nano Research* **2008**, *1*, 229-234.
9. **Chao Wang**, Yongjie Hu, Charles M. Lieber*, Shouheng Sun*, “Ultrathin Au Nanowires and Transport Properties”, *Journal of the American Chemical Society* **2008**, *130*, 8902-8903.
8. **Chao Wang**, Hideo Daimon, Taigo Onodera, Shouheng Sun*, “A General Approach toward Size and Shape Controlled Synthesis of Pt Nanoparticles and Their Catalysis for Oxygen Reduction Reaction”, *Angewandte Chemie International Edition* **2008**, *47*, 3588-3591 (VIP paper, highlighted by *Chemical & Engineering News*).
7. Hongfeng Yin, **Chao Wang**, Haoguo Zhu, Steven H. Overbury, Shouheng Sun, Sheng Dai, “Colloidal Deposition Synthesis of Supported Gold Nanocatalysts based on Au-Fe₃O₄ Dumbbell Nanoparticles”, *Chemical Communications* **2008**, 4357.
6. Chenjie Xu, Jin Xie, Don Ho, **Chao Wang**, Nathan Kohler, Edward G. Walsh, Jeffrey R. Morgan, Y. Eugene Chin, Shouheng Sun*, “Au-Fe₃O₄ Dumbbell Nanoparticles as Dual-Functional Probes”, *Angewandte Chemie International Edition* **2008**, *47*, 173-176.
5. **Chao Wang**, Yanglong Hou, Jaemin Kim, Shouheng Sun*, “A General Strategy for Synthesizing FePt Nanowires and Nanorods”, *Angewandte Chemie International Edition* **2007**, *46*, 6333-6335 (VIP paper, highlighted by *MIT Technology Review*).
4. **Chao Wang**, Hideo Daimon, Youngming Lee, Jaemin Kim, Shouheng Sun*, “Synthesis of Monodisperse Pt Nanocubes and Their Enhanced Catalysis for Oxygen Reduction Reaction”, *Journal of the American Chemical Society* **2007**, *129*, 6974-6975.
3. Natalie A. Frey, Sanyadanam Srinath, Hariharan Srikanth*, **Chao Wang**, Shouheng Sun, “Static and Dynamic Magnetic Properties of Composite Au-Fe₃O₄ Nanoparticles”, *IEEE Transactions on Magnetics* **2007**, *43*, 3094-3096.

2. **Chao Wang**, Qinwei Shi, Xiaoping Wang, Jie Chen*, “Modeling Multiterminal Spintronic Devices”, *IEEE Transactions on Nanotechnology* **2007**, 6, 309-315.
1. Sheng Peng, **Chao Wang**, Jin Xie, Shouheng Sun*, “Synthesis and Stabilization of Monodisperse Fe Nanoparticles”, *Journal of the American Chemical Society* **2006**, 128, 10676-10677 (highlighted by *Nature Nanotechnology*).

Submitted

1. Dongguo Li, **Chao Wang**, Nenad M. Markovic, Vojislav R. Stamenkovic*, “The Effect of Surfactant Removal on Electrocatalytic Performance of Colloidal Nanoparticles”, submitted to *Journal of Physical Chemistry C*.

CONFERENCE PROCEEDINGS

1. Jie Chen, **Chao Wang**, Qinwei Shi, “Spintronic Logic Circuit Design for Nanoscale Computation”, *Proceedings for 11th IEEE International Conference on Electronics, Circuits and Systems* **2004**, 195.

BOOK CHAPTERS

1. **Chao Wang**, Shouheng Sun, “Chemical Synthesis of Monodisperse Magnetic Nanoparticles”, *Handbook of Magnetism and Advanced Magnetic Materials*, Edited by Helmut Kronmuller and Stuart Parkin. Volume 3: *Novel Techniques for Characterizing and Preparing Samples*. **2007**, John Wiley & Sons, Ltd. ISBN: 978-0-470-02217-7.

PATENTS AND PATENT APPLICATIONS

3. “Bimetallic Catalysts with the Nanostructure Tailored for Superior Performance in Electrocatalysis”, with Vojislav R. Stamenkovic and Nenad M. Markovic, US Patent pending.
2. “Multimetallic Core/Shell Nanoparticles as Highly Durable Electrocatalyst”, with Vojislav R. Stamenkovic, Nenad M. Markovic, Shouheng Sun and Hideo Daimon, US Patent pending.
1. “Fuel Cell, Membrane Electrode Assembly”, with Hideo Daimon and Shouheng Sun, US Patent **2009/0092875** & JP Patent **2009-94048**.

