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PROFESSIONAL APPOINTMENTS

Columbia University, Associate Professor	2014 - present
Columbia University, Assistant Professor	2009 - 2014
University of California, Berkeley, Postdoctoral	2005 - 2009
Dow Chemical Company, Research Intern	1998, 1999

EDUCATION

California Institute of Technology, Ph.D.	2000 - 2005
University of Wisconsin, Madison, B.S.	1996 - 2000

AWARDS AND HONORS

2016 Closs Lecturer, University of Chicago
2016 Joliot Chair, École Supérieure de Physique et de Chimie Industrielles
2016 American Chemical Society Award in Pure Chemistry
2012 National Science Foundation, CAREER Award
2011 DuPont Young Faculty Award
2011 Department of Energy, Early Career Research Award
2010 3M Nontenured Faculty Award
2005 American Chemical Society, Alternative Energy Postdoctoral Fellow
2003 Dow Chemical Travel Fellowship
2000 Hilldale Undergraduate Research Fellow

PUBLICATIONS (SEE ALSO: GOOGLE SCHOLAR FOR JONATHAN S. OWEN)

- 1) "Synthesis and Size Dependent Band Gap of ZnS Nanocrystals" Bennett, E.; Greenberg, M.W.; Jordan, A.J.; Banerjee, S.; Billinge, S.J.L.; Owen, J.S.; *In Preparation*.
- 2) "Monodisperse PbS Nanocrystals Arising From Persistent Nucleation and Size Dependent Growth" Abécassis, B.; Greenberg, M.; Bal, V.; Campos, M.P.; Jana, S.; Mahler, B.; Guillemeney, L.; Hendricks, M.P.; De Rosha, D.; Bennett, E.; Saenz, N.; Peters, B.; Owen, J.S.; *In Preparation*.
- 3) "Temperature Dependence of Colloidal PbS and PbSe Nanocrystal Nucleation and Growth" De Roo, J.; Campos, M.P.; Greenberg, M.W.; Hendricks, M.P.; Bennett, E.; Saenz, N.; Abécassis, B.; Ghose, S.K.; Owen, J.S.; *In Preparation*.
- 4) "Performance and Reliability of Spherical Quantum Well Down Converters in Solid State Lighting" Rreza, I.; Yang, H.; Hamachi, L.; Campos, M.; Hull, T.; Chan, E.; Owen, J.S.; *In Revision*.

PUBLICATIONS (CONTINUED)

- 5) “Strong Electronic Coupling in Hg²⁺- and Cd²⁺-linked oligomers of [Ru₆C(CO)₁₆]²⁻” Greenberg, M.; Chen, J.; Beecher, A.N.; Carneiro, F.; Auyeung, E.; Paley, D.; Millis, A.J.; Reichman, D.; Owen, J.S.; *In Revision*.
- 6) “Control Over InP Nanocrystal Size with Aminophosphine Precursors with Tunable Reactivity: Continuous Nucleation and Size Dependent Growth Kinetics” McMurtry, B.M.; Qian, K.; Teglassi, J.; Swarnakar, A.N.; De Roo, J.; Owen, J. S.; *Chem. Mater.