Shouheng Sun

A. Education

Ph.D., Chemistry, Brown University, Providence, RI, 1996.
M.Sc., Chemistry, Nanjing University, Nanjing, China, 1987
B.Sc., Chemistry, Sichuan University, Chengdu, China, 1984

B. Professional Positions

Vernon K. Krieble Professor of Chemistry, 2016-present, Brown University.
Professor, Jan 2008-present, Department of Chemistry, Brown University.
Associate Professor, Jan 2005-Dec 2007, Department of Chemistry, Brown University.
Research Staff Member, June 1998-Dec 2004, IBM Thomas J. Watson Research Center.
Postdoctoral Fellow, July 1996-May 1998, IBM Thomas J. Watson Research Center
Lecturer, 1987 – 1992, Coordination Chemistry Institute/Department of Chemistry, Nanjing University.

C. Awards and Honors

Highly Cited Researchers, Web of Science (2017-2022)
Lee Hsun Lecture Award on Materials Science, Institute of Metal Research, Chinese Academy of Sciences (2018)
Oversea Master Lecturer, Sichuan University, China (2018)
Vernon K. Krieble Professor of Chemistry, Brown University (2016)
Guest Professor, Nanjing University of Aeronautics and Astronautics (2016)
Guest Professor, Harbin Institute of Technology (2015)
Fellow, the Royal Society of Chemistry (2015)
Highly Cited Researchers in Chemistry and Materials Science, Thomson Reuters (2014-2016)
The International Precious Metals Institute (IPMI) Faculty Advisor Award (2013)
"Siyuan Scholar" Chair Professor, Nanjing University, China (2013-2015)
Honorary Professor, Sichuan University, China (2012)
A*STAR Visiting Scientist, Data Storage Institute, Singapore (2011)
Ranked 31 in Thomson Reuters' Top 100 Chemists by citation impact from 2000-2010 (2011)
"Cheung Kong Scholar" Chair Professor, Nanjing University, China (2010-2013)
Potter Prize Advisor Award, Brown University (2009)
Research Seed Award, Brown University (2008)
Frontier Research Award, Department of Chemistry, Brown University (2006)
Salomon Award, Brown University (2006)
Tenured, Brown University (2005)
Overseas Outstanding Scholar (B), National Science Foundation of China (2004)
Outstanding Technical Achievement Award on "Two-component nanostructured materials" (IBM, 2003)
Award for Leadership in Nanoparticle Research, Business Communication Co, Inc. (2003)
Top paper of the year, National Synchrotron Light Source, Brookhaven National Laboratory (2003)
Master Inventor (IBM, 2002)
Scientific Accomplishment Award (IBM, 2000)
IBM Employee Award (IBM, 2000)
Potter Prize (Ph.D. Thesis), Brown University (1997)
Sigma Xi Award, Brown University (1996)
Yingsong Research Prize, Nanjing University (1991)

M.Sc. Thesis Prize, Chinese Chemical Society (1989)

D. Services

1. Conference Organization

Member, International Advisory Board, *the 6th Nano Today Conference*, Lisbon, Portugal, June 16-20, 2019.
Co-Chair, *the 13th Sino-US Forum on Nanoscale Science and Technology*, June 29 – July 3, 2018, Chengdu, Sichuan, China.
Member, Advisory Board, *the 1st Bio-Magnetism and Magnetic Nanomaterials Conference*, June 3-5, 2018, Suzhou, Jiangsu, China.
Member, International Advisory Board, *the 5th Nano Today* Conference, Waikoloa Beach Marriott, Hawaii, USA, Dec. 6-10, 2017.
Member, International Steering Committee, *the 2nd International Conference of Polymer Mediated Synthesis*, the University of Shiga Prefecture, Hikone, Japan, July 11-13, 2016.
Member, Program committee*, the 9th International Conference on Fine Particle Magnetism (ICFPM 2016)*, NIST, June 13-17, 2016.
Member, International Program Committee, EMN Meeting on Magnetic Materials, Sheraton Kona Resort & Spa, Hawaii, USA. March 21-24, 2016.
Member, International Advisory Board, the 4th *Nano Today* Conference, Dubai, Dec. 6-10, 2015.
Member, International Advisory Board, the 3rd *Nano Today* Conference, Singapore, Dec 8-11, 2013.
Symposium Organizer, Catalytic Nanomaterials for Energy and Environment, MRS Fall Meeting, Boston, 2013.
Member, Program Committee, the 55th Annual Conference on Magnetism and Magnetic Materials, Nov 14-18, 2010, Atlanta, Georgia.
Organizer, Functional Nanomaterials for Energy and Biomedicine Applications, the 238th American Chemical Society Meeting, Aug 16-20, 2009, Washington D. C.
Co-Chair and Member of the Organization Committee, Nanotechnology for the Study of Cellular and Molecular Interactions, Engineering Conferences International, 2009.
Symposium Organizer, Magnetic Nanostructures by Design, MRS Fall Meeting, 2008
Member, Program Committee for the 11th Magnetism and Magnetic Materials Conference, 2007.
Co-Organizer, Nanomagnetic Particles and Structures for Information Storage Applications, American Physical Society March Meeting, 2007, Denver, Colorado.
Publication Editor, 10th Magnetism and Magnetic Materials/Intermag Conference, 2007.
Member, Program Committee for the 10th Magnetism and Magnetic Materials/Intermag Conference, Jan. 7-11, 2007, Baltimore, Maryland.
Co-Organizer, Biosensor Nanomedicine, the 2nd Annual Meeting of American Academy of Nanomedicine, September 9-10, 2006, Washington DC.
Member, International Advisory Board, the 6th International Symposium on Physics of magnetic materials (ISPMM) 2005, September 14-16, 2005, Singapore.
Member, Oversea Reviewing Committee, Chinese Academy of Science, 2004
Co-Organizer, DMP focused session on asymmetric nanoparticles, American Physical Society March Meeting, 2004.
Member, Organization Committee, the 5th International Symposium on Magnetic Materials and Applications, SOMMA 2003, Dec. 4-6, 2003, Daejeon, South Korea.
Member, International Advisory Board, NATO Advanced Research Workshop on Nanostructured Magnetic Materials and Their Applications, July 1-5, 2003, Istanbul, Turkey.

Member, Organization Committee, the 1st International Workshop on Nanostructured Materials and Magnetism, August 2002, Istanbul, Turkey.
Member, Organization Committee, International conference on fine particle magnetism, Aug 14-16, 2002, Pittsburgh, PA.

2. Community Services

- **Associate Editor**, *Nanoscale*, 2012-2021.
- **Associate Editor**, *Nanoscale Advances*, 2018-2021.
- **Guest Editor**, theme collection on CO_2 capture and conversion, *Nanoscale*, 2021
- **Advisory Board Member**, Nanoscale, 2021-present.
- **Advisory Board Member**, Nanoscale Advances, 2021-present.
- **Advisory Board Member**, *Nanoscale Horizons*, 2015-present.
- **International Advisory Board Member**, *ChemNanoMat*, 2014-present.
- **Editorial Board Member**, *Regenerative Biomaterials*, 2014-2020.
- **Editorial Board Member**, *Nano Today,* 2009-present.
- **Editorial Advisory Board Member**, *Nano Letters,* 2010-2019.
- **Editorial Board Member**, *Science of Advanced Materials,* 2009-present.
- **Editorial Advisory Board,** *The Open Nanomedicine Journal,* 2008-present.
- **International Editorial Advisory Board Member**, *Particle & Particle Systems Characterization*, 2012-2018.
- **Editorial Board Member**, *Nano Research*, 2008-2014.
- **Associate Editor**, *Nanomedicine: Nanotechnology, Biology and Medicine*, 2006-2010.
- **Member**, Proposal Review Panel, Center for Functional Nanomaterials (CFN), Brookhaven National Laboratory, 2013-2015.
- **Member**, Proposal Study Panel, the Molecular Foundry, Lawrence Berkeley National Laboratory, 2012-2014.
- **Member**, Proposal evaluation board, Center for Nanoscale Materials (CNM), Argonne National Laboratory, 2007-2009.
- **Member**, NSF review panel on Nanotech exploratory research, NSF, March 4-5, 2004.
- **Member**, NSF review panel on Nanotech exploratory research, NSF, March 3-5, 2003.
- **Member**, Sub-committee in Nanomaterials and the chemical industry R&D roadmap, September 30-October 2, 2002, Baltimore, MD.