INVITED TALKS

4. “Novel Electrocatalysts with Advanced Nanoscale Architectures for Energy Conversion Applications”, Oak Ridge National Laboratory, April **2011**, Oak Ridge, TN.
3. “Bimetallic Alloy Nanoparticles: Synthesis, Characterization and Application in Renewable Energy”, Massachusetts Institute of Technology, August **2010**, Boston, MA.
2. “Nanostructure Architecture of Pt-bimetallic Electrocatalysts for Energy Conversion”, *American Chemical Society National Meeting*, August **2010**, Boston, MA.
1. “Nanostructure Architecture of Electrocatalyst for Energy Conversion Applications”, Brown University, April **2010**, Providence, RI.

CONFERENCE PRESENTATIONS

18. “Advanced Pt-Bimetallic Electrocatalysts with Multilayered Pt-skin Surface”, *American Chemical Society National Meeting*, March 2011, Denver, CO.
17. “Self-healing Bimetallic Electrocatalysts”, *Gordon Research Conference – Clusters, Nanocrystals & Nanostructures*, July **2011**, South Hadley, MA.

16. "Advanced Nanostructure Architecture for Electrocatalytic Applications", *Materials Research Society Fall Meeting*, December **2010**, Boston, MA.
15. "Morphology Controlled Synthesis of Composite Nanoparticles by Rational Designed Conditions", *American Chemical Society National Meeting*, August **2010**, Boston, MA.
14. "Nanostructure Architecture of Pt-bimetallic Catalysts for Electroreduction of Oxygen", *Gordon Research Conference – Fuel Cells*, August **2010**, Smithfield, RI.
13. "Rational Synthesis of Heterostructured Nanoparticles with Shape Control - for Energy Conversion Applications", *Materials Research Society Spring Meeting*, April **2010**, San Francisco, CA.
12. "Tug-of-War in Nanoparticles – Mechanics at Nanoscale", *American Chemical Society National Meeting*, March **2010**, San Francisco, CA.
11. "Pt-Bimetallic Alloy Nanoparticles for Electrocatalytic Reduction of Oxygen", *American Chemical Society National Meeting*, March **2010**, San Francisco, CA.
10. "Pt-based Nanoparticles (NPs) as Electrocatalyst for Oxygen Reduction Reaction (ORR)", *American Chemical Society National Meeting*, August **2009**, Washington D.C.
9. "Alloy Nanoparticles from Organic Solvothermal Synthesis for Catalytic Applications", *Materials Research Society Spring Meeting*, April **2009**, San Francisco, CA.
8. "Ultrathin Au Nanowires and Their Transport Properties", *Materials Research Society Fall Meeting*, December **2008**, Boston, MA.
7. "A General Strategy for Synthesizing FePt Nanowires and Nanorods", *Materials Research Society Fall Meeting*, December **2007**, Boston, MA.
6. "Synthesis of Platinum Nanoparticles with Size and Shape Optimized for Oxygen Reduction Reaction", *Materials Research Society Fall Meeting*, December **2007**, Boston, MA.
5. "Fe₃O₄ Nanoparticles Conjugated with Gd³⁺ or Gd₂O₃ as T₁&T₂ Contrast Agent for MRI", *Joint Molecular Imaging Conference*, September **2007**, Providence, RI.
4. "Shape Controlled Synthesis and Assembly of FePt Nanoparticles", *Information Storage Industry Consortium Annual Meeting*, July **2007**, Monterey, CA.
3. "Shape Controlled Synthesis and Assembly of FePt Nanoparticles", *Information Storage Industry Consortium EHDR Technical Review*, March **2007**, Berkeley, CA.
2. "Dumbbell-like Composite Nanoparticles: Chemical Synthesis and Catalytic Applications", *American Physical Society National Meeting*, March **2007**, Denver, CO.
1. "Dumbbell-like Composite Nanoparticles: Chemical Synthesis and Catalytic Applications", *Materials Research Society Fall Meeting*, December **2006**, Boston, MA.