Prashant K. Jain

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Web: http://www.nanogold.org
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PERSONAL INFORMATION

Born: Bijowa, India; Naturalized US Citizen

CURRENT POSITION

University of Illinois - Urbana Champaign, IL
Professor of Chemistry (eff. Aug 2020)
Associate Professor of Chemistry
Richard and Margaret Romano Professorial Scholar
Associate Professor of the Materials Research Lab
Associate Professor of the Beckman Institute for Advanced Science and Technology
Associate Head of Major Projects, Department of Chemistry
Affiliate Faculty Member, Department of Physics

EDUCATION

2003-07 **Georgia Institute of Technology** - Atlanta, GA
Doctor of Philosophy in Physical Chemistry; Minor in Materials Science & Engineering
GPA:4.0; Best Chemistry PhD Student Award

1999-03 **Institute of Chemical Technology (UICT)** - Mumbai, India
B. Tech with Honors in Chemical Technology
First Class with Distinction; Four-year rank 1 of 140

ACADEMIC POSITIONS HELD

2017-2018 **University of Illinois** - Urbana Champaign, IL
I. C. Gunsalus Scholar, College of Liberal Arts and Sciences

2013-2017 **University of Illinois** - Urbana Champaign, IL
Assistant Professor, Materials Research Laboratory

2011-2019 **University of Illinois** - Urbana Champaign, IL
Affiliate Faculty Member, Beckman Institute for Advanced Science and Technology

2011-2017 **University of Illinois** - Urbana Champaign, IL
Assistant Professor, Department of Chemistry

2009-2011 **Miller Fellow, University of California** - Berkeley, CA
Host: A. Paul Alivisatos, Dept. of Chemistry
Research focus: Interfacing semiconductor quantum dots and plasmonics

2008-2008 **Postdoctoral Fellow, Harvard University** - Cambridge, MA
Adviser: Adam E. Cohen, Dept. of Chemistry & Chemical Biology and of Physics
Research focus: Nanoscale magneto-optics & chiro-optics

2004-2007 **Graduate Researcher, Georgia Institute of Technology** - Atlanta, GA
Adviser: Mostafa A. El-Sayed, Director, Laser Dynamics Laboratory
Doctoral dissertation: Plasmons in assembled metal nanostructures, Defended Jan 2008

SCIENTIFIC ADVISORY ROLES

2014- **Sebacia Inc, Duluth, GA**
Scientific advisor

2017-18 **Clean Science and Technology Pvt. Ltd., Pune, India**
Scientific consultant

2014-17 **Fuel Technology Solutions Group, Ft. Lauderdale, FL**
Scientific advisor for facilitation of technology transfer

EXPERT ROLES

2017 Patent Expert Witness for US Patent on nanoparticles for photothermal therapy

2017 Patent Expert for European Patent Application on nanoparticles for photothermal therapy

LEADERSHIP AND SERVICE ON BOARDS AND PANELS

- Editorial Advisory Board Member - Journal of Physical Chemistry, American Chemical Society
- Editorial Advisory Board - Nanospectroscopy, De Gruyter
- United States Funding Agencies: AFOSR, ACS-PRF, NSF DMR MMN, NSF SSMC program, NSF CMI program, NSF Surface Chemical Catalysis Panel, W. M. Keck Foundation
- International Funding Agencies: ETH Zurich Research Commission, DFG Germany, Poland National Science Center, Lawrence Berkeley National Lab Molecular Foundry Review Panel, New Zealand Ministry of Science and Innovation, Austrian Science Fund, UIUC VCR, Heinz Foundation, Portuguese Foundation for Science and Technology, Department of Defense, DOE BES, DOE CPIMS, DOE Catalysis Science, Davidson Institute, Govt. of Hong Kong Special Administrative Unit, Excellence Initiative for the site Bourgogne Franche-Comt of France, Aix-Marseille University Excellence Initiative, Domain Science of the Netherlands Organization for Scientific Research (NWO), Science Foundation Ireland, Instituto Serrapilheira Brazil, Japan Society for the Promotion of Science, Czech Science Foundation

LEADERSHIP ROLES AT UNIVERSITY

2018- **University of Illinois** - Urbana Champaign, IL
Associate Head of Major Projects, Department of Chemistry

2013-19 **University of Illinois** - Urbana Champaign, IL
Chemical Physics PhD Program Chair

2017-18 **University of Illinois** - Urbana Champaign, IL
Physical Chemistry Area Head

Fall 2017 **University of Illinois** - Urbana Champaign, IL
Chair of Search Committee, School of Chemical Sciences Financial Analyst

2013-14 **University of Illinois** - Urbana Champaign, IL
Vice-Chair of Graduate Admissions

HONORS AND AWARDS

2019	Presidential Early Career Award in Science and Engineering (PECASE)
2019	Beilby Medal and Prize, Royal Society of Chemistry, IOM3, and SCI
2020-21	Defense Science Study Group
2019-21	Editorial Advisory Board Member for the Journal of Physical Chemistry
2018	Highly Cited Researchers, Clarivate Analytics Web of Science
2018	Fellow of the Royal Society of Chemistry
2018	Chemistry Discovery Fund Award
2018	Richard and Margaret Romano Professorial Scholar
2017	Kavli Emerging Leader in Chemistry and Lectureship, ACS
2017	Campus Distinguished Promotion Award, UIUC
2017	American Vacuum Society Prairie Chapter Early Career Award
2017-18	I. C. Gunsalus Scholar
2017	UIUC Center for Advanced Studies Beckman Fellow
2017	Selected as one of 2017 Emerging Investigators by Journal of Materials Chemistry
2016	Most Cited Researchers in ChemE as per Elsevier Scopus 2016
2016-17	Institute of Chemical Technology Alumni Association Young Achiever Award (declined)
2015	National Science Foundation CAREER Award
2015	Journal of Physical Chemistry C Lectureship Award
2015, 16, 17	3M Nontenured Faculty Award
2014	American Chemical Society Petroleum Research Fund Doctoral New Investigator Award
2014	Arnold and Mabel O. Beckman Foundation Young Investigator Award
2014	Alfred P. Sloan Research Fellowship
2013	Golden Jubilee Visiting Fellowship, Institute of Chemical Technology
2013	IChemE Energy Award, Highly Commended Technology
2013	DuPont Young Professor Award
2013	US Frontiers of Engineering, National Academy of Engineering
2013	Unilever Award for Outstanding Young Investigator - ACS Colloid and Surface Chemistry Division
2013	National Academy of Engineering Educate-to-Innovate Program Innovator
2013	Google Solve for [X] Moonshot Thinkers/Speakers
2012	MIT Technology Review TR35: Top 35 innovators under 35
2012-13	IACAT Faculty Fellowship, National Center for Supercomputing Applications
2012	Cottrell Scholars Collaborative New Faculty Workshop

2008-11 Miller Fellowship of the University of California at Berkeley

2008 Atlanta Area Chemical Physics (AACP) Prize and Lecture

2007 Gold Award for Graduate Students, Materials Research Society

2007 Georgia Tech CoS Recognition for Outstanding Chemistry Graduate Student

2006 Best Chemistry PhD Student Award, Georgia Tech

2006 ACS Physical Chemistry Outstanding Poster Award

2006 ACS Graduate Student Symposium Planning Committee Scholarship

2005 Elected to Full Membership, Sigma Xi

2003-06 University of Mumbai Sir Mangladas Nathubai Doctoral Research Abroad Fellowship

2003 Lotus Trust Doctoral Scholarship, Mumbai

2003 American Alumni Association Study-Abroad Grant Award, Mumbai

2001&02 UICT B. Tech Merit Prize

2002 Sohrab and Coomi Mistry Foundation Prize, UICT

2001 L.V. Pitre Prize, UICT

2000&01 Polymer Technology Departmental Scholarship, UICT

1996 Homi Bhabha Young Scientist Title and Gold Medal, Mumbai

TEACHING AWARDS

2011-18 UIUC List of Teachers Ranked as Excellent By Their Students (Fall 12, 15, 16; Spring 14, 15, 18; for 7 of 11 courses taught)

2015 School of Chemical Sciences Faculty Teaching Award

RESEARCH PROGRAM

Photosynthesis Driving multi-electron fuel-forming reactions by plasmonic light excitation.

Catalysis Discovering active sites and reaction pathways of catalysts by super-resolution imaging.

Nanoscience Unconventional phases and fast-ion transport in nanocrystals.

SUBMITTED PAPERS AND PREPRINTS (* indicates corresponding author)

1. S.Yu and **P. K. Jain***, The chemical potential of plasmonic excitations, **2019**, submitted.
2. S.Yu, V. Mohan, and **P. K. Jain***, Using plasmonically-generated carriers as redox equivalents, *MRS Bulletin*, **2019**, submitted.
   Invited review for themed issue on Materials for Hot-Carrier Chemistry
3. **P. K. Jain***, Phenomenological Arrhenius analyses in plasmon-enhanced catalysis, *arXiv preprint*,**2019**, arXiv:1908.05373 [physics.chem-ph].
4. V. Mohan and **P. K. Jain***, Roadmap on nano-plasmonics, *Nanotechnology*,**2019**, submitted.
   Invited contribution for Roadmap on Quantum Technology
5. A. J. Wilson and **P. K. Jain***, Mechanistic understanding of plasmon-enhanced electrochemistry, **2019**, submitted.

INDEPENDENT PUBLICATIONS (21,100 citations, h = 41, * indicates corresponding author)

1. **P. K. Jain***,Taking the heat off of plasmonic chemistry, *Journal of Physical Chemistry C*, **2019**, 123 (40), 2434724351.
   Invited Viewpoint
   Most read article of journal as per Oct 2019 list
   Posted on arXiv as arXiv: 1908.09415 [physics.chem-ph]

2. S. Yu and **P. K. Jain***, Selective branching of plasmonic photosynthesis into hydrocarbon production and hydrogen generation, *ACS Energy Letters*, **2019**, 4 (9), 2295-2300.