3. Brown University Services

Director of Graduate Studies, Department of Chemistry, AY 2021-2023.
Member, Curriculum Committee, Department of Chemistry, AY 2022.
Member, Graduate Admission Committee, AY 2019-2022.
Member, Academic Priorities Committee (APC), AY 2020-2021.
Co-Director, Institute for Molecular and Nanoscale Innovation (IMNI), 2012-2020.
Member, Standards and Criteria Review Committee, Department of Chemistry, 2010.
Member, Executive Committee, Department of Chemistry – AY 2016-17
Member, Inorganic Chemistry Faculty Search – AY 2015
Chair, Inorganic Chemistry Faculty Search – AY 2013
Associate Director, 2008 – 2012, Institute for Molecular and Nanoscale Innovation (IMNI), Brown University.
Chair, Nanoscience Faculty Search – AY 2012
Chair, Faculty Search Committee in NanoChemistry – AY 2008-10

Member, Faculty Search Committee in Inorganic Chemistry – AY 2007
Member, Faculty Search Committee in NanoChemistry – AY 2007-8
Member, Graduate Admission Committee – AY 2006-2013
Departmental Colloquium Organizer – AY 2005 – 2007
Inorganic/Materials Seminar Organizer – AY 2006 -2009
Curriculum Committee Member – AY 2006
Ad hoc Lab Safety Committee Member – AY 2006
Chemistry Instrument Committee – AY 2005 – 2006
Member, Faculty Search Committee in Physics – AY 2006
Member, Faculty search committee in Engineering, AY2005.

E. Publications

1. Patents (in reverse chronological order)

29. "A novel approach to polybenazole-mediated assembly of nanostructured ceramic oxides as high performance solid state electrolyte", US Provisional Patent Application, Serial No 63/431,527.
28. "A self-assembly approach to anisotropic $SmCo_5$ nanomagnets" with B. Shen, US Provisional Patent Application. Brown University Provisional Filing.
27. "Hydrodehalogenation of polyhalogenated aromatics catalyzed by NiPd nanoparticles supported on nitrogen-doped graphene", with X. Guo, C. Yu, C. T. Seto, and Z. Yin, U.S. Provisional Patent Application No.: 62/607,821
26. "Nanoparticle catalyst for synthesizing polybenzoxazole with controlled polymerization", with C. Yu, X. Guo, and C. T. Seto, **US 11472923**.
25. "Method of Creating a Magnet" with B. Shen, A. Mendoza-Garcia, S. K. McCall, S. E. Baker, **US 16/500,993**.
24. "Copper nanoparticle based chemoselective reduction", with M. Shen and H. Liu, **US 17/293,581**.
23. "Graphene-Co/CoO nanoparticle composite, manufacture, and use in an electrochemical cell", with S. Guo, S. Zhang, and L. Wu, **WO 2014055485**.
22. "Core/Shell Nanoparticle Synthesis and Catalytic Method", with V. Mazumder, **WO2011149912**.
21. "Graphene-supported NiPd alloy nanoparticles for effective catalysis of tandem dehydrogenation of ammonia borane and hydrogenation of nitro/nitrile compounds", with S. Ho and A. Mendoza-Garcia, **US 20160279619**.
20. "Fe_3O_4-m(Au-like)-nanoparticles for antibody-conserving target-specific platin delivery", with C. Xu, **US 20120264961/WO 2011031478**.
19. "Multimetallic nanoparticle catalysts with enhanced electrooxidation", with S. Zhang, S. Guo, and H. Zhu, **US 9093715**.
18. "Highly durable nanoscale electrocatalyst based on core shell particles", with V. Stamenkovic, N. Markovic, C. Wang, and H. Daimon, **US 8178463/8685878**.
17. "Dumbbell-like nanoparticles and a process of forming the same", with H. Yu and S. Wang, **US 7288134/7766993.**
16. "Magnetic materials having superparamagnetic particles", with S. T. Ingvarsson, P. L. Trouilloud, R. Koch, and D. Abraham, **US 8324009/8901685.**
15. "Process of making metal containing iron oxide and iron sulfide based nanoparticle materials", **US 7128891**.
14. "Process of forming magnetic nanocomposites via nanoparticle self-assembly", with H. Zeng, **US 6972046**.
13. "Process of making metal containing iron oxide and iron sulfide based nanoparticle materials", **US 7410625**.

12. “Synthesis of magnetite nanoparticles and the process of forming Fe-based nanomaterials”, **US 6962685**.
11. “Process of forming a multilayer nanoparticle-containing thin film self-assembly”, with S. Anders, **US 6805904**.
10. “Metal salt reduction to form alloy nanoparticles”, **US 6676729**.
9. “Nanoparticle structures utilizing synthetic DNA lattices”, with C. T. Black, S. M. Gates, C. B. Murray, **US 6673401**.
8. Method and apparatus for linking and/or patterning self-assembled objects” (self assembly chemistry), with J. E. E. Baglin, H. Hamann, **US 6866898**
7. “Method and apparatus for linking and/or patterning self-assembled objects” (apparatus for patterned self-assembly), with J. E. Baglin, H Hamann, **US 6566665**.
6. “Low dielectric constant, porous film formed from regularly arrayed nanoparticles”, with S. M. Gates, C. B. Murray, **TW NI-149375**.
5. “Chemical synthesis of monodisperse and magnetic alloy nanocrystal containing thin films”, with C. B. Murray, D. K. Weller, **US 6302940**.
4. “Magnetic storage medium formed of nanoparticles”, with C. T. Black, S. M. Gates, C. B. Murray, **US 6162532**.
3. “Nanoparticle structures utilizing synthetic DNA lattices”, with C. T. Black, S. M. Gates, C. B. Murray, **US 6265021**.
2. “Chemical synthesis of monodisperse and magnetic alloy nanocrystal containing thin films”, with C. B. Murray, D. K. Weller, **US 6254662**.
1. “Methods for producing nanoparticles of transition metals”, with C. B. Murray, **US 6262129**.

2. Book Chapters

1. S. Sun, D. Weller, C. Murray, “Self-assembled magnetic nanoparticle arrays” in “The physics of high density magnetic recording”, eds. M. Plumer, J.van Ek, D. Weller, Springer-Verlag, Chapter 9, 2001.
2. D. J. Sellmyer, H. Zeng, M. Yan, S. Sun, Y. Liu, “New magnetic recording media”, eds. Y. Liu, D. J. Sellmyer, Springer-Verlag and Tsinghua University press, Chapter 6, 2004.
3. S. Sun, “Self-assembled nanomagnets”, in “Advanced magnetic nanostructures”, eds. D. J. Sellmyer, R. Skomski, Klumer, Chapter 9, 2006.
4. C. Wang, S. Sun, “Chemical Synthesis of Monodisperse Magnetic Nanoparticles” in “Handbook of Modern Magnetism and Advanced Magnetic Materials,” eds. S. S. P. Parkin, H. Kronmueller, John Wiley, 2007.
5. J. Xie, S. Sun, "Monodisperse Magnetic Nanoparticles: Chemical Synthesis and Surface Modification" in Encyclopedia of Inorganic Chemistry, eds. R. H. Crabtree, John Wiley: Chichester. DOI: 10.1002/0470862106.ia414. 15 March 2009.
6. S. Peng, J. Kim, S. Sun, “Chemical synthesis, self-assembly and applications of magnetic nanoparticles”, Annual Review of Nano Research, eds. G. Cao, Q. Zhang, J. C. J. Brinker, World Scientific, 2010, Vol 3, Chapter 6, pp 275-307.
7. N. Frey, S. Sun, “Magnetic Nanoparticles for Information Storage Applications”, in Inorganic Nanoparticles: Synthesis, Applications, and Perspectives, CRC Press-Taylor and Francis Group, LLC, 2010.
8. S. B. Kim, S. Lotz, S. Sun, Y. K. Chung, R. D. Pike, D. A. Sweigart, Manganese Tricarbonyl Transfer (MTT) Agent, Inorg. Syn. 2010, 35, p114.
9. S. Guo, S. F. Ho, S. Sun, “Multi-Metallic Nanoparticles as More Efficient Catalysts for Fuel Cell Reactions” in *Catalysis by Nanoparticles*, ed. S. Suib, Elsevier, 2013, Chapter 15.

10. S. Zhang, S. Sun, "Iron Oxide-Based Magnetic Nanoparticles Synthesized from Organic Solution Phase for Advanced Biological Imaging" in *Nanotechnology in Biological Imaging and Diagnostics*, ed. M. Berezin, John Wiley and Sons, 2014, Chapter 2.
11. Q. Li, W. Zhu, S. Sun, "Controllable Synthesis of Metal Nanoparticles for Electrocatalytic Activity Enhancement" in *Atomically Precise Methods for Synthesis of Solid Catalysts*, ed. S. Hermans, T. Visart, Royal Society of Chemistry (Cambridge, UK), 2014, Chapter 9.
12. H. Zhu, Y.-X. Huang, S. Zhang, S. Sun, "Tailoring Nanocrystal Electrocatalysts for Proton Exchange Membrane Fuel Cells" in *Catalysis by Materials with Well-defined Structures*, ed by Z. Wu, S. Overbury, Elsevier, the Netherlands, 2015, Chapter 11.
13. X. Sun, S. Sun, "Preparation of Magnetic Nanoparticles for Biomedical Applications" in *Biomedical Nanotechnology: Methods and Protocols (2nd Edition),* ed. S. H. Petrosko, E. Day, Springer, 2016.
14. L. Wu, Z. Xi, S. Sun, "Well-defined Metal Nanoparticles for Electrocatalysis", in *Morphological, Compositional, and Shape Control of Materials for Catalysis* of the series "Studies in surface science and catalysis", ed. M. Cargnello, P. Fornasiero, Elsevier, 2017, Chapter 4.
15. Z. Yang, S. Qiao, S. Sun, Y. Hou, "Overview of Magnetic Nanomaterials" in *Magnetic Nanomaterials - Fundamentals, Synthesis and Applications*, ed. Y. Hou, D. J. Sellmyer, Wiley, 2017, Chapter 1.
16. J. Li, Z. Xi, S. Sun, "Bimetallic Ultrathin Nanowires" in *Bimetallic Nanostructures: Shape-Controlled Synthesis for Catalysis, Plasmonics and Sensing Applications*. ed. Y. W. Zhang, Wiley, 2018, Chapter 8.

3. Journal Publications (in reverse chronological order)

- 321. M. Shen, A. Afshar, N. Sinai, H. Guan, C. Harris, B. Rubenstein, S. Sun, "Enabling Pd catalytic selectivity via engineering intermetallic core@shell structure", **2023**, submitted.
- 320. J. Yin, J. Jin, L. Zhu, Z. Yin, X. Du, Y. Peng, P. Xi, C.-H. Yan, S. Sun, The Built-in Electric Field across FeN/Fe_3N Interface for Efficient Electrochemical Reduction of CO_2 to CO", *Nature Comm*. **2022**, in revision.
- 319. Wei, Z.; Mullaj, K.; Price, A.; Wei, K.; Luo, Q.; Thanneeru, S.; Sun, S.; He, J. "Polymer N-heterocyclic carbene (NHC) ligands for silver nanoparticles", *ACS Applied Materials & Interfaces*, **2022**, 14, 55227-55237.
- 318. Wei, K.; Guan, H.; Luo, Q.; He, J.; Sun, S. "Recent Advances in CO_2 Capture and Reduction", *Nanoscale*, **2022**, *14*, 11869 – 11891.
- 317. Guan, H.; Shen, M.; Harris, C.; Lin, H.; Wei, K.; Morales, M.; Bronowich, N.; Sun, S. "Cu_2O Nanoparticle-Catalyzed Tandem Reactions for the Synthesis of Robust Polybenzoxazole", *Nanoscale*, **2022**, *14*, 6162 – 6170.
- 316. Gao, Z.-H.; Wei, K.; Wu, T.; Dong, J.; Jiang, D.-E.; Sun, S.; Wang, L.-S. "A Heteroleptic Gold Hydride Nanocluster for Efficient and Selective Electrocatalytic Reduction of CO_2 to CO", *J. Am. Chem. Soc*. **2022**, *144*, 5258–5262.
- 315. Z. Ma, J. Mohapatra, K. Wei, J. P. Liu, S. Sun, "Magnetic Nanoparticles: Synthesis, Anisotropy, and Applications", *Chem. Rev*. **2021**,
- 314. J. Yin, Z. Yin, J. Jin, M. Sun, B. Huang, H. Lin, Z. Ma, M. Muzzio, M. Shen, C. Yu, H. Zhang, Y. Peng, P. Xi, C.-H. Yan, S. Sun, "A new hexagonal cobalt nanosheet catalyst for selective CO_2 conversion to ethanal", *J. Am. Chem. Soc*. **2021**, *143*, 15335–15343.
- 313. H. Liu, M. Shen, P. Zhou, Z. Guo, X. Liu, W. Yang, M. Gao, M. Chen, H. Guan, N. P. Padture, Y. Yu, S. Guo, S. Sun, "Linking melem with conjugated Schiff-base bonds to boost photocatalytic efficiency of carbon nitride for overall water splitting", *Nanoscale*, **2021**, *13*, 9315-9321.
- 312. H. Lin, K. Wei, Z. Yin, S. Sun, "Nanocatalysts in Electrosynthesis", *iScience* **2021**, *24*, 102172.

- 311. Z. Xi, K. Wei, Q. Wang, M. Kim, S. Sun, V. Fung, X. Xia, "Nickel-Platinum Nanoparticles as Peroxidase Mimics with a Record High Catalytic Efficiency", *J. Am. Chem. Soc*. **2021**, *143*, 2660–2664.
- 310. M. Shen, C. Yu, H. Guan, X. Dong, C. Harris, Z. Xiao, Z. Yin, M. Muzzio, H. Lin, J. R. Robinson, V. L. Colvin, S. Sun, "Nanoparticle Catalyzed Green Chemistry Synthesis of Polybenzoxazole", *J. Am. Chem. Soc*. **2021**, *143*, 2115–2122.
- 309. H. Liang, J. Guo, Y. Shi, G. Zhao, S. Sun, X. Sun, "Porous Yolk-Shell Fe/Fe_3O_4 Nanoparticles with Controlled Exposure of highly Active Fe(0) for Imaging Guided Cancer Therapy", *Biomaterials*, **2021**, *268*, 120530.
- 308. S. Sun, "Pocket the difference", *Nature Energy*, **2020**, *5*, 943–944.
- 307. J. Li, S. Sharma, K. Wei, Z. Chen, D. Morris, H. Lin, C. Zeng, M. Chi, Z. Yin, M. Muzzio, M. Shen, P. Zhang, A. A. Peterson, S. Sun, "Anisotropic Strain Tuning of $L1_0$ Ternary Nanoparticles for Oxygen Reduction", *J. Am. Chem. Soc*. **2020**, *142*, 19209–19216.
- 306. Z. Yin, H. Pang, X. Guo, H. Lin, M. Muzzio, M. Shen, K. Wei, C. Yu, P. Williard, S. Sun, "CuPd Nanoparticles as a Robust Catalyst for Electrochemical Allylic Alkylation", *Angew. Chem. Int. Ed*. **2020**, *59*, 15933 –15936.
- 305. Z. Ma, M. Yue, H. Liu, Z. Yin, K. Wei, H. Guan, H. Lin, M. Shen, S. An, Q. Wu, S. Sun, "Stabilizing hard magnetic $SmCo_5$ nanoparticles by N-doped graphitic carbon layer", *J. Am. Chem. Soc*. **2020**, *142*, 8440–8446.
- 304. M. Muzzio, H. Lin, K. Wei, X. Guo, C. Yu, T. Yom, Z. Xi, Z. Yin, S. Sun, "Efficient Hydrogen Generation from Ammonia Borane and Tandem Hydrogenation or Hydrodehalogenation over AuPd Nanoparticles", *ACS Sustainable Chem. Eng.* **2020**, *8*, 2814-2821.
- 303. Z. Xi, X. Cheng, Z. Gao, M. Wang, T. Cai, M. Muzzio, E. Davidson, O. Chen, Y. Jung, S. Sun, Y. Xu, X. Xia, "Strain Effect in Palladium Nanostructures as Nanozymes", *Nano Lett*. **2020**, *20*, 272-277.
- 302. B. Shen, S. Sun, "Chemical synthesis of magnetic nanoparticles for permanent magnet applications", *Chem. Eur. J*. **2020**, *26*, 6757-6766.
- 301. Z. Yin, C. Yu, Z. Zhao, X. Guo, M. Shen, N. Li, M. Muzzio, J. Li, H. Liu, H. Lin, J. Yin, G. Lu, D. Su, S. Sun, "Cu_3N Nanocubes for Selective Electrochemical Reduction of CO_2 to Ethylene", *Nano Lett*. **2019**, *19*, 8658-8663.
- 300. H. Lin, M. Muzzio, K. Wei, P. Zhang, J. Li, N. Li, Z. Yin, D. Su, S. Sun, "PdAu alloy nanoparticles for ethanol oxidation in alkaline condition: enhanced activity and C1 pathway selectivity", *ACS Appl. Energy Mater.* **2019**, *2*, 8701-8706.
- 299. C. Yu, X. Guo, Z. Yin, Z. Zhao, X. Li, J. Robinson, M. Muzzio, C. Barbosa, M. Shen, Y. Yuan, J. Wang, J. Antolik, G. Lu, D. Su, O. Chen, P. Guduru, C. T. Seto, S. Sun, "Highly Efficient AuPd Nanoparticle Catalyst for Synthesizing Polybenzoxazole with Controlled Polymerization", *Matter* **2019**, *1*, 1631-1643.
- 298. Z. Ma, H. Tian, L. Cong, Q. Wu, M. Yue, S. Sun, "A flame-reaction method leading to large-scale synthesis of high performance SmxCoy nanomagnets", *Angew. Chem. Int. Ed*. **2019**, 58, 14509–14512.
- 297. M. Muzzio, J. Li, Z. Yin, I. M. Delahunty, J. Xie, S. Sun, "Monodisperse Nanoparticles for Catalysis and Nanomedicine", *Nanoscale*, **2019**, *11*, 18946 – 18967.
- 296. J. Fu, W. Zhu, Y. Chen, Z. Yin, Y. Li, J. Liu, H. Zhang, J.-J. Zhu, S. Sun, "Bipyridine-assisted assembly of Au nanoparticles on Cu nanowires to enhance electrochemical reduction of CO_2", *Angew. Chem. Int. Ed*. **2019**, *58*, 14100-14103.
- 295. J. Li, S. Z. Jilani, H. Lin, X. Liu, K. Wei, Y. Jia, P. Zhang, M. Chi, Y. J. Tong, Z. Xi, S. Sun, "Ternary CoPtAu Nanoparticles as a General Catalyst for Highly Efficient Electro-Oxidation of Liquid Fuels", *Angew. Chem. Int. Ed*. **2019**, *131*,11651–11657.

- 294. J. Li, S. Sun, "Intermetallic nanoparticles: synthetic control and their enhanced electrocatalysis", *Acc. Chem. Res*. **2019**, *52*, 2015-2025.
- 293. H. Zhang, Y. Zhang, Y. Li, S. Ahn, G. T. R. Palmore, J. Fu, A. A. Peterson, S. Sun, "Cu nanowire-catalyzed electrochemical reduction of CO or CO_2", *Nanoscale*, **2019**, 11, 12075-12079.
- 292. Z. Yin, G. T. R. Palmore, S. Sun, "Electrochemical reduction of CO_2 catalyzed by metal nanocatalysts", *Trends in Chemistry*, **2019**, *1*, 739-750.
- 291. M. Muzzio, C. Yu, H. Lin, T. Yom, D. A. Boga, Z. Xi, N. Li, Z. Yin, J. Li, J. A. Dunn, S. Sun, "Reductive amination of ethyl levulinate to pyrrolidones over AuPd nanoparticles at ambient hydrogen pressure", *Green Chem*. **2019**, *21*, 1895-1899.
- 290. L. An, J. Feng, Y. Zhang, R. Si, G.-C. Wang, F. Cheng, P. Xi, S. Sun, "Controllable Tuning of Fe-N Nanosheets by Co Substitution for Enhanced Oxygen Evolution Reaction", *Nano Energy* **2019**, 57, 644-652.
- 289. C. Yu, X. Guo, M. Muzzio, C. T. Seto, S. Sun, "Self-Assembly of Nanoparticles into Two Dimensional Arrays for Catalytic Applications", *ChemPhysChem* **2019**, *20*, 23–30.
- 288. B. Shen, C. Yu, A. A. Baker, S. K. McCall, Y. Yu, D. Su, Z. Yin, H. Liu, J. Li, S. Sun, "Chemical synthesis of magnetically hard and strong rare-earth metal based nanomagnets", *Angew. Chem. Int. Ed.* **2019**, *131*, 612–616.
- 287. J. Li, S. Sharma, X. Liu, Y.-T. Pan, J. S. Spendelow, M. Chi, Y. Jia, P. Zhang, D. A. Cullen, Z. Xi, H. Lin, Z. Yin, B. Shen, M. Muzzio, C. Yu, Y. S. Kim, A. A. Peterson, K. L. More, H. Zhu, S. Sun, "Hard-magnet $L1_0$-CoPt Nanoparticles Advance Fuel Cell Catalysis", *Joule* **2019**, 3, 124-135.
- 286. M. Shen, H. Liu, C. Yu, Z. Yin, J. Li, Z. Xi, Y. Yu, S. Sun, "Room-temperature Chemoselective Reduction of 3-nitrostyrene to 3-vinylaniline by Ammonia Borane over Cu Nanoparticles", *J. Am. Chem. Soc*. **2018**, *140*, 16460–16463.
- 285. C. Yu, X. Guo, B. Shen, Z. Xi, Q. Li, Z. Yin, H. Liu, M. Muzzio, M. Shen, J. Li, C. T. Seto, S. Sun, "One-Pot Formic Acid Dehydrogenation and Synthesis of Benzene-fused Heterocycles over Reusable AgPd/$WO_{2.72}$ Nanocatalyst", *J. Mater. Chem. A*. **2018**, 6, 23766 – 23772.
- 284. T. Wang, Z.-Z. Luan, J.-Y. Ge, L. Liu, D. Wu, Z.-P. Lv, J.-L. Zuo, S. Sun, "Enhancing Low-Field Magnetoresistance in Magnetite Nanoparticles *via* Zinc Substitution", *Phys. Chem. Chem. Phys*. **2018**, *20*, 17245-17252.
- 283. H. Xie, T. Wang, J. Liang, Q. Li, S. Sun, "Cu-based Nanocatalysts for Electrochemical Reduction of CO_2", *NanoToday*, **2018**, 21, 41-54.
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F. Invited Presentations/Lectures/Seminars

234. "Nanoparticle-catalyzed reduction of CO_2 via alkylcarbonate", **ACS Northeast Regional Meeting (NERM)**, Rochester, New York, Oct 2-5, 2022.
233. Presentation on electrocatalysis to the distinguished lecturer series for 120 years' celebration of Yangzhou University, China, May 12, 2022.
232. Virtual presentation, "Enhancing oxygen reduction reaction catalysis by intermetallic L10-MPt nanoparticles", **ACS National Spring Meeting**, San Diego, CA, March 20-24, 2022.
231. Virtual presentation, "New strategies to the design of nanocatalysts for selective CO_2 reduction", **ACS National Spring Meeting**, San Diego, CA, March 20-24, 2022.
230. Virtual presentation, "MPd alloy nanoparticles as active and stable catalysts for green chemistry reactions", **PacifiChem 2021**, Honolulu, HI, December 15-21, 2021.
229. Webinar, Distinguished Speaker Series, Energy Research Center (KUTEM), Koc University, Istanbul, Turkey, December 10, 2021.
228. Materials Webinar, Functional Nanomaterials for Fuel Cell Electrochemistry, *Materials*/MDPI, September 21, 2021.
227. Webinar Lecture Series "Advances in Colloidal Nanomaterials: Challenges and Opportunities", School of Chemistry and Chemical Engineering and College of Engineering and Applied Sciences, Nanjing University, May 25, 2021.
226. Webinar, NanoBio Lab, Singapore, March 17, 2021.
225. "Intermetallic nanoparticles: Their synthesis and enhanced electrocatalysis", ACSCOLL Live Stream 2020, San Francisco, CA, August 17, 2020.
224. "Assembly of Au nanoparticles on Cu nanowires to tune CO_2 reduction product from CO, C_2H_4 to CH_3CHO", **the 258th ACS National Meeting**, San Diego, CA, August 25-29, 2019.
223. "Hard-magnetic $L1_0$-MPt/Pt Nanoparticles for Enhanced Electrocatalysis", **the 6th Nano Today Conference**, June 16-20, 2019, Lisbon, Portugal.
222. Seminar, Lanzhou Institute of Chemistry and Physics, June 5, 2019.
221. Seminar, College of Chemistry and Chemical Engineering, Lanzhou University, June 5, 2019.
220. Seminar, College of Engineering, Peking University, June 3, 2019.
219. Seminar, Department of Materials Sciences and Engineering, Beijing University of Sciences and Technology, June 3, 2019.
218. Seminar, Department of Chemical Engineering and Environmental Engineering, Jiangsu University of Science and Technology, May 20, 2019.
217. Seminar, College of Chemistry, Jiangsu University, May 20, 2019.
216. "Hard-magnetic $L1_0$-CoPt/Pt Nanoparticles for Fuel Cell Catalysis", **the 257th ACS National Meeting**, Orlando, FL, March 31-April 4, 2019.
215. "Chemical synthesis of magnetically hard rare-earth metal nanoparticles", **the 257th ACS National Meeting**, Orlando, FL, March 31-April 4, 2019.