3. J. Gong and **P. K. Jain***, Room-temperature superionic-phase nanocrystals synthesized with a twinned lattice, *Nature Communications*, **2019**, 10, 3285.
   Editors' highlight on recent research on Inorganic and Physical Chemistry

4. X. Liu, Y. Zhang, T. Chen, **P. K. Jain**, and W. Xu*, Revealing the thermodynamic properties of elementary chemical reactions at the single-molecule level, *Journal of Physical Chemistry B*, **2019**, 123 (29), 6253-6259.

5. L. Huang, J. Zou, J.-Y. Ye, Z.-Y. Zhou, Z. Lin, X. Kang*, **P. K. Jain***, and S. Chen, Synergy between plasmonic and electrocatalytic activation of methanol oxidation on palladium-silver alloy nanotubes, *Angewandte Chemie International Edition*, **2019**, 58 (26), 8794-8798.

6. K. Cho, J. Heo, Y.-M. Sung, and **P. K. Jain***, One-dimensional cuprous selenide nanostructures with switchable plasmonic and super-ionic attributes, *Angewandte Chemie International Edition*, **2019**, 58 (25), 8410-8415.

7. S. Yu and **P. K. Jain***, Plasmonic photosynthesis of C_1-C_3 hydrocarbons from carbon dioxide assisted by an ionic liquid, *Nature Communications*, **2019**, 10, 2022.
   UIUC News Bureau press release: Artificial photosynthesis transforms carbon dioxide into liquefiable fuels
   Editors' highlight on recent research on Energy Materials
   Featured on EurekaAlert, Nanotechnology Now, Times of India, Express UK, Phys.Org, ScienceDaily, and other science news media

8. J. Heo, D. Dumett Torres, P. Banerjee, and **P. K. Jain***, In-situ electron microscopy mapping of an order-disorder transition in a superionic conductor, *Nature Communications*, **2019**, 10, 1505.

9. J. Heo, D. Dumett Torres and **P. K. Jain***, Unconventional long-range cation ordering in copper selenide nanocrystals, *Chemistry of Materials*, **2019**, 31 (1), 68-72.
   Structure deposited in Cambridge Crystallographic Data Center

10. G. Kumari, X. Zhang, D. Devasia, J. Heo, and **P. K. Jain***, Watching visible light-driven CO_2 reduction on a plasmonic nanoparticle catalyst, *ACS Nano*, **2018**, 12 (8), 8330-8340.
    Most read article of the journal as per Sep 2018 list

11. P. Banerjee and **P. K. Jain***, Mechanism of sulfidation of small ZnO nanoparticles, *RSC Advances*, **2018**, 8 (60), 34476-34482.

12. X. Zhang, G. Kumari, J. Heo, and **P. K. Jain***, In-situ formation of catalytically active graphene in ethylene photo-epoxidation, *Nature Communications*, **2018**, 9, 3056.
    Editors' highlight on recent research on Inorganic and Physical Chemistry

13. F. Shaik, I. Peer, **P. K. Jain**, and L. Amirav, Plasmon-enhanced multi-carrier photocatalysis, *Nano Letters*, **2018**, 18(7), 4370-4376.
    Most read article of the journal as per Jul 2018 and Aug 2018 lists

14. **P. K. Jain***, Physical models for energy-converting nanofluids, *Physics Today*, **2018**, 71(8), 10-11.

15. P. Banerjee and **P. K. Jain***, Lithiation of copper selenide nanocrystals, *Angewandte Chemie International Edition*, **2018**, 57 (30), 9315-9319.
Also featured in Hot Topic: Batteries and Supercapacitors

16. Y. Kim, J. G. Smith, and **P. K. Jain***, Harvesting multiple electron-hole pairs generated via plasmonic excitation of Au nanoparticles, *Nature Chemistry*, **2018**, 10 (7), 763-769.
UIUC News Bureau press release: Team achieves two-electron chemical reactions using light energy, gold
Highlighted on NSF Science360 Now: 2 electrons are better than 1
Featured in PhysOrg, Science Daily, Eureka Alert, and several other science media outlets

17. A. J. Wilson and **P. K. Jain***, Structural dynamics of the oxygen evolving complex of photosystem II in water-splitting action, *Journal of the American Chemical Society*, **2018**, 140 (17), 5853-5859.

18. H. A. Nguyen (co-first), P. Banerjee (co-first), D. Nguyen, J. W. Lyding, M. Gruebele*, and **P. K. Jain***, STM imaging of localized surface plasmons on individual gold nanoislands, *Journal of Physical Chemistry Letters*, **2018**, 9 (8), 1970-1976.

19. S. Yu, A. J. Wilson, J. Heo, and **P. K. Jain***, Plasmonic control of multi-electron transfer and C-C coupling in visible-light-driven CO_2 reduction on Au nanoparticles, *Nano Letters*, 18 (4), **2018**, 21892194.
Featured on Front Cover
Most read article of journal as per Mar 2018 and May 2018 lists
Most read article of journal in 2018-19
Thomson Reuters Highly Cited (top 1%)
Featured in Chemistry World article 'Forcing reactions with plasmons'

20. D. Dumett Torres and **P. K. Jain***, Strain stabilization of superionicity in copper and lithium selenides, *Journal of Physical Chemistry Letters*, **2018**, 9 (6), 1200-1205.

21. S. Yu, A. J. Wilson, G. Kumari, X. Zhang and **P. K. Jain***, Opportunities and challenges of solar-energy-driven carbon dioxide to fuel conversion with plasmonic catalysts, *ACS Energy Letters*, **2017**, 2 (9), 2058-2070.
Invited Review
Most read article of journal as per Sep 2017 list
Featured in Virtual Issue on Plasmons for Energy Conversion, *ACS Energy Letters*, 3, **2018**, 14671469.

22. V. Mohan and **P. K. Jain***, Spectral heterogeneity of hybrid lead halide perovskites demystified by spatially-resolved emission, *Journal of Physical Chemistry C*, **2017**, 121 (35), 19392-19400.

23. D. Dumett, P. Banerjee, S. Pamidighantam, and **P. K. Jain***, A non-natural wurtzite polymorph of HgSe: A potential 3D topological insulator, *Chemistry of Materials*, **2017**, 29 (15), 6356-6366.

24. Y. Kim, A. J. Wilson, and **P. K. Jain***, The nature of plasmonically assisted hot electron transfer in a donor-bridge-acceptor complex, *ACS Catalysis*, **2017**, 7 (7), 4360-4365.

25. J. G. Smith, X. Zhang, and **P. K. Jain***, Galvanic reactions at the single-nanoparticle level: Tuning between mechanistic extremes, *Journal of Materials Chemistry A*, **2017**, 5 (23), 11940-11948.
Article Invited for 2017 Emerging Investigators Themed Issue

26. S. L. White (co-first), P. Banerjee (co-first), and **P. K. Jain***, Liquid-like cationic sub-lattice in copper selenide clusters, *Nature Communications*, **2017**, 8, 14514.
UIUC News Bureau press release: Tiny nanoclusters could solve big problems for lithium-ion batteries
Smithsonian Magazine story: Charging ahead: the future of batteries
R&D Magazine highlight: Nanoclusters help improve lithium-ion batteries
AzoNano story: Nanoclusters and the future of lithium batteries
CEMag highlight: Layered graphene, imaging nematodes, preventing battery explosions
Also featured on PhysOrg, EurekAlert, and other science media outlets

27. S. L. White, P. Banerjee, I. Chakraborty, and **P. K. Jain***, Ion exchange transformation of magic-sized nanoclusters, *Chemistry of Materials*, **2016**, 28 (22), 8391-8398.
ACS Author Choice Article

28. G. K. Joshi, S. L. White, M. Johnson, R. Sardar*, and P. K. Jain*, Ultrashort, angstrom-scale decay of surface enhanced Raman scattering at hot spots, *Journal of Physical Chemistry C*, **2016**, 120 (43), 24973-24981.

29. J. G. Smith and **P. K. Jain***, Kinetics of self-assembled monolayer formation on individual nanoparticles, *Physical Chemistry Chemical Physics*, **2016**, 18 (34), 23990-23997.

30. J. G. Smith (co-first), I. Chakraborty (co-first), and **P. K. Jain***, In situ single nanoparticle spectroscopy study of bimetallic nanostructure formation, *Angewandte Chemie International Edition*, **2016**, 55 (34), 9979-9983.
Designated by reviewers in the top 10 % of manuscripts

31. K.-K. Liu, S. Tadepalli, G. Kumari, P. Banerjee, L. Tian, **P. K. Jain*** and S. Singamaneni*, Polarization-dependent surface enhanced Raman scattering activity of anisotropic plasmonic nanorattles, *Journal of Physical Chemistry C*, **2016**, 120 (30), 16899-16906.

32. J. G. Smith and **P. K. Jain***, The ligand shell as an energy barrier in surface reactions on transition metal nanoparticles, *Journal of the American Chemical Society*, 138 (21), **2016**, 6765-6773.
ACS Author Choice Article

33. Y. Kim, D. Dumett, and **P. K. Jain***, Activation energies of plasmonic catalysts, *Nano Letters*, **2016**, 16 (5), , 3399-3407.
ACS Author Choice Article

34. X. Li, C. Xiao, T. W. Goh, A. L. D. Stanton, Y. Pei, P. K. Jain, and W. Huang*, Synthesis of monodisperse palladium nanoclusters using metal-organic frameworks as sacrificial templates, *ChemNanoMat*, **2016**, 2 (8), 810-815.
VIP Article Highlighted by ChemViews: Palladium clusters from etching

35. A. Fang (co-first), S. L. White (co-first), R. A. Masitas, F. P. Zamborini*, and **P. K. Jain***, One-to-one correlation between structure and optical response in a heterogeneous distribution of plasmonic constructs, *Journal of Physical Chemistry C*, **2015**, 119 (42), 24086-24094.

36. J. G. Smith, J. A. Faucheaux, and **P. K. Jain***, Plasmon resonances for solar energy harvesting: A mechanistic outlook, *Nano Today*, **2015**, 10 (1), 67-80.
Editor's Choice Article, 2015
Editor's Choice Article and Editor's Highlights, 2016

37. A. L. Routzahn and **P. K. Jain***, Luminescence blinking of a reacting quantum dot, *Nano Letters*, **2015**, 15 (4), 2504-2509.
ACS Author Choice Article

38. A. Fang (co-first), S. L. White (co-first), **P. K. Jain*** and F. P. Zamborini*, Regio-selective plasmonic coupling in metamolecular analogs of benzene derivatives, *Nano Letters*, **2015**, 15 (1), 542-548.

39. M. Behl and **P. K. Jain***, Catalytic activation of a solid oxide in electronic contact with Au nanoparticles, *Angewandte Chemie International Edition*, **2015**, 54 (3), 992-997.

40. **P. K. Jain***, Plasmon-in-a-box: On the nature of few-carrier collective resonances, *Journal of Physical Chemistry Letters*, **2014**, 5 (18), 3112-3119.

41. J. A. Faucheaux, A. L. D. Stanton, and **P. K. Jain***, Plasmon resonances of semiconductor nanocrystals: Physical principles and new opportunities, *Journal of Physical Chemistry Letters*, **2014**, 5 (6), 976-985.
Featured on Journal Cover
Featured in JPC Letters Editorial
ACS Editor's Choice Article

Top 5 Most-read articles of journal as per Apr 2014 list
Featured by ACS in YouTube video
Thomson Reuters Highly Cited (top 1%)

42. J. G. Smith, Q. Yang, and **P. K. Jain***, Identification of a critical intermediate in galvanic exchange reactions by single-nanoparticle resolved kinetics, *Angewandte Chemie International Edition*, **2014**, 53 (11), 2867-2872.

43. J. A. Faucheaux, J. Fu, and **P. K. Jain***, Unified theoretical framework for realizing diverse regimes of strong coupling between plasmons and electronic transitions, *Journal of Physical Chemistry C*, **2014**, 118 (15), 2710-2717.

44. A. L. Routzahn and **P. K. Jain***, Single-nanocrystal reaction trajectories reveal sharp co-operative transitions, *Nano Letters*, **2014**, 14 (2), 987-992.

45. **P. K. Jain*** Gold Nanoparticles in Physics, Chemistry, and Biology: Book Review, *Angewandte Chemie International Edition*, **2014**, 53(5), 1197.

46. S. White, J. G. Smith, M. Behl, and **P. K. Jain***, Co-operativity in a nanocrystalline solid-state transformation, *Nature Communications*, **2013**, 4, 2933.
UIUC News Bureau press release: Atoms in a nanocrystal cooperate, much like in biomolecules
Featured on PhysOrg, Laser Focus World, and other science media outlets

47. **P. K. Jain***, K. Manthiram, J. Engel, S. L. White, J. A. Faucheaux, and A. Paul Alivisatos*, Doped semiconductor nanocrystals as plasmonic probes of redox chemistry, *Angewandte Chemie International Edition*, **2013**, 52 (51), 13671-13675.

48. J. A. Faucheaux and **P. K. Jain***, Plasmons in photocharged ZnO nanocrystals revealing dynamics of charge carriers, *Journal of Physical Chemistry Letters*, **2013**, 4 (18), 3024-3030.

49. C. Deeb, X. Zhou, J. Plain, G. Wiederrecht, R. Bachelot*, M. J. Russell, and **P. K. Jain***, Size-dependence of the plasmonic near-field measured via single-nanoparticle photochemical imaging, *Journal of Physical Chemistry C*, **2013**, 117 (20), 10669-10676.

50. J.B. Rivest and **P. K. Jain***, Cation exchange on the nanoscale: An emerging technique for new material synthesis, device fabrication, and chemical sensing, *Chemical Society Reviews*, **2013**, 42 (1), 89-96.
Top 10 Most Read Article as per Sep 2012 list
Thomson Reuters Highly Cited (top 1%)

51. M. Behl, J. Yeom, Q. Lineberry, **P. K. Jain***, and M. Shannon, A regenerable oxide-based hydrogen sulfide adsorbent with nanofibrous morphology, *Nature Nanotechnology*, **2012**, 7 (12), 810-815.
UIUC News Bureau press release: Nanofibers clean sulfur from fuel
Featured in various other science news including Science Daily, PhysOrg, The Engineer, R&D Magazine, New Energy and Fuel, and others

52. A. Routzahn (co-first), S. L. White(co-first), L.K. Fong, and **P. K. Jain***, Plasmonics with doped quantum dots, invited review in special issue on Nanochemistry, *Israel Journal of Chemistry*, **2012**, 52 (11-12), 983-991.
#1 Most-accessed paper of journal in Feb 2013

PRIOR TO INDEPENDENT CAREER

53. M. Polking, **P. K. Jain**, Y. Bekenstein, U. Banin, O. Millo*, R. Ramesh*, and A. Paul Alivisatos*, Controlling localized surface plasmon resonances in GeTe nanoparticles using an amorphous-to-crystalline phase transition, *Physical Review Letters*, **2013**, 111 (3), 037401.

54. **P. K. Jain**, D. Ghosh, R. Baer, E. Rabani*, and A. Paul Alivisatos*, Near-field manipulation of spectroscopic selection rules on the nanoscale, *Proceedings of the National Academy of Sciences*, **2012**, 109 (21), 8016-8019.
Nature Nanotechnology commentary: Rewriting selection rules, doi:10.1038/nnano.2012.104

55. **P. K. Jain**, B. J. Beberwyck, L.-K. Fong, M. J. Polking, and A. Paul Alivisatos*, Highly luminescent nanocrystals from removal of impurity atoms residual from ion exchange synthesis, *Angewandte Chemie International Edition*, **2012**, 51 (10), 2387-2390 and corrigendum: **2012**, 51 (29), 7069.
LBNL PRESS RELEASE: BRIGHT LIGHTS OF PURITY: BERKELEY LAB RESEARCHER DISCOVER WHY PURE QUANTUM DOTS AND NANORODS SHINE BRIGHTER
IEEE SPECTRUM FEATURE: TAKE NANOCRYSTALS, ADD BOILING WATER, AND GET A 400-FOLD INCREASE IN LUMINESCENCE
ALSO FEATURED ON SCIENCE DAILY, PHYSORG, AND SEVERAL OTHER SCIENCE MEDIA NEWS

56. W. Xu, **P. K. Jain**, B. J. Beberwyck, and A. Paul Alivisatos*, Probing redox photocatalyis of trapped electrons and holes on single Sb-doped titania nanorod surfaces, *Journal of the American Chemical Society*, **2012**, 134 (9), 3946-3949.

57. J. B. Rivest, L.-K. Fong, **P. K. Jain**, M. F. Toney, and A. Paul Alivisatos*, Size dependence of a temperature-induced solid-solid phase transition in copper(I) sulfide,*Journal of Physical Chemistry Letters*, **2011**, 2 (19), 2402-2406.

58. C. L. Choi, H. Li, A.C.K. Olson, **P. K. Jain**, S. Sivasankar*, and A. P. Alivisatos*, Spatially indirect emission in a luminescent nanocrystal molecule, *Nano Letters*, **2011**, 11 (6), 2358-2362.
LBNL PRESS RELEASE: BREAKING KASHA'S RULE: BERKELEY LAB SCIENTISTS FIND UNIQUE LUMINESCENCE IN TETRAPOD NANOCRYSTALS
FEATURED ON SCIENCE DAILY, EUREKAALERT, PHYSORG, AND OTHER SCIENCE MEDIA NEWS

59. J. M. Luther (co-first), **P. K. Jain**(co-first), T. Ewers, and A. P. Alivisatos*, Localized surface plasmon resonances arising from free carriers in doped semiconductor nanocrystals, *Nature Materials*, **2011**, 10 (5), 361-366.
LBNL PRESS RELEASE: BERKELEY LAB RESEARCHERS FIND PLASMONIC RESONANCES IN SEMICONDUCTOR NANOCRYSTALS
DAILY CALIFORNIA ARTICLE: SCIENTISTS MAKE ADVANCEMENTS IN THE FIELD OF QUANTUM DOTS
FEATURED IN EE TIMES: QUANTUM DOTS ENABLE PLASMONIC SEMIS
FEATURED ON SCIENCE DAILY, PHYSORG AND 20+ SCIENCE NEWS WEBSITES
FEATURED IN SPIE NEWSROOM ARTICLE: CATCHING INVISIBLE LIGHT
THOMSON REUTERS HIGHLY CITED (TOP 1%)

60. **P. K. Jain**(co-first), L. Amirav (co-first), S. Aloni, and A. P. Alivisatos*, Nanoheterostructure cation exchange: Anionic framework preservation, *Journal of the American Chemical Society*, **2010**, 132 (29), 9997-9999.

61. S Sheikholeslami (co-first), Y.-W. Jun (co-first), **P. K. Jain** (co-first), and A. P. Alivisatos*, Coupling of optical resonances in a compositionally asymmetric plasmonic nanoparticle dimer, *Nano Letters*, **2010**, 10 (7), 2655-2660.
#5 MOST DOWNLOADED NANO LETTER AS PER JUL 2010 LIST
THOMSON REUTERS HIGHLY CITED (TOP 1%)

62. N. Hooshmand, **P. K. Jain*** and M. A. El-Sayed*, Plasmonic tunability of spheroidal metal nanoshells is higher than spherical ones: The effect of aspect ratio studied by discrete dipole approximation, *Journal of Physical Chemistry Letters*, **2011**, 2 (5), 374-378.

63. C. Deeb, X. Zhou, D. Gerard, A. Bouhelier, **P. K. Jain**, J. Plain, O. Soppera, P. Royer, and R. Bachelot*, Off-resonant optical excitation of gold nanorods: Nanoscale imprint of polarization surface charge distribution, *Journal of Physical Chemistry Letters*, **2011**, 2 (1) 7-11.

64. C. Trappetti, L. Gualdi, L. Di Meola, **P. K. Jain**, C. C. Korir, P. Edmonds, F. Iannelli, S. Ricci, G. Pozzi and M. R. Oggioni*, The impact of the competence quorum sensing system on Streptococcus pneumoniae biofilms varies depending on the experimental model, *BMC Microbiology*, **2011**, 11 (75), published online 14 Apr.
DESIGNATED AS HIGHLY ACCESSED BY THE JOURNAL

65. C. Deeb, R. Bachelot*, J. Plain, A.-L. Baudrion, S. Jradi, A. Bouhelier, O. Soppera, **P. K. Jain**, L. Huang, C. Ecoffet, L. Balan, and P. Royer, Quantitative analysis of localized surface plasmons based on molecular probing, *ACS Nano*, **2010**, 4 (8), 4579-4586.

66. **P. K. Jain*** and M. A. El-Sayed*, Plasmonic coupling in noble metal nanostructures, *Chemical Physics Letters*, **2010**, 487 (4-6), 153-164.
Frontier Article and Journal Cover
#1 Most cited Chemical Physics Letter of 2010
#4 Most cited Chemical Physics Letter of 2009-2013
Thomson Reuters Highly Cited (top 1%)

67. **P. K. Jain**, Y. Xiao, R. Walsworth, and A. E. Cohen*, Surface plasmon resonance-enhanced magneto-optics (SuPREMO): Enhanced inter-band Faraday rotation in gold-coated iron oxide nanocrystals, *Nano Letters*, **2009**, 9 (4), 1644-1650.
Top 20 Most accessed as per Nano Letters list in April 2009

68. **P. K. Jain** and M. A. El-Sayed*, Noble metal nanoparticle pairs: Effect of medium for enhanced nanosensing, *Nano Letters*, **2008**, 8 (12), 4347-4352.

69. **P. K. Jain** and M. A. El-Sayed*, Surface plasmon coupling and its universal size scaling in nanostructures of complex geometry: Elongated particle pairs and nanosphere trimers, *Journal of Physical Chemistry C*, **2008**, 112 (13), 4954-4960.

70. **P. K. Jain**, X. Huang, I. H. El-Sayed, and M. A. El-Sayed*, Noble metals at the nanoscale: Optical and photothermal properties and applications in imaging, sensing, biology, and medicine, *Accounts of Chemical Research* **2008**, 41 (12), 1578-1586.
Invited review, Special Issue on Nanoscience
#2 Most cited accounts in the last 3 years as per Feb 2011 list
Thomson Reuters Highly Cited (top 1%)

71. X. Huang, **P. K. Jain**, I. H. El-Sayed, and M. A. El-Sayed*, Plasmonic photothermal therapy (PPTT) using gold nanoparticles, *Lasers in Medical Science,* **2008**, 23 (3), 217-228.
Invited review
#1 Most cited of 2008 articles of the journal
Thomson Reuters Highly Cited (top 1%)

72. **P. K. Jain** and M. A. El-Sayed*, Surface plasmon resonance sensitivity of metal nanostructures: Physical basis and universal scaling in metal nanoshells, *Journal of Physical Chemistry C*, **2007**, 111 (47), 17451-17454.
Top 20 Most accessed JPCC paper of 2007 4th quarter

73. W. Huang, W. Qian, **P. K. Jain** and M. A. El-Sayed*, The effect of plasmon field on the coherent lattice phonon oscillation in electron-beam nanofabricated gold particle pairs, *Nano Letters*, **2007**, 7 (10), 3227-3234.

74. **P. K. Jain** and M. A. El-Sayed*, Universal scaling of plasmon coupling in metal nanostructures: Extension from particle pairs to nanoshells, *Nano Letters*, **2007**, 7 (9), 2854-2858.

75. **P. K. Jain**, W. Huang, and M. A. El-Sayed*, On the universal scaling behavior of the distance decay of plasmon coupling in metal nanoparticle pairs: A plasmon ruler equation, *Nano Letters*, **2007**, 7 (7), 2080-2088.
#12 Hot paper of Nano Letters as per May 2008 list
Top 20 Most-cited Nano Letters of 2008
Thomson Reuters Highly Cited (top 1%)

76. X. Huang, **P. K. Jain**, I. H. El-Sayed, and M. A. El-Sayed*, Gold nanoparticles and nanorods in medicine: From cancer diagnostics to photothermal therapy, *Nanomedicine*, **2007**, 2 (5), 681-693.
Invited review
#1 Most cited of all-time articles of the journal as per Oct 09 list
Thomson Reuters Highly Cited (top 1%)

77. **P. K. Jain**, X. Huang, I. H. El-Sayed, and M. A. El-Sayed*, Review of some surface plasmon resonance-enhanced properties of noble metal nanoparticles and their applications to biosystems, *Plasmonics*, **2007**, 2 (3), 107-118.
Invited review for Special Issue on Advances in Metal-Molecular interactions
#1 Most cited of all-time articles of journal as per Oct 09 list
Thomson Reuters Highly Cited (top 1%)

78. **P. K. Jain**, I. H. El-Sayed, and M. A. El-Sayed*, Au nanoparticles target cancer, *Nano Today*, **2007**, 2 (1), 18-29.
Invited review
#1 Most cited of all-time articles of journal as per Oct 09 list
Thomson Reuters Highly Cited (top 1%)

79. **P. K. Jain**, S. Eustis, and M. A. El-Sayed*, Plasmon coupling in gold nanorod assemblies: Optical absorption, discrete dipole approximation simulation and exciton coupling model, *Journal of Physical Chemistry B*, **2006**, 110 (37), 18243-18253.
#12 Most cited paper of JPCB in 2006
#2 Hot papers of JPCB as per Mar 2008 list
Thomson Reuters Highly Cited (top 1%)

80. **P. K. Jain**, K. S. Lee, I. H. El-Sayed, and M. A. El-Sayed*, Calculated absorption and scattering properties of gold nanoparticles of different shape and composition: Applications in biological imaging and biomedicine, *Journal of Physical Chemistry B*, **2006**, 110 (14), 7238-7248.
#1 in citations of 4000 JPCB papers in 2006
#1 Hot paper in JPCB list of March 2008
Top 10 most-accessed article for 2006 and for 2007
The most read JPCB article as per 2012 list
Thomson Reuters Highly Cited (top 1%)

81. X. Huang, **P. K. Jain**, I. H. El-Sayed, and M. A. El-Sayed*, Determination of the minimum temperature required for selective photothermal destruction of cancer cells with the use of immunotargeted gold nanoparticles, *Photochemistry and Photobiology*, **2006**, 82 (2), 412-417.
#2 Most cited article of 300 articles of journal in 2006

82. **P. K. Jain**, W. Qian, and M. A. El-Sayed*, Ultrafast cooling of photoexcited electrons in gold nanoparticle-thiolated DNA conjugates involves the dissociation of the gold-thiol bond, *Journal of the American Chemical Society*, **2006**, 128 (7), 2426-2433.
Awarded Outstanding Poster Award by PHYS division, ACS Fall 2006 National Meeting

83. **P. K. Jain**, W. Qian, and M. A. El-Sayed*, Ultrafast electron relaxation dynamics in coupled metal nanoparticles in aggregates, *Journal of Physical Chemistry B*, **2006**, 110 (1), 136-142.

84. **P. K. Jain***, A DFT-based study of the low-energy electronic structures and properties of small gold clusters, *Structural Chemistry*, **2005**, 16 (4), 421-426.
#3 Most cited of articles published by journal in 2005

PUBLISHED RESEARCH SOFTWARE TOOLS

P. K. Jain, N. Sobh, J. Smith, A. N. Sobh, S. White, J. Faucheaux, and J. Feser (2015)
nanoDDSCAT, https://nanohub.org/resources/dda, DOI: 10.4231/D3QN5ZC6H

A. N. Sobh, S. White, J. Smith, N. Sobh, and **P. K. Jain** (2015)
nanoDDSCAT+, https://nanohub.org/resources/ddaplus, DOI:10.4231/D32V2CB5K.

PATENTS

Regenerable oxide-based adsorbent, US Patent No. 9,248,428, Issued Feb 2, 2016, **P. K. Jain**, M. Behl, M. A. Shannon, J. Yeom.

Process for making a regenerable oxide-based adsorbent, US Patent No. 9,561,488, Issued Feb 7, 2017, **P. K. Jain**, M. Behl, M. A. Shannon, J. Yeom.

BOOK CHAPTERS

P. K. Jain* and C. Deeb, Near-fields in assembled plasmonic nanostructures, In *Handbook of Molecular Plasmonics*, ISBN: 9789814303200, Fabio Della Sala and Stefania D'Agostino, eds. Pan Stanford Publishing, **2013**, 261-294.

NEWS AND VIEWS

P. K. Jain*, Shape-induced optical activity of chiral nanocrystals: Spotlight Summary, *Optical Society of America*, May **2016**.

DOCTORAL DISSERTATIONS SUPERVISED

Daniel Dumett Torres, PhD in Chemistry, University of Illinois - Urbana Champaign, Defended Sep 2019
Title: Computational electronic structure studies of novel condensed matter phases

Progna Banerjee, PhD in Physics, University of Illinois - Urbana Champaign, Defended Apr 2018
Title: An exploration of the emergent properties and phase transition behavior in engineered semiconducting nanocrystals prepared by cation exchange transformations

Jeremy Smith, PhD in Chemistry, University of Illinois - Urbana Champaign, Defended Jun 2016
Title: Revealing hidden dynamics via single-nanoparticle studies

Aaron Routzahn, PhD in Chemistry, University of Illinois - Urbana Champaign, Defended May 2016
Title: Single nanocrystal microscopy and spectroscopy unveils hidden mechanistic information in cation exchange

Sarah White, PhD in Chemistry, University of Illinois - Urbana Champaign, Defended Mar 2016
Title: Transformations in inorganic nanomaterials: Role of defects, surfaces, and size

Mayank Behl, PhD in ChBE, University of Illinois - Urbana Champaign, Defended Feb 2014
Title: Reactive chemistry and catalysis by doped metal-oxide nanostructures in environment-related applications

SYMPOSIA CHAIRED

Plasmonic Nanomaterials: From Physical Chemistry Fundamentals to Societal Impact, Apr 5-6 2017, Spring 2017 ACS National Meeting, San Francisco, CA, Co-Organizer with Catherine Murphy

nanoBIO node Workshop on Light/Matter Interactions at the nanoBIO interface, Nov 28-29, 2016, UIUC, Urbana-Champaign, IL Lead Organizer with Nahil Sobh, Alexsei Aksimentiev, Progna Banerjee, Chen-Yu Li, Abby Sobh, and Bara Saadah.

Physical Principles in Functional Nanoscience: Symposium in Honor of Mostafa A. El-Sayed, Mar 13-17, 2016, Spring 2016 ACS National Meeting, San Diego, CA, Lead Organizer with Stephan Link and Christy Landes

nanoBIO node Workshop on Plasmonics and Its Applications, Mar 21-22, 2016, University of Colorado at Boulder, Boulder, CO Co-Organizer with Sayantani Ghosh, Nahil Sobh, and Ivan Smalyukh

Functional Plasmonics, Nov 27 - Dec 2, 2016, Fall 2016 MRS National Meeting, Boston MA, Co-organizer with Laura Na Liu (lead), Yuebing Zheng, and Yongmin Liu

MEDIA COVERAGE AND HIGHLIGHTS

- Scientists create photosynthesis-inspired fuel from CO2 and water: Express UK article
- Scientists have copied plants and turned CO2 into fuel: Sustainability Times article
- Artificial photosynthesis could clean up polluted air and produce fuel (The Week Magazine article)
- New artificial photosynthesis breakthrough uses gold to turn CO_2 into liquid fuel (Science Alert article)
- Artificial photosynthesis may alleviate climate change by transforming greenhouse gas carbon dioxide into liquid fuel(Techtimes article)
- Artificial photosynthesis transforms carbon dioxide into liquefiable fuels (Illinois News Bureau press release)
- Forcing reactions with plasmons (RSC Chemistry World Feature Article)
- Nine Illinois researchers rank among worlds most influential (UIUC News Bureau)
- Prashant K. Jain selected as a member of the 2020-2021 Defense Science Study Group (UIUC Department of Chemistry News article)
- First round of Chemistry Discovery Fund launches innovative projects by Burke, Jain, and Mitchell (UIUC Department of Chemistry news article)
- Carbon-recycling system (Science Daily article on our plasmonic phototocatalysis work)
- 2 electrons are better than 1 (Highlight of our multi-electron photocatalysis on NSF Science360 Now)
- Team achieves two-electron chemical reactions using light energy, gold (Illinois News Bureau highlights our work multi-electron photocatalysis)
- Prashant interviewed about lithium ion batteries and solid electrolytes by *Brains On* American Public Radio podcast.
- Superionic nanoclusters highlighted in cover story in India's Outlook Magazine (Storing the Change)
- Prashant Jain shines a light on achieving goals (Article on ACS Show Daily)
- Artificial photosynthesis, materials with unprecedented properties (Highlight on Kavli lectures at Fall 2017 ACS National Meeting)
- Chemistry World article quotes Prashant on recent plasmonic catalysis advance (Article: Plasmonic catalyst makes light work of carbon monoxide)
- Prashant interviewed about nanocrystals in future optical computing (Featured in La Recherche, France's monthly science magazine)
- Charging ahead: the future of batteries (Smithsonian Magazine)
- Layered graphene, imaging nematodes, preventing battery explosions (CEMag)
- Nanoclusters and the future of lithium batteries (AzoNano)
- Nanoclusters help improve lithium-ion batteries (R&D Magazine)

- Tiny nanoclusters could solve big problems for lithium-ion batteries (UIUC News Bureau)
- Illinois faculty among most highly cited worldwide (Engineering at Illinois News)
- Nanocrystal atoms cooperate like biomolecules, making better photonic devices possible (Laser Focus World article)
- Three faculty members awarded 2014 Sloan Fellowships (UIUC News Bureau)
- Perspective on quantum dot plasmons featured on cover of JPC Letters, featured in editorial and selected as ACS Editor's Choice Article
- Top Cited Paper Award from Elsevier: top 5 most-cited paper from 2009-2013 in Chemical Physics Letters
- Atoms in a nanocrystal cooperate, much like in biomolecules (UIUC News Bureau)
- Gas clean-up technology triumphs at global IChemE Awards (Sulfur cleanup chemistry highly commended as Energy award runner up)
- The Energy Award: Nanosponge soaks up sulphur (tce magazine summary of finalists)
- DuPont Celebrates Scientific Innovation by Recognizing Young Professors (Reuters article)
- Among select American innovators interviewed for National Academy of Engineering's "Educate to innovate program": contribution to become part of NAE workshop in Oct 2013
- Interviewed about quantum dots and nanoscience by Discovery Channel's Brave New World series
- Improved sulfur removal from petroleum-based fuels, Tech Beat article in Tribology and Lubrication Technology Magazine
- Nanofibers work featured by NSF and nano.gov
- Nanofibers clean sulfur from fuel, UIUC News Bureau + Science Daily, PhysOrg, The Engineer, R&D Magazine, New Energy and Fuel, and others
- Metal oxide fibers scrub sulphur from petrol fuels, theengineer.co.uk science news
- Big Little Matter: Two Indian scientists on controlling particles and creating possibilities
- Two Illinois chemists named top young innovators, UIUC News Bureau
- Five of South Asian origin amongst top 35 innovators under 35
- IACAT Fellowships support diverse collaborative projects, UIUC SCS News
- Rewriting selection rules, Nature Nanotechnology commentary
- Berkeley Lab Researcher Discover Why Pure Quantum Dots and Nanorods Shine Brighter (LBNL press release)
- Scientists make advancements in the field of quantum dots (Daily Cal article)
- Breaking Kasha's Rule: Berkeley Lab Scientists Find Unique Luminescence in Tetrapod Nanocrystals (LBNL press release)
- Berkeley Lab researchers find plasmonic resonances in semiconductor nanocrystals (LBNL press release)
- Quantum dots enable plasmonic semis (EE Times feature)
- Feature on Miller Fellow Prashant Jain (Miller Newsletter)
- Frontier Article and Cover of Chemical Physics Letters (2010 Mar issue) on Plasmonic Coupling
- #1 most cited papers of all time in Nano Today
- #1 most cited papers of all time in Nanomedicine
- #1 most cited papers of all time in Plasmonics

CONTRIBUTED TALKS

- **Key intermediates of carbon dioxide reduction on silver from vibrational nanospectroscopy**, Mini-symposium: Multiple Potential Energy Surfaces, International Symposium on Molecular Spectroscopy, Urbana, IL, Jun 2017.
- **Imaging carbon dioxide reduction on single nanoparticles**, Session on Applications of Microspectroscopy for Materials Characterization, Pittcon 2017, Chicago, IL, Mar 2017.

INVITED/AWARD TALKS

1. **Plasmonic photosynthesis**, Plasmonics and Solar Energy Conversion (I04), 236th ECS National Meeting, Atlanta, GA, Oct 2019.
2. **Unusual catalog of hydrocarbons captured in plasmon-catalyzed chemistry**, Symposium on Getting to the Bottom: Optical & Electron Imaging of Reactive Chemical Systems, 258th ACS National Meeting, San Diego, CA, Aug 2019.
3. **Harvesting plasmons for the formation of energy-rich bonds**, Research seminar, University of Hong Kong, Hong Kong, Aug 2019.
4. **Plasmonically-powered energy storage in carbon-carbon bonds**, Gordon Research Conference on Plasmonically Powered Processes, Hong Kong, Jul 2019.
5. **Label-free single-molecule-imaging of a catalytic reaction**, Plenary Talk, 4th International Conference on Enhanced Spectroscopies, London, Ontario, Canada, Jun 2019.
6. **Plasmon excitation-driven reduction and coupling of carbon dioxide molecules**, Symposium on Renewable Fuels via Artificial Photosynthesis or Heterocatalysis (I03), 235th ECS National Meeting, Dallas, TX, May 2019.
7. **Multi-electron harvesting and catalysis using plasmonic nanoparticles: A mechanistic understanding**, Symposium on Light Energy Conversion (B07), 235th ECS National Meeting, Dallas, TX, May 2019.
8. **Plasmonic photosynthesis**, Fitzpatrick Institute of Photonics Seminar Co-hosted with Chemistry, MEMS & MatSci, Duke University, Durham, NC, Apr 2019.
9. **Fixing carbon with assistance from plasmon excitations**, Physical/Analytical Seminar, Texas A&M University, College Station, TX, Oct 2018.
10. **Watching carbon fixation on a plasmonic catalyst nanoparticle**, Symposium on Technical Developments & Applications of Optical Chemical Imaging, 256th ACS National Meeting, Boston, MA, Aug 2018.
11. **Carbon fixation on plasmonic catalysts**, Department of Chemical Sciences, Tata Institute of Fundamental Research, Jun 2018.
12. **Carbon fixation on plasmonic catalysts**, College of Environment and Energy, South China University of Science and Technology, May 2018.
13. **Carbon fixation on plasmonic catalysts**, School of Chemistry and Chemical Engineering, Nanjing University, May 2018.
14. **Carbon fixation on plasmonic catalysts**, Electroanalytical Chemistry Lecture series, Changchun Institute of Applied Chemistry, May 2018.
15. **Carbon dioxide to hydrocarbon conversion on plasmonic catalysts**, Frontiers in Photochemistry Conference, Cancun, MX, Feb 2018.

16. **Turning Photons into Chemical Bonds: artificial photosynthesis, sculpting EM fields, multi-electronic states and energy-rich bonds**, Lunch hour seminar, American Vacuum Society UIUC student chapter, Urbana, IL, Oct 2017.

17. **Turning photons into chemical bonds**, Chemistry seminar, Wabash College, Crawfordsville, IN, Oct 2017.

18. **Turning photons into chemical bonds using strong light-matter coupling**, Invited award talk, AVS Prairie Chapter meeting, Milwaukee, WI, Sep 2017.

19. **Turning photons into chemical bonds**, Kavli Emerging Leader in Chemistry Lecture, 254th ACS National Meeting, Washington DC, Aug 2017.

20. **Key insights into carbon dioxide photoreduction from single-nanoparticle catalysis studies**, Invited talk, Colloidal Metal and Semiconductor Nanostructures Symposium, 254th ACS National Meeting, Washington DC, Aug 2017.

21. **Advanced energy materials based on nanocrystals**, Invited talk, NaNaX8, Braga, Portugal, Jul 2017.

22. **Light/matter interactions for the biomedical researcher**, Tutorial lecture, NSF-funded Workshop on Light/Matter Interactions at the nanoBIO interface, UIUC, Urbana, IL, Nov 2016.

23. **Chemical secrets told, one nanocrystal at a time**, Physical chemistry seminar, UIUC, Urbana, IL, Sep 2016.

24. **Plasmon in a box**, Symposium on new directions in nanoplasmonics, SciX 2016, Minneapolis, MN, Sep 2016.

25. **Dynamics and heterogeneity of carbon dioxide adsorption and photoreduction uncovered from single-nanoparticle studies**, 252nd ACS National Meeting, Philadelphia, PA, Aug 2016.

26. **The nature of nanocrystalline transformations**, Seminar in Catalysis Chapter, 3M, St. Paul, MN, Jun 2016.

27. **Learning atomistic secrets of chemistry from nanosolids**, Physical chemistry seminar, MIT, Cambridge, MA, May 2016.

28. **Atomic secrets of solid-state transformations**, Physical chemistry seminar, Stanford University, Palo Alto, CA, May 2016.

29. **Atomic secrets of solid-state transformations**, Physical chemistry seminar, Rice University, Houston, TX, Apr 2016.

30. **Learning atomistic secrets of chemistry from nanosolids**, Physical/Analytical chemistry seminar, Iowa State University, Ames, IA, Apr 2016.

31. **The nature of nanocrystalline transformations**, Webinar, Center for Sustainable Nanotechnology, University of Wisconsin-Madison, WI, Mar 2016.

32. **Plasmon in a box**, Invited lecture in honor of Priestley medalist M. A. El-Sayed, PHYS Symposium on Physical principles in functional nanoscience, 251st ACS National Meeting, San Diego, CA, Mar 2016.

33. **Some hidden facts about chemistry in the solid-state**, Chemical Physics seminar, Caltech, Pasadena, CA, Feb 2016.

34. **Some hidden facts about chemistry in the solid-state**, Physical Chemistry seminar, University of Wisconsin-Madison, Madison, WI, Nov 2015.

35. **Some hidden facts about chemistry in the solid-state**, Physical Chemistry seminar, University of Colorado at Boulder, Boulder, CO, Nov 2015.

36. **Some hidden facts about chemistry in the solid-state**, Physical Chemistry seminar, University of California at Berkeley, CA, Oct 2015.

37. **Some hidden facts about chemistry in the solid-state**, James Frank Institute Colloquium, University of Chicago, Chicago, IL, Sep 2015.

38. **Hidden dynamics of solid-state reactions, revealed one nanocrystal at a time**, JPC C Award lecture, 250th ACS National Meeting, Boston, MA, Aug 2015.

39. **Collective behavior in the solid-state**, MRSEC colloquium, Northwestern University, Evanston, IL, May 2015.

40. **Collective behavior in the solid-state elucidated by plasmonic spectroscopy**, Invited talk, Session on Probing Nano-Plasmonic Phenomena at the Single Molecule, Single Electron, & Single Photon Level, 249th ACS National Meeting, Denver, CO, Mar 2015.

41. **Atomistic insights into chemical reactions, one nanocrystal at a time**, DuPont, Mar 2015.

42. **Atomistic insights into reactive and catalytic transformations, one nanocrystal at a time**, Physical chemistry seminar, Cornell University, Mar 2015.

43. **Atomistic insights into reactive and catalytic transformations, one nanocrystal at a time**, Physical chemistry seminar, UCLA, Mar 2015.

44. **Atomistic insights into reactions, one nanocrystal at a time**, MRSEC colloquium, Columbia University, Jan 2015.

45. **Collective behavior of electrons and atoms in the solid-state**, CeNSE seminar, Indian Institute of Science, Bengaluru, India, Jan 2015.

46. **Making a difference through your work: Some examples from nanoscience research**, Keynote address, National Honor Society Induction Ceremony, Champaign Central High School, Dec 2014.

47. **Atomistic insights into reactive transformations obtained one nanocrystal at a time**, Department of Chemical Engineering, University of Illinois at Chicago, Nov 2014.

48. **Collective behavior of electrons and atoms in nanosolids**, Materials Chemistry seminar, Department of Chemistry and Biochemistry, Indiana University, Bloomington, IL, Nov 2014.

49. **Atomistic insights into reactive and catalytic transformations obtained from single-nanocrystal studies**, Physical Chemistry seminar, School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA, Sep 2014.

50. **Deciphering solid-state chemistry and catalysis one nanocrystal at a time**, Noble Metal Nanoparticles Gordon Research Conference, Mount Holyoke, MA, Jun 2014.

51. **Collective Behavior of Electrons and Ions**, Institut des NanoSciences de Paris, Universite Pierre et Marie Curie, Paris, France, Jun 2014.

52. **Collective Behavior of Electrons and Ions**, Laboratory for Nanoscience, Instrumentation, and Optics, Universite de Technologie de Troyes, France, Jun 2014.

53. **Chemistry on the nanoscale**, Radiation Lab and Physical/Analytical Chemistry seminar, University of Notre Dame, IN, May 2014.

54. **Deciphering solid-state chemistry on the nanoscale**, MSE Department, Stanford University, Palo Alto, CA, Apr 2014.

55. **Deciphering chemistry on the nanoscale using optical spectroscopy**, Modern Optics Seminar, MIT, Cambridge, MA, Apr 2014.

56. **Elucidating chemical transformations one nanocrystal at a time**, Chemistry dept, Indiana University-Purdue University, Indianapolis, IN, Mar 2014.

57. **Chemistry on the nanoscale**, Golden Jubilee Visiting Fellow lecture, Institute of Chemical Technology, Mumbai, India, Jan 2014.

58. **Elucidating chemical transformations one nanocrystal at a time**, Institute of Materials Science and Engineering, Washington University at St. Louis, MO, Nov 2013.

59. **Elucidating chemical transformations one nanocrystal at a time**, Invited talk, M. A. El-Sayed 80th Birthday Symposium, ACS Southeastern Regional Meeting, Atlanta, GA, Nov 2013.

60. **Chemical transformations on the nanoscale**, Invited talk, Nanocrystal Analytical Chemistry Session, 246th ACS National Meeting, Indianapolis, IN, Sep 2013.

61. **Single-nanocrystal reaction trajectories reveal co-operative nature of transition**, Invited Young Investigator Talk, Gordon Research Conference on Nanocrystals, Mount Holyoke, MA, Aug 2013.

62. **Nanoscience in the Classroom: Nanoparticles, light, and solar energy**, Hot Topic Session, Beginning Teacher STEM Conference, Champaign, IL, Jul 2013.

63. **Chemical transformations on the nanoscale**, Plenary talk, 87th ACS Colloids and Surface Science Symposium, Riverside, CA, Jun 2013.

64. **Computational Nano-Optics**, Institute for Advanced Computing Applications and Technologies, UIUC, Urbana, IL, Jun 2013.

65. **Optical computing**, Google Solve for [X], San Martin, CA, Feb 2013.

66. **Nanocrystal Chemistry and Photochemistry**, Genesys Crystal and Graphene Science Symposium, Boston, MA, Sep 2012.

67. **Controlling electrons, ions, and photons using inorganic nanostructures**, Dow Chemical Day, Young Investigators talk, UIUC, IL, May 2012.

68. **Nano-optics and chemistry**, Berkeley Nanotechnology Forum 2012, UC Berkeley, CA, Apr 2012.

69. **Light on the nanoscale**, Center for Advanced Theory and Material Simulation (CATMS) Lunch Series talk, UIUC, IL, Apr 2012.

70. **Nano-optics and chemistry: From Metals to Semiconductors**, CGSA-sponsored talk, Chemistry Dept., University of Maryland, Baltimore County, MD, Feb 2012.

71. **Nano-optics and chemistry: From Metals to Semiconductors**, Invited talk, Chemistry Dept., University of Louisville, Louisville, KY, Jan 2012.

72. **Nano-optics and chemistry**, Invited talk, Argonne National Lab, Center for Nanoscale Materials, IL, Jan 2012.

73. **Actively tunable plasmon resonances in doped semiconductor quantum dots**, Invited Hot topic talk, Gordon Research Conference on Nanocrystals, Clusters, and Nanostructures, Mount Holyoke, MA, Jul 2011.

74. **Photons, ions, and defects on the nanoscale**, Invited talk, IIT Bombay, Chemistry Dept., Mumbai, India, Jun 2011.

75. **Lighting up the nanoscale**, Invited keynote speech, National Science Teachers Association Symposium, San Francisco, CA, Mar 2011.

76. **Photons, ions, and defects on the nanoscale**, Invited talk, Materials Science and Engineering Dept., Cornell University, Ithaca, NY, Mar 2011.

77. **Photons, ions, and defects on the nanoscale**, Dept. of Chemistry, UC Berkeley, CA, Jan 2011.

78. **Photons, ions, and defects on the nanoscale**, Dept. of Chemistry, Yale University, New Haven, CT, Jan 2011.

79. **Photons, ions, and defects on the nanoscale**, Dept. of Chemistry, University of Chicago, Chicago, IL, Dec 2010.

80. **Photons, ions, and defects on the nanoscale**, Dept. of Chemistry, University of Wisconsin, Madison, WI, Dec 2010.

81. **Photons, ions, and defects on the nanoscale**, Dept. of Chemistry, University of Illinois, Urbana-Champaign, IL Dec 2010.

82. **Photons, ions, and defects on the nanoscale**, Depts. of Chemical Sciences and of Condensed Matter Physics and Materials Science, Tata Institute of Fundamental Research, Mumbai, India, Nov 2010.

83. **Lighting up nanostructures**, Chemical Engineering and Physics Depts., Institute of Chemical Technology, Mumbai, India, Feb 2010.

84. **Rational design of noble metal nanostructures: Implications for nanosensing**, Program track on NanoScience, SPIE Optics + Photonics Annual Meeting, San Diego, CA, Aug 2009.

85. **Using nanostructures to control Light: Implications for biomedicine**, University of California San Francisco Medical School, CA, Jul 2009.

86. **Controlling light at the nanoscale using noble metals**, Department of Condensed Matter Physics and Materials Science, Tata Institute of Fundamental Research, Mumbai, Feb 2009.

87. **Gold nanoparticles: Properties and some applications in medicine and biology**, Program Track on Nano/Biophotonics, SPIE Photonics West, San Jose, CA, Jan 2009.

88. **Surface plasmon resonance-enhanced magneto-optics (SuPREMO)**, Walsworth group, Center for Astrophysics, Harvard University, Cambridge, MA, Nov 2008.

89. **Plasmonic nanostructures for enhancing optical activity**, Chemistry and Chemical Biology Student and Postdoc Seminar Series, Harvard University, Cambridge, MA, Nov 2008.

90. **A universal scaling model for materials design of plasmonic nanostructures**, Graduate Student Awards Symposium, Fall MRS Meeting, Boston, MA, Nov 2007.

91. **The physical nature of coupling between noble metal plasmons**, Atlanta Area Chemical Physics Prize Lectures, Emory University, Atlanta, GA, Mar 2008.

92. **The physical nature of plasmon coupling**, University of California at Berkeley, Liphardt Lab, Dept. of Physics, Nov 2007.

93. **How do noble metal plasmons couple**, Harvard University, Department of Chemistry and Chemical Biology, Oct 2007.

94. **Plasmonic gold nanotechnology for the diagnosis and selective photothermal therapy of cancer**, Elan Drug Technologies Georgia Tech Visit, Petit Institute for Bioscience and Bioengineering, Georgia Institute of Technology, Atlanta, GA, Jan 2007.

95. **Coupling in nanoparticle assemblies: An interesting look at plasmons and their nanotechnological applications**, PhD Student Awards Symposium, School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA, Oct 2006.

FUNDING/GRANTS AWARDED

- Discovery Fund, Department of Chemistry, Awardee, $40,000 awarded, 09/01/2018-8/31/2020
- Richard and Margaret Romano Professorial Scholar, Awardee, $45,000 awarded, 01/01/2018-12/31/2020
- Energy and Biosciences Institute/Shell, Enhancing clean energy technologies by visible light plasmonic excitation, PI, $879,736 awarded, 09/01/2017-08/31/2020
- Energy and Biosciences Institute/Shell, Fast-ion transport in nanostructured solid electrolytes, PI, $750,000 awarded, 09/01/2017-08/31/2020
- National Science Foundation CAREER Award, Elucidation of the mechanistic origins of plasmon-induced chemical reactions, PI, $655,580 awarded, 08/01/2015-07/31/2020
- 3M Nontenured Faculty Award, PI, $45,000 awarded, 08/01/2015-07/31/2018
- American Chemical Society Petroleum Research Fund Doctoral New Investigator, Discovery of active sites on nanostructured oxides for desulfurization, PI, $110,000 awarded, 09/01/2015-08/31/2017
- Arnold and Mabel O. Beckman Young Investigator Award, PI, $750,000 awarded, 09/01/2014-08/31/2019
- Alfred P. Sloan Foundation Research Fellowship in Chemistry, Awardee, $50,000 awarded, 09/15/2014-09/14/2016
- DuPont Young Professor grant, Discovery of Structure-Activity Relationships on the Nanoscale, PI, $75,000 awarded, 09/01/2013-08/31/2016
- UIUC Campus Research Board, PI, $14,240 awarded, 10/10/2013-07/01/2015
- NCSA Faculty fellowship, A Platform for Characterization and Prediction of Novel Nano-optic Phenomena, PI, $25,000 awarded, 09/01/2012-08/31/2013

COLLABORATIVE GRANTS AWARDED

- National Science Foundation, Major Research Instrumentation, Acquisition of an electron energy-loss spectrometer for in situ time-resolved chemical mapping of nanomaterials, PI Renske van der Veen and others, $619,538, awarded, 08/01/2018-07/31/2019
- National Science Foundation, Major Research Instrumentation, PI Jian Min-Zuo and several others, $1,959,168, awarded, 08/01/2012-07/31/2015
- National Science Foundation, Network for Computational Nanotechnology, NanoBIO Node, PI Emad Tajkhorshid and several others, $3,077,990 awarded, 09/01/2012-08/31/2017

COMPUTATIONAL TIME AWARDS

- NCSA Blue Waters General Allocation Renewal & Supplement, Investigation of Novel Crystal Phases & Electronic Topologies in Semiconductor Nanostructures, 440,000 NUs (equivalent to $273,000) awarded, 1/16/2019-12/20/2019
- XSEDE Renewal Research Allocation, DFT Computational Study of Cation Exchange & Transport in Crystalline Solids, 350,000 SUs awarded, 1/1/2019-12/31/2019
- XSEDE Full Research Allocation, DFT Computational Study of Cation Exchange & Transport in Crystalline Solids, 300,000 SUs awarded, 1/1/2018-12/31/2018
- NCSA Blue Waters General Allocation, Investigation of Novel Crystal Phases & Electronic Topologies in Semiconductor Nanostructures, 75,000 NUs awarded (equivalent to $46,000), 11/22/2017-11/21/2018

- XSEDE Full Research Allocation, DFT Computational Study of Cation Exchange & Transport in Crystalline Solids, 350,000 SUs awarded, 10/16/2016-9/30/2017
- XSEDE Supplemental Allocation, DFT Study of Doping & Cation Exchange in CdSe Nanocrystals, 50,000 SUs awarded, 7/16/2016-2/2/2017
- NCSA Blue Waters Exploratory Allocation, Atomistic Modeling of Transformations in Ionic Semiconductor Nanocrystals, 30,000 NUs awarded, 5/16/2016-12/16/2016
- XSEDE Scholar (DDT) Award, DFT Study of Doping & Cation Exchange in CdSe Nanocrystals, 30,000 SUs awarded, 5/16/2016-10/16/2016
- XSEDE Supplemental Allocation, DFT Study of Doping & Cation Exchange in CdSe Nanocrystals, 50,000 SUs awarded, 4/16/2016-2/2/2017
- XSEDE Startup Allocation, DFT Study of Doping & Cation Exchange in CdSe Nanocrystals, 50,000 SUs awarded, 2/3/2016-2/2/2017

SERVICE AS PEER-REVIEWER

- Outstanding (top 5%) reviewer for JPC Letters
- Outstanding (top 5%) of reviewers for Angewandte Chemie in 2016
- Refereeing for journals: Nature, Nature Chemistry, Nature Catalysis, Nature Energy, Science Advances, Nature Communications, Journal of the American Chemical Society, Nature Materials, Nature Nanotechnology, Proceedings of the National Academy of Sciences, Chemical Society Reviews, Chemistry - A European Journal, Applied Physics A, Journal of Physical Chemistry (A, B, C, and Letters), ACS Photonics, Journal of Chemical Physics, Langmuir, Accounts of Chemical Research, Analytical Chemistry, ACS Nano, Nano Letters, Nanotechnology, Nanomedicine, Small, Journal of Nanoscience & Nanotechnology, Colloids & Surfaces, Colloids & Polymer Science, Chemistry of Materials, Applied Physics Letters, ACS Catalysis, Solid State Communications, Journal of Applied Physics, Physica Status Solidi, IEEE Transactions on Nanotechnology, ACS Energy Letters, ChemPhysChem, Angewandte Chemie, Ionics, Nanoscale
- Book reviews: John Wiley and Sons, Angewandte Chemie book review, Springer book review

TEACHING

Spring 15,18, Fall 19	**University of Illinois** - Urbana Champaign, IL Instructor for CHEM 444, Physical Chemistry II: Statistical Thermodynamics Listed among Teachers Ranked as Excellent By Their Students
Spring 13,14,18,Fall 14,15	**University of Illinois** - Urbana Champaign, IL Instructor for CHEM 447, Physical principles laboratory II Listed among Teachers Ranked as Excellent By Their Students
Spring 13,14,18,Fall 13-16	**University of Illinois** - Urbana Champaign, IL Instructor for CHEM 445, Physical principles laboratory I Listed among Teachers Ranked as Excellent By Their Students
Fall 11,12	**University of Illinois** - Urbana Champaign, IL Instructor for CHEM 544A, Graduate-Level Statistical Mechanics Listed among Teachers Ranked as Excellent By Their Students
Spring 19	**University of Illinois** - Urbana Champaign, IL Instructor for CHEM 545, Graduate Physical Chemistry Seminar

SERVICE TO UNIVERSITY

2015-16 **University of Illinois** - Urbana Champaign, IL
Physical Chemistry Graduate Student Advising

2013&14 **University of Illinois** - Urbana Champaign, IL
NSF-3M REU Program Committee

2013-17 **University of Illinois** - Urbana Champaign, IL
Physical Chemistry Seminar Chair

2011-13 **University of Illinois** - Urbana Champaign, IL
Graduate Admissions and Recruiting for Physical Chemistry

2012-13 **University of Illinois** - Urbana Champaign, IL
Radiation and Laser Safety Committee

2012-14 **University of Illinois** - Urbana Champaign, IL
Organizer for Chemistry Faculty Lunch Meetings

2011- **University of Illinois** - Urbana Champaign, IL
Thesis Committee - Chris Berg (Chem), Subalakshmi Kumar (MatSE)
Sumit Ashtekar (Chem), Bruno Giuliano Nicolau (Chem)
William Shaw (Chem), Jonathan Eller (Chem), Nardine Abadeer (Chem)
Melinda Sindoro (Chem), Hyo Na Kim (Chem), Nuri Oh (MatSE)
Lisa Jacob (Chem), Neil Wilson (ChBE), Kandis Gillard (Chem)
Lea Nienhaus (Chem), Zachary Goldsmith (Chem), Huy Nguyen (Chem)
Jordan Dennison (Chem), Alan Sykes (Chem), Michael Counihan (Chem)
Kendrich Hatfield (Chem), Sean Meyer (Chem), Yiming Wang (Chem)
Abinaya Sampath (ChBE), Alex Schrader (Chem), Mahima Unnikrishnan (Chem)
Vanessa DeMarco (Chem senior thesis)

MENTORING AND OUTREACH

2011- **University of Illinois** - Urbana Champaign, IL
PhDs graduated
Progna Banerjee (Physics, Fall 2018) Currently Postdoctoral Researcher at LBNL
Sarah White (Chemistry, Spring 2016) Currently at Applied Materials as Process Engineer
Jeremy Smith (Chemistry, Spring 2016) Currently at Lam Research Corp. as Process Engineer
Aaron Routzahn (Chemistry Spring 2016 Currently at Lam Research Corp. as Process Engineer
Mayank Behl (CHBE, Spring 2014) Currently at Intel as Process Engineer following postdoc research at NREL
PhD candidates: Daniel Dumett Torres (Chem), Varun Mohan (MatSE)
Jaeyoung Heo (MatSE), Dinumol Devasia (Chem), Alex Kurzhals (Chem)
Frank Alcorn (Chem, joint with Prof. van der Veen), Stanley Bram (Chem)
Postdocs: Dr. Andrew Wilson, Dr. Jianxiao Gong
Dr. Ki-Hyun Cho, Dr. Jun Wang, Dr. Ankita Das
Undergraduates: Roma Frances Ripani (Chem)
Former: Qing Yang (Chem), Melika Fini (Chem), Luis Garibay (NSF REU student)
Jiayi Fu (NSF REU student), Dinumol Devasiya (Bose Scholar)
Ryan Sanders (ChBE), Naveed Akhter (Chem), Priya Patel (Chem)
Roarke Burnett (Chem), Johan Yapo (Chem), Aditi Sharma (Bose Scholar)
Bara Saadah (BioE), Ria Christie Christina (Chem)
Tobias Blickhan (UG exchange, TMU Germany), Mahima Unnikrishnan (Bose Scholar)
Junqi Fressia Peng (Chem), Paul Butkovich (Chem)
Zhe Zhang (Peking University UG summer intern), Eric Wu (ChBE), David Qiu (Chem)

Alumni and other Researchers: Sungju Yu (postdoc), Youngsoo Kim (postdoc)
Indranath Chakraborty (postdoc), Xueqiang Zhang (postdoc)
Gayatri Kumari (postdoc), Pooja Tyagi (postdoc)
Wei Lin (visiting scientist), Shengjie Xia (visiting professor)
Lam-Kiu Fong (intern), Rebecca Smith (intern)
Milo Russell (Chem grad 2011-2013),Jacob Faucheaux (Chem grad 2012-2014)
Alexandria Stanton (Chem grad 2012-2014), Cecilia Gentle (Chem grad 2015)
Cody Tripp (Masters program), Alexander Kurzhals (Masters program)

Jan 2019 **American Chemical Society**
Awards committee, PHYS Division and Journal of Physical Chemistry

Apr 2017 **253rd ACS National Meeting, San Francisco, CA**
Judging panel, PHYS Poster Session

Mar 2016 **251st ACS National Meeting, San Diego, CA**
Lead Organizer, Physical Principles in Functional Nanoscience Symposium

Mar 2016 **nanoBIO node Plasmonics workshop, University of Colorado at Boulder**
Organizing committee member

Sep 2015 **University of Illinois** - Urbana Champaign, IL
Panelist for President's Executive Leadership Program (PELP) selected by Chancellor

Nov 2013 **University of Illinois** - Urbana Champaign, IL
Panelist, Professional development workshop for postdoctoral scholars

2012-17 **nanoBIO node at University of Illinois** - Urbana Champaign, IL
Lead scientific developer of nanoDDSCAT, educational/research tool for nanophotonic simulations

Jul 2013 **STEM Beginning Teacher Conference, Illinois New Teacher Collaborative** - Urbana, IL
Discussed nanoscience education as featured breakout session speaker

Spring 2013 **EnLiST/University of Illinois Chemistry Outreach Program** - Urbana, IL
Faculty mentor for chemistry outreach program at ML King school

Apr 2012 **Eastern Illinois ACS WCC Undergraduate Symposium** - Urbana, IL
Judging panel, Undergraduate research oral presentations

Apr 2012 **Berkeley Nanotechnology Forum** - Berkeley, CA
Judging panel, Nanotechnology research poster presentation

2009-10 **Community in the Classroom** - Berkeley, CA
Instructor for lesson activities on solar energy and photochemistry at local schools

2005-06 **Nano@Tech, Georgia Institute of Technology** - Atlanta, GA
Participated in Nanotechnology Outreach (CEISMC camp, 'Ask a Scientist') for school students

LAB MEMBER ACHIEVEMENTS

2019 Daniel Dumett Torres - Physical Chemistry Dissertation Award

2019 Dinumol Devasia - Victor E. Buhrke Graduate Fellowship

2019 David Qiu - John E. Gieseking Scholarship for Undergraduate Research

2019 Dinumol Devasia - J.C. Martin Memorial Student Travel Award

2018 Stanley Bram - Roger Adams Fellowship

2018 Frank Alcorn - Springborn Graduate Fellowship and Roger Adams Fellowship

2018 Daniel Dumett Torres - Workshop for Nanomaterials for Energy Storage and Conversion, Tel Aviv

2018 Dinumol Devasia - Sloan Chemical Prize

2018 Alex Kurzhals - Mark Pytosh Fellowship

2018 Progna Banerjee - Scott Anderson Outstanding (Physics) Graduate Assistant Award

2017 Sungju Yu Bronze Medal at 2017 Samsung Electro-Mechanics Paper Competition

2017 Daniel Dumett Torres - Dorothy M. and Earl S. Hoffman Travel Grant, American Vacuum Society

2017 Daniel Dumett Torres - Drickamer Fellowship

2017 Dinumol Devasia - Mark Pytosh Fellowship

2017 Progna Banerjee - First Prize, Monsanto Research Symposium Poster Presentation

2017 Progna Banerjee - Department of Physics Grad Student Travel Award

2016 Bara Saadah - Mayo Clinic Summer UG Research Fellowship

2016 Andrew Wilson - Springborn Postdoctoral Fellowship

2016 Daniel Dumett Torres- Mr. Chinoree T. and Mrs. Kimiyo Enta Fellowship

2016 Daniel Dumett Torres - Eastman Travel Award

2016 Progna Banerjee - Academic Leadership for Women Engineers Program & Travel Award

2016 Daniel Dumett Torres- XSEDE Scholar

2015 Jeremy Smith - Geerdes Travel Award

2015 Cody Tripp - SCS Graduate Teaching Travel Award

2015 Aaron Routzahn - Eastman Travel Award

2015 Daniel Dumett Torres - Chinoree T. Kimiyo Enta Scholarship

2015 Naveed Akhter - John E. Gieseking Scholarship

2015 Sarah White - Klemperer/Materials Chemistry Best Dissertation Award

2015 Jeremy Smith - Eastman Travel Grant Award

2014 Sarah White- J. & M. Witt Fellowship

2014 Cody Tripp - J. & M. Witt Fellowship

2014 Jeremy Smith - Buhrke Fellowship

2014 Cody Tripp - Dept. of Chemistry Teaching Excellence Fellowship

2013 Mayank Behl - Hanratty Travel Award

2013 Chemistry in Motion College and University Challenge, ACS Indianapolis

2013 Sarah White - University Fellowship and Jeremy Smith - James R. Beck Fellowship

2013 Paul Butkovich - Summer Research Scholarship from Chemistry Dept.

2013 Aaron Routzahn - NSF Graduate Fellowship

2013 Jacob Faucheaux - NSF Graduate Fellowship

2012-13 Mayank Behl - FMC Graduate Fellowship

2012 Qing Yank and Melika Fini - Summer Research Scholarships from Chemistry Dept.

2012 Luis Garibay - NSF-3M REU Fellowship

2012 Mayank Behl - Dow Chemical Company Graduate Fellowship

2012 Lam-Kiu Fong - NSF Graduate Student Fellowship

2011-12 Sarah White - Sylvia Stoesser Departmental Fellowship

2012 Melika Fini and Qing Yang - Summer Research Fellowships

2012 Qing Yang - Wilson Scholarship

2012 Sarah White and Mayank Behl - ACS International-Domestic Student Summit

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