214. “Self-Assembly of Nanoparticles into Two Dimensional Arrays for Catalytic Applications”, **the 257th ACS National Meeting**, Orlando, FL, March 31-April 4, 2019.
213. Seminar, “Monodisperse magnetic nanoparticles and their potential applications”, IEEE Santa Clara Valley/San Francisco Jt. Section Magnetics Chapter, Feb 12, 2019.
212. Lee Hsun Lecture on Materials Sciences, “Monodisperse magnetic nanoparticles and their potential applications”, Institute of Metals, Shenyang, CAS, China, December 10, 2018.
211. Seminar, Department of Chemistry and Energy Institute, SUNY-Binghamton, NY, Sept 28, 2018.
210. “Controlling nanoparticle structure and nanoparticle interaction with oxide support to enhance electrochemical oxidation reactions”, **the 256th ACS National Meeting**, Boston, MA, August 19-23, 2018.
209. “Nanoparticle Catalysis Controlled at Atomic Level”, **the 256th ACS National Meeting**, Boston, MA, August 19-23, 2018.
208. “Intermetallic Core/Shell $L1_0$-FePt/Pt Nanoparticles for Efficient Oxygen Reduction Reaction in Fuel Cells”, **the 256th ACS National Meeting**, Boston, MA, August 19-23, 2018.
207. “Enhancing Nanoparticle Catalysis for Chemical Transformations”, **the 256th ACS National Meeting**, Boston, MA, August 19-23, 2018.
206. Seminar, Sichuan Science and Technology University, Zigong, Sichuan, China, July 6, 2018.
205. Seminar, School of Chemistry and Chemical Engineering, Sichuan University, July 5, 2018.
204. Workshop Seminar, Chongqing Technic and Business University, Chongqing, China, July 4, 2018.
203. “Synthetic Tuning of Nanoparticles to Achieve High Efficiency in Electrocatalysis”, 13th Sino-US Forum on Nanoscale Science and Technology, Chengdu, China, June 29 –July 3, 2018.
202. Seminar, State Key Lab of Electrochemistry, Northwest Normal University, China, July 24, 2018.
201. Lecture on Tuning Nanoparticle Catalysis for Electrochemical Reactions, Lanzhou University, China, June 23, 2018.
200. Seminar, State Key Lab and College of Chemistry and Chemical Engineering, Nanjing University, June 21, 2018.
199. Seminar, Materials Chemistry Institute, Nanjing Normal University, June 20, 2018.
198. Inorganic and Organic Seminar, Department of Chemistry, University of Chicago, May 11, 2018.
197. “Synthetic Tuning of Nanoparticles to Achieve High Efficiency in Electrocatalysis”, **MRS Spring Meeting,** Phoenix, AZ, April 2-6, 2018.
196. “A new assembly approach to nanostructured $SmCo_5$ and $SmCo_5$-Fe”, **MRS Spring Meeting,** Phoenix, AZ, April 2-6, 2018.
195. “Controlling Metal Nanoparticle Interactions with Nanoscale-Supports to Enhance Nanoparticle Catalysis”, **the 254th ACS National Meeting**, August 20-24, 2017, Washington, DC.
194. Seminar, College of Engineering, Peking University, China, July 23, 2017.
193. Honorable Speaker, Frontier in Nanoscience Forum, Key Laboratory of Molecular Nanostructure and nanotechnology, Chinese Institute of Chemistry, CAS, July 23, 2017.
192. Seminar, State Key Lab of Electrochemistry, Northwest Normal University, China, July 21, 2017.
191. “Wenqui” Lecture on Tuning Nanoparticle Catalysis for Electrochemical Reactions, Lanzhou University, China, July 20, 2017.
190. Seminar, Materials Science and Engineering, Jiangsu Science and Technology University, China, July 10, 2017.
189. Plenary Speaker, “Formation of Atomic Scale Pt around a Nanoparticle Core to Achieve Much Enhanced Electrocatalysis of Pt”, **International Workshop on Nanomaterials and Nanodevices**, Institute of Physics, Beijing, China, July 4, 2017.
188. Seminar, Huazhong University of Science and Technology, China, June 30, 2017.
187. **XingDa Lecture**, “Tuning Nanoparticle Catalysis for Efficient Electrochemical Reactions”, Dec 9, 2016, Peking University.

186. Plenary Talk, "Tuning Nanoparticle Catalysis for Efficient Electrochemical Reactions", **2nd Zing Nanocrystals Conference**, August 2-5, 2016, Dublin, Ireland.
185. "High Temperature Solution Phase Synthesis of Nanoparticles with Controlled Dimensions and Properties", **2nd International Conference on Polyol Medicated Synthesis**, July 11-13, 2016, the University of Shiga Prefecture, Hikone, Japan.
184. "Controlled Synthesis and Assembly of Nanoparticles for Electrocatalysis", **International Workshop on Nanomaterials and Nanodevices**, July 8-10, 2016, Institute of Physics, Beijing, China.
183. Seminar, College of Engineering, Peking University, July 6, 2016.
182. Seminar, University of Science and Technology of China, June 28, 2016.
181. Seminar, Nanjing University of Aeronautics and Astronautics, June 27, 2016.
180. "Controlled Assembly of Nanoparticles for Energy Conversions", **11th China-US Nano-Forum**, June 18-20, 2016, Nanjing University, China.
179. "Magnetic Nanoparticles for Bioimaging and Therapeutic Applications", **2016 International Symposium on Nanomedicine**, June 16-17, 2016, Suzhou, China.
178. "Tuning Nanocatalysts for Electrochemical Reactions", **International Energy Materials and Chemistry Workshop**, June 14-16, 2016, Changsha, Hunan, China.
177. Seminar, Energy Materials Institute, Dalhousie University, April 1, 2016.
176. "Synthesis and Assembly of Barium-doped Iron Oxide Nanoparticles and Nanomagnets", **MRS Spring Meeting,** March 28-30, 2016, Phoenix, AZ.
175. "Rational synthesis and assembly of nanocatalysts for energy applications", **Pacifichem2015**, Dec 15 - 20, 2015, Honolulu, Hawaii.
174. "Controlling nanoparticle structure and magnetism for enhanced catalysis", **MRS Spring Meeting**, Nov 30-Dec 3, 2015, Boston, MA.
173. "Tuning Nanocatalysts for Efficient Electrochemical Reactions", **MRS Spring Meeting**, Nov 30-Dec 3, 2015, Boston, MA.
172. Seminar, Department of Chemistry, Boston College, November 19, 2015.
171. Seminar, Department of Chemistry and Biochemistry, the University of South Carolina, November 13, 2015.
170. "Tuning Nanoparticle Catalysis for Nanomedicine and Energy Applications", **the Chemistry and Sustainability Lecture Series**, the University of New Hampshire, October 15, 2015.
169. Seminar, Department of Chemistry, the University of Connecticut, September 30, 2015.
168. Seminar, Center for Nano and Molecular Sciences, University of Texas - Austin, September 2, 2015.
167. "Synthesis and Assembly of Nanocatalysts for Efficient Electrochemical Reduction Reactions", **the 250th ACS National Meeting**, August 15-20, 2015. Boston, MA.
166. Seminar, National Center for Nanoscience and Technology, Beijing, July 10, 2015.
165. Seminar, Changchun Institute of Applied Chemistry, July 9, 2015.
164. Seminar, Department of Physics, Northeast Normal University, Changchun, China, July 8, 2015.
163. Seminar, Department of Chemical Engineering, Harbin Institute of Technology, July 7, 2015.
162. "Synthesis and Assembly of Nanoparticle Catalysts for Electrochemical Reduction Reactions", **2015 International Workshop on Emerging Functional Electronic Materials and Devices**, the Institute of Physics and the University of Chinese Academy of Sciences, Beijing, China. June 30-July 6, 2015.
161. Seminar, Stay Key Laboratory of Coordination Chemistry, Nanjing University, June 22, 2015.
160. "Magnetic Nanoparticles for Bioimaging and Therapeutic Applications", **the 2015 Magnetically Stimulated Soft Materials Conference**, May 11-12, 2015. The University of Georgia, Athens, GA.
159. "Enhancing Nanoparticle Catalysis on Electrochemical Reduction of H2O2 for Sensitive Cancer Detection", **MRS Spring Meeting**, April 6-10, 2015, San Francisco, CA.
158. "High Performance Magnetic Nanocomposites via Rational Assembly of Nanoparticles", **MRS Spring Meeting**, April 6-10, 2015, San Francisco, CA.

157. “Tuning Core/Shell Nanoparticles for Catalysis Optimization”, **the 249th ACS National Meeting**, March 22-26, 2015. Denver, CO.
156. “Functional Nanoparticles: Synthesis and Biomedical Applications”, **the 249th ACS National Meeting**, March 22-26, 2015. Denver, CO.
155. “Chemical Synthesis and Rational Assembly of Magnetic Nanoparticles into Exchange-Spring Nanocomposites”, **The Minerals, Metals & Materials Society (TMS) 2015 144th annual meeting and exhibition**, March 15-19, 2015. Orlando, FL.
154. “Core/shell Au/MnO nanoparticles as a new form of electrocatalyst for sensitive cancer detection”, **MRS Fall Meeting**, Dec 1-5, 2014. Boston, MA.
153. “Rational synthesis and assembly of nanocatalysts for energy applications”, **the 248 ACS National Meeting**, San Francisco, CA, August 10-14, 2014.
152. “Monodisperse Au Nanoparticles for Electrocatalytic Reduction of CO_2”, **the 248th ACS National Meeting**, San Francisco, CA, August 10-14, 2014.
151. Seminar, Korea Institute of Science and Technology, Seoul, South Korea, August 7, 2014.
150. Seminar, Department of Chemistry, Sogang University, Seoul, South Korea, August 6, 2014.
149. “Magnetic Nanoparticles for Bioimaging and Therapeutic Applications”, **the 2nd Symposium of Institute of Basic Science in 2014 –** *Nanoparticles: Preparation and Biomedical Applications,* Seoul, South Korea, August 5, 2014.
148. Seminar, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, July 8, 2014.
147. “Rational Synthesis and Assembly of Nanocatalysts on Graphene for Oxygen Reduction Reaction”, Workshop on Nanoscale Materials and Devices, Wuhan University, China. July 3, 2014.
146. “Rational Synthesis and Assembly of Nanocatalysts for Energy Applications”, 2014 Summer School, the Institute of Physics and the University of Chinese Academy of Sciences, Beijing, China. July 1-2, 2014.
145. Seminar, State Key Laboratories on Coordination Chemistry, Nanjing University, China. June 25, 2014.
144. Seminar, Department of Chemistry and Materials, University of Science and Technology, China. June 20, 2014
143. Seminar, Department of Chemistry and Chemical Engineering, Anhui University, China. June 19, 2014
142. “High performance nanocomposite permanent magnets via rational assembly of nanoparticles”, **MRS Spring Meeting**, April 21-25, 2014. San Francisco, CA.
141. “How to precisely synthesize nanoparticulate catalysts”, **Brown University Center for the Capture and Conversion of CO_2 - Tutorial Series**, March 4, 2014.
140. “Highly efficient nanoparticle catalysts for energy applications”, **the 3rd Nano Today Conference**, Dec 8-11, 2013, Singapore.
139. “MPt nanowires as efficient catalysts for oxygen reduction reaction”, **ACS 246th National Meeting**, Sept 8-12, 2013. Indianapolis, IN.
138. “Multifunctional nanoparticles for bioimaging and therapeutic applications”, **ACS 246th National Meeting**, Sept 8-12, 2013. Indianapolis, IN.
137. “Highly efficient nanoparticle catalyst for fuel cell applications”, **ACS 246th National Meeting**, Sept 8-12, 2013. Indianapolis, IN.
136. Seminar on magnetic nanoparticles for data storage, Hitachi global science and technology (HGST), August 29, 2013
135. Seminar, Engineering School, Peking University, July 26, 2013.
134. Seminar, Magnetism Group, Institute of Physics, Chinese Academy of Science, Beijing. July 26, 2013.
133. Seminar, Department of Chemistry and Chemical Engineering, Lanzhou University, July 24, 2013.

132. “High Performance Nanocomposite Permanent Magnets by Rational Assembly of Nanoparticles”, **Symposium on Magnetic Nanoparticles,** July 18, 2013, Ningbo, China.
131. “Siyuan Professorship” Seminar, Department of Chemistry and Chemical Engineering, Nanjing University. July 15, 2013.
130. Seminar, Department of Chemistry and Materials, University of Science and Technology, China. July 13, 2013.
129. “Synthesis and Biomedical Applications of Magnetic Nanoparticles”, **International Symposium on Nanoparticle-based Technologies for Cell Tracking**, July 1-3, The University of Liverpool, UK.
128. Keynote Speech, “Rational Synthesis of metallic nanoparticles for catalytic application”, **Nanomaterials Symposium 2013 – Frontiers in Materials Science for the 21st Century – Novel Materials for Sustainable Catalysis**, University of Rochester, May 20, 2013.
127. Seminar, Materials Science and Engineering, North Carolina State University, April 26, 2013.
126. “Metallic Nanoparticles Assembled on Graphene as Enhanced Catalyst for Oxygen Reduction Reaction”, **the 245th ACS National Meeting**, April 7-11, 2013, New Orleans, LA.
125. Keynote Speech, “Multifunctional nanoparticles for imaging guided therapeutic applications”, **ASME 2013 2nd Global Congress on Nanoenigeering for Medicine and Biology**, Feb 4-6, 2013, Boston, MA.
124. “Structure-induced enhancement in electrooxidation of trimetallic FePtAu”, **the 244th ACS National Meeting**, August 19-23, 2012, Philadelphia, PA.
123. “Rational synthesis of metallic nanoparticles for catalytic applications”, **7th Sino-US Nano Forum,** June 8-11, 2012, Xiamen University, Xiamen, China.
122. Keynote Speech, “Multifunctional Nanoparticles for Biomedical Imaging and Therapeutics”, **the 9th Biomaterials Congress**, Jun 1-5, 2012, Chengdu, China.
121. Seminar, Department of Chemistry, Duke University, Nov 27, 2012.
120. Lecture in Frontiers in Chemistry, Department of Chemistry, Case Western Reserve University, October 4, 2012.
119. Seminar, NASA Glenn Research Center, October 4, 2012.
118. Seminar, Biomaterials and Engineering, Southeast University, July 6, 2012.
117. Seminar, Shenyang Institute of Metals, Chinese Academy of Science, July 2, 2012.
116. Seminar, Jilin Normal University, July 1, 2012.
115. Seminar, College of Materials Science and Engineering, Jilin University, June 30, 2012.
114. Seminar, Changchun Institute of Applied Chemistry, Chinese Academy of Science, June 27, 2012.
113. Seminar, State Key Lab and College of Chemistry and Chemical Engineering, Nanjing University, June 23, 2012.
112. Seminar, Huaibei Normal University, June 18, 2012.
111. Special Seminar to Undergraduate Students, Sichuan University, June 5, 2012.
110. Seminar, Department of Chemistry and Biochemistry, Univ. of Arkansas, April 30, 2012.
109. Keynote Speech, Ration Synthesis of Metallic Nanoparticles for Catalytic Applications”, **Center in Green Chemistry and Catalysis, 2011 Annual Meeting**, Dec 9, 2011, Universite Laval, Quebec, Canada.
108. “Nanocomposite Permanent Magnets”, **ASM International, the Materials Information Society/Rhode Island Chapter**, Oct 19, 2011, Pawtucket, RI.
107. “FePt nanoparticles as Fe reservoir for controlled Fe release and tumor inhibition”, **the 242nd ACS National Meeting**, Aug 28 – Sept 1, 2011, Denver, CO.
106. “Design and Synthesis of Composite Nanoparticles for Fuel Cell Catalysis”, **Gordon Research Conferences - Clusters, Nanocrystals & Nanostructures**, July 24-29, 2011, Mount Holyoke College, South Hadley, MA.

105. "Rational Synthesis of Composite Nanoparticles for Catalytic Applications", **International Workshop on Nanomaterials, Devices and Physical Properties**, July 1-5, 2011, Beijing/Xiangtang, China.
104. Keynote Speech, "Synthesis and surface modification of nanoparticles for biomedical and catalytic applications", **Greener Nano 101 Workshop**, May 1-3, 2011, San Jose, CA.
103. "Rational Synthesis of Metallic Nanoparticles for Catalytic Applications", **Workshop on Chemically Synthesized Nanoparticles for Catalysis**, Argonne National Lab, April 28-29, 2011.
102. Seminar, Department of Chemistry and Institute of Materials Science, Univ. of Connecticut, Oct 12, 2011.
101. Seminar, Peking University, China, July 2011.
100. Seminar, Lanzhou University, China, June 2011.
99. Seminar, Nanjing University of Science and Technology, China, June 2011.
98. Seminar, Nanjing University, China, June 2011.
97. Colloquium, Department of Chemistry, Rutgers the State University of New Jersey, April 26, 2011.
96. Visiting Scientist Lectures, Data Storage Institute, Singapore, Feb 22-24, 2011.
95. Nanomaterials Seminar, Oak Ridge National Lab, Jan 26, 2011.
94. "Multifunctional Nanoparticles for Imaging Guided Therapeutic Applications", **Pacifichem 2010**, Dec 15-20, Honolulu, HI.
93. "Highly Efficient Nanoparticle catalyst for Fuel Cell Applications", **Federation of Analytic Chemistry & Spectroscopy Conference**, Oct 17-21, 2010, Raleigh, NC.
92. "Multifunctional Nanoparticle Catalysts", **International Workshop on Nanomaterials, Devices and Physical Properties**, July 1-3, 2010, Beijing.
91. "Porous Hollow Fe_3O_4 Nanoparticles for Targeted Delivery and Controlled Release of Cisplatin", **MRS Spring Meeting**, April 5-10, 2010, San Francisco, CA.
90. "Rational Synthesis and Self-Assembly of Transition Metal Nanoparticles for Catalytic Applications", **MRS Spring Meeting**, April 5-10, 2010, San Francisco, CA.
89. "Facile synthesis of SmCo nanomagnets", **11th MMM/Intermag Meeting**, Jan 19-22, 2010, Washington D.C.
88. Colloquium, Department of Chemistry and AMRI, the University of New Orleans, Nov. 5, 2010.
87. CNM Nanoscience Colloquium, Argonne National Lab, Oct 27, 2010.
86. Seminar, Peking University, China, July 2010.
85. Seminar, Nanjing University, China, June 2010.
84. Colloquium, Department of Chemistry, Brandeis University, May 3, 2010.
83. Colloquium, Department of Physics, the University of Rhode Island, April 30, 2010.
82. "Developing multifunctional magnetic nanoparticles for imaging and delivery applications", **MRS Fall Meeting**, Nov 29 – Dec 3, 2009, Boston, MA.
81. **Tutorial**: "Magnetic nanoparticles and their applications in biomedicine", **MRS Fall Meeting**, November 29 - Dec.3, 2009, Boston, MA.
80 "SmCo-based exchange spring nanocomposites", **Advanced Light Source User's Meeting**, Oct 15-17, 2009, Lawrence Berkeley National Lab.
79. "Highly efficient nanoparticle catalyst for fuel cell applications", **Advanced Light Source User's Meeting**, Oct 15-17, 2009, Lawrence Berkeley National Lab.
78. "Multifunctional Nanoparticles for Nanomedicine", **International Workshop on Nanomaterials, Devices and Physical Properties**, July 1-3, 2009, Beijing.
77. "Functional Nanoparticles: Synthesis and Potential Applications", **MRS Spring Meeting**, April 13-17, 2009, San Francisco, CA.
76. "Developing multifunctional nanoparticles for imaging and delivery applications", the **237th American Chemical Society Meeting**, March 22-26, 2009, Salt Lake City, UT.

75. "Functional Nanoparticles: Synthesis and Applications", **TMS 2009 Annual Meeting**, Feb 15-19, 2009, San Francisco, CA.
74. Seminar, Peking University, China, July 2009.
73. Seminar, Lanzhou University, China, July 2009.
72. Seminar, Sichuan University, China, July 2009.
71. Seminar, Nanjing University, China, June 2009.
70. "Dispersible Ferromagnetic FePt Nanoparticles", **Asian Magnetic Conference**, Dec 10-13, 2008. Busan, South Korea.
69. "Synthesis and self-assembly approaches to polymer-inorganic hybrid nanoparticles", **PMSE symposium**, **ACS Spring Meeting**, April 6-10th, 2008. New Orleans, LA.
68. "Monodisperse magnetic NPs: Chemical synthesis and potential applications", **ACS RI Section Meeting**, January 31, 2008, Providence, RI.
67. Seminar, Korea Institute of Science and Technology, South Korea, Dec 9, 2008.
66. Special Seminar, Korea University, South Korea, Dec 9, 2008.
65. Seminar, Seoul National University, South Korea, Dec 8, 2008.
64. Seminar, Department of Chemistry, the University of Pennsylvania, Sept 30, 2008.
63. Seminar, University of Science and Technology, China, July 2008.
62. Seminar, Peking University, China, July 2008
61. **Tutorial**: "Chemical synthesis of magnetic nanocomposites", **MRS Fall Meeting**, November 26-30, 2007, Boston, MA.
60. "Developing multifunctional magnetic nanoparticles for imaging and delivery applications", **1st Annual Molecular and Cellular Imaging Symposium**, September 27-28, Yale University.
59. "Monodisperse magnetic nanoparticles and their nanomagnetic applications", **Workshop in Integrated Nanostructured Systems**, University at Buffalo, May 18-19, 2007.
58. "FePt nanoparticle arrays for information storage applications", **ACS Mid-Atlantic Regional Meeting**, May 16-18, 2007, Collegeville, PA.
57. "Shape induced texture of magnetic nanoparticles", **MRS Spring Meeting**, April 9-13, 2007, San Francisco, CA.
56. Nanomaterials Seminar, Indiana University, Nov 7, 2007.
55. Nanobiotech seminar, Stanford University, Jan. 23, 2007.
54. "Magnetic nanoparticles for biomagnetic applications", **the 2nd Annual Meeting of American Academy of Nanomedicine**, September 9-11, 2006, Washington DC.
53. "Monodisperse magnetic nanoparticles: chemical synthesis and potential nanomagnetic applications", **International Workshop on Nanomaterials, Devices and Physical Properties**, July 14-16, 2006, Beijing.
52. Seminar, Department of Chemistry, Beijing University, July 18, 2006.
51. Seminar, Department of Chemistry, Tsinghua University, July 17, 2006.
50. Seminar, Center of Nanotechnology, University of Washington, April 25, 2006.
49. Seminar, Department of Chemistry and Biochemistry, University of Massachusetts-Dartmouth, Feb 1, 2006.
48. "Chemical synthesis and assembly of magnetic nanomaterials", **Pacifichem 2005**, December 15-20, 2005, Hawaii.
47. "Magnetic nanoparticles for biomagnetic applications", **Maui Symposium on Magnetic Materials at the Interface between Polymer Science and Biology,** December 10-14, 2005, Maui, Hawaii.
46. **Paul Sabatier *Lecture* on magnetic nanomaterials**, "Synthesis, self-assembly and applications of monodisperse magnetic nanoparticles", Sept 29-Oct 1**,** 2005, Toulouse, France.
45. "Chemical synthesis of functional nanomaterials", **40th IUPAC Congress**, August 14-19, 2005, Beijing, China.

44. “Magnetic nanoparticles for biomagnetic applications”, **MRS Spring Meeting**, March 28-April 1, 2005, San Francisco, CA.
43. “Self-assembled nanomagnets”, **APS March Meeting**, March 21-25, 2005, Los Angeles, CA.
42. Colloquium, Department of Physics, Brown University, Sept. 12, 2005.
41. “Magnetic bead fabrication for bio-medical applications”, **the 51st AVS Symposium**, Nov. 14-19, 2004, Anaheim, CA.
40. Lecture, “Self-assembled nanomagnets”, **NSF MRSEC Review and Symposium**, University of Nebraska-Lincoln, Sept 23-24, 2004.
39. “FePt and oxide coated FePt nanoparticles”, **International symposium on magneto-optical recording**, May 16-19, 2004, Yokohama, Japan.
38. ***Tutorial talk***, “Chemical synthesis and self-assembly of monodisperse magnetic nanoparticles”, **Workshop on Correlation of Structure and Magnetism in Novel Magnetic Nanoparticles**, Feb. 25-29, 2004, Bonn, Germany.
37. ***Keynote Speech***, “Self-assembled nano-magnets for future high density information device applications”, **the 21st Century COE Program on System Construction of Global-Network Oriented Information Electronics**, Jan. 29-30, 2004, Sendai, Japan.
36. “Improved preparation of MPt (M = Fe, Co) nanoparticles”, **the 9th Joint MMM/Intermag Conference**, January 5-9, 2004, Anaheim, CA.
35. Colloquium, Department of Chemistry and Physics and MINT Center, University of Alabama, Sept. 22, 2004
34. Colloquium, Department of Chemistry and Advanced Materials Research Institute, University of New Orleans, April 18, 2004.
33. ***Keynote Speech***, “Monodisperse magnetic nanoparticles: Chemical synthesis and self-assembly”, **the 5th International Symposium on Magnetic Materials and Applications**, December 4-6, 2003, Daejeon, South Korea.
32. “Magnetic nanoparticle arrays for information technology applications”, **Emerging Information Technology Conference**, Oct. 31-Nov.1, 2003, Princeton, New Jersey.
31. “Progress in exchange-spring nanocomposites via self-assembly”, **DOE CESP annual workshop on nanocomposite magnetic materials**, October 19-21, 2003, Pacific Grove, California.
30. “Polymer-mediated self-assembly of magnetic nanoparticles”, Symposium of Smart nano-assemblies, **226th American Chemical Society Meeting**, September 7-9, 2003, New York, NY.
29. “Monodisperse magnetic nanoparticles: chemical synthesis and self-assembly”, **NATO Advanced Research Workshop on Nanostructured Magnetic Materials and Their Applications**, July 1-5, 2003, Istanbul, Turkey.
28. “Synthesis and assembly of magnetic nanoparticles”, **the 77th ACS Colloid and Surface Science Symposium**, June 15-18, 2003, Atlanta, GA.
27. Colloquium, Department of Chemistry and Biochemistry, Southern Illinois University, April 18, 2003.
26. Condensed Matter Physics Seminar, Department of Physics and Astronomy, University of Delaware, April 8, 2003.
25. Seminar, Department of Materials Science and Engineering, Johns Hopkins University, March 27, 2003.
24. Seminar, Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign. March 18, 2003.
23. Seminar, Chemical and Biomolecular Engineering, Johns Hopkins University, Feb 27, 2003.
22. Seminar, Department of Chemistry, Duke University, Jan. 30, 2003.
21. ***Tutorial talk***, “How to create self-assembled nanostructures”, **the 47th Annual Conference on Magnetism and Magnetic Materials**, November 11-15, 2002, Tempa, Florida.
20. “Magnetic nanoparticles for DNA labeling”, **the 47th Annual Conference on Magnetism and Magnetic Materials**, November 11-15, 2002, Tempa, Florida.
19. “Exchange-spring nanocomposites via self-assembly”, **DOE CESP annual workshop on nanocomposite magnetic materials**, October 20-22, 2002, Stony Brook, New York.
18. “Chemical synthesis and assembly of magnetic nanoparticles”, **the 8th international conference on electronic materials**, June 10-14, 2002, Xian, China.
17. “Self assembling iron platinum nanoparticles”, **International symposium on magneto-optical recording**, May 5-8, 2002. Brittany, France.
16. Seminar, Department of Chemical Engineering, Univ. of Rochester, Sept 11, 2002.
15. MRSEC seminar, Columbia University, March 27, 2002.
14. Special Colloquium, Materials Science Division (MSD), Argonne National Lab, Jan.23, 2002.

13. "FePt Nanoparticle and FePt Nanocrystal Assembly", **The 15th International Vacuum Congress, IUVSTA/AVS**, Oct 28-Nov. 2, 2001, San Francisco, CA.
12. "Monodisperse Magnetic Nanomaterials: Synthesis, Assembly and Applications", **International Workshop on Nanoscience and Nanotechnology**, 16 – 18 July 2001, Beijing, China.
11. "Magnetic nanoparticles and nanoparticle assemblies", **International Conference on Materials for Advanced Technologies**, 1-6 July 2001, Singapore.
10. "Monodispersed FePt nanoparticles and ferromagnetic FePt nanocrystal superlattices", **the 8th Joint MMM-Intermag Conference**, Jan 2001, San Antonio, TX.
9. Seminar, Materials Science and Engineering, Stanford University, Nov. 02, 2001.
8. "Magnetic nanoparticles and nanocrystal superlattices", **the 3rd Annual Technology and Business Opportunities Conference on FINE, ULTRAFINE, AND NANOPOWDERS 2000**, October 2000, Montreal, Quebec, Canada.
7. "Nanoparticle array for magnetic recording", **the International Symposium on Research and Education in the 21st Century (ISRE 2000)**, August 2000, Sendai, Japan.
6. "Chemical synthesis and assembly of monodisperse magnetic nanoparticles", **the 7th Annual International Conference on Composites Engineering**, July 2000, Denver, CO.
5. "Chemical approach to hard magnetic FePt nanocrystal assembly", **the 10th Annual NSIC Meeting**, June 2000, Monterey, CA.
4. "Chemical Synthesis of monodisperse Co and FePt magnetic nanoparticles", **Advances in Materials Chemistry, ACS New England Regional Meeting,** June 2000, Storrs, CT.
3. Colloquium, Department of Chemistry, Brown University, September 25, 2000.
2. "Magnetic thin films prepared from monodisperse cobalt-based nanocrystals", **MRS spring meeting**, April 1999, San Francisco, CA.
1. "Synthesis of monodisperse elemental and alloy magnetic nanocrystals and their assembly into 3-D superlattices", **the 43rd Annual Conference on Magnetism and Magnetic Materials**, November 1998, Miami, Florida.

G. Selected Research Highlights

The Brown Daily Herald, "Chemical research made cleaner, more sustainable in University lab - *University research team designs process to reduce degradation in synthetic polymer"* by Chris Schutte, Dec 4, 2019.
Trends in Chemistry **Spotlight**, "*Rational Design of Bimetallic Nanocatalysts for Tandem Transformations*" *by* Ivo F. Teixeira1 and Pedro H. C. Camargo, 2019, https://doi.org/10.1016/j.trechm.2019.10.001
Brown University Press Release October 9, 2019, "New production technique for high-performance polymer could make for better body armor" by Kevin Stacey.
Chemical & Engineering News, May 1, 2017, "Multicomponent catalyst promotes multistep reactions" by Stephen Ritter.
Brown University Press Release, April 24, 2017, "Researchers develop eco-friendly, 4-in-1 catalyst" by Kevin Stacey.
CEP Magazine, May 2016, "Catalyst Transforms CO_2 into Ethylene" by Stephanie Pappas.
Brown University Press Release, April 7, 2016, "Catalyst could make production of key chemical more ecofriendly" by Kevin Stacey.
Providence Business News, Nov 18, 2013, "Tackling CO_2 conversion challenge" by Patrick Anderson.
Chemical & Engineering News, Nov 11, 2013, "Nanocatalytic Sites Break CO_2 - Study finds 8-nm particles are better carbon dioxide electroreduction catalysts and explains why" By Mitch Jacoby.
Brown University Press Release, Oct 24, 2013, "Gold nanoparticles give an edge in recycling CO_2" by Kevin Stacey. Also highlighted by **NSF Science360**, Oct 28, 2013.
Providence Business News, Nov 26-30, 2012, "Brown team studying new fuel cell catalyst" by Michael Souza.
Brown University Press Release, Oct 16, 2012, "Can cobalt-graphene catalyst beat platinum?" by Kevin Stacey.

JACS Spotlights, Issue 36, Sept 2012, "Spinning Out Indium Tin Oxides for Flexible Surfaces".
Brown University Press Release, Aug 7, 2012, "Chemists advance clear conductive films" by David Orenstein.
Chemical & Engineering News, March 19, 2012, "Touch Of Gold Makes Catalyst Shine - Adding gold to bimetallic nanoparticles improves the fuel-cell catalyst's function and durability" by Bethany Halford.
Brown University Press Release, March 12, 2012, "Touch of gold improves nanoparticle fuel-cell reactions" by Richard Lewis.
Brown University Press Release, Feb 16, 2012, "Researchers make living model of brain tumor" by Richard Lewis.
Chemical & Engineering News, Feb 3, 2012, "Nanoparticle Catalysts that Rest on Graphene", by Prachi Patel.
The American Ceramic Society, August 20, 2010, "Less platinum, better efficiency for fuel cells" by Ann Spence.
New Energy and Fuel, May 10, 2010, "The race to Find a Platinum Replacement is on" by Brian Westenhaus.
The Providence Journal, May 4, 2009, "Zero in on a targeted treatment of cancer" by Wayne Miller.
Bloomberg News/the Providence Journal, March 25, 2009, "Brown chemists extend life of fuel cell", by Halia Pavliva.
Providence Business News, March 25, 2009, "Brown study may mean cheaper fuel cells", by Susan A. Baird.
Chemistry World, March 24, 2009, "Producing powerful palladium particles", by Lewis Brindley.
Brown University Press Release, March 17, 2009, "Brown Chemists Create More Efficient Palladium Fuel Cell Catalysts" by Richard Lewis; Also highlighted by **NSF News Service**, Science 360.
Brown Daily Herald, March 16, 2009, "The (nano)future of cancer treatment" by Matthew Scult.
Chemistry World, March 16, 2009, "Nanodumbbells target cancer cells" by Hayley Birch.
Health Check: Breast cancer research, April 1, 2009, reported by NBC 10's Barbara Morse Silva.
Brown University Press Release, March 10, 2009, "Twin Nanoparticle Shown Effective at Targeting, Killing Breast Cancer Cells" by Richard Lewis; also highlighted by **Japan Herald**, **Science Daily**.
Chemical & Engineering News, April 21, 2008. "Catalyst Shape Matters" by Bethany Halford.
Providence Business News, April 21, 2008. **"**Brown chemists making progress in fuel research" by David Ortiz.
Brown University Press Release, April 10, 2008, "Brown Chemists Find Platinum Nanocube Improves Fuel Cells" by Richard Lewis.
APS-Physics, New Nano-Method May Help Compress Computer Memory. 2007.
Technology Review (MIT), July 07, 2007. "Denser Data Storage - Nanorods and nanowires could increase memory" by Erica Naone.
APS-Physics and Brown University News Release, June 22, 2007. "New Nano-Method May Help Compress Computer Memory" by Martha Downs.
Science Watch, Nov. 2006. "Nanomagnets Made to Order for Biomedical Uses" by *John Emsley***.**
The National Cancer Institute/Nanotech News, Sept. 2006. "Improving Magnetic Nanoparticle Design".
Nature Nanotecholgy, Aug. 2006. "Nanoparticles: New iron brew" by *Stuart Cantrill*.
Nano News Press Releases, Feb 2006. "Scientists are one step closer to advanced applications of magnetic FePt Nanoparticles" by *Michael Berger*.
Nature, Nov 28, 2002. "Strong magnet by self-assembly" by David Sellmyer.
PhysicsWeb, Nov 27, 2002. "Magnets double up" by Belle Dume.
TRN news, Dec 11, 2002. "Microscopic mix strengthens magnet**"** by Eric Smalley.
TRN News, March 20/27, 2002. "Carving beams shrink circuits" by Chhavi Sachdev.
Physics Today, November 2001. "Physics in a new Era" by Thomas Appelquist and Donald Shapero.

PC Magazine, September 4, 2001. “Thinking out of the Box” by Carol Levin.
Chemical & Engineering News, December 18, 2000. “Chemistry highlights 2000” by Stu Borman.
Science, News of the Week, March 17, 2000. “Nanocrystals may give boost to data storage” by Robert Service.
Chemical & Engineering News, June 12, 2000. “Data storage - new materials push the limits” by Mitch Jacoby.
New York Times, C2, March 17, 2000. “IBM Achieves Advance in Memory for Computers” by John Markoff.
US News & World Report, March 27, 2000. “Big Blue Thinks Small- Minidisks get tinier” by Rachel Sobel.
San Jose Mercury News, March 2000. “A disk drive breakthrough- IBM’s magnetic nanoparticle could vastly expand storage” by Tom Quinlan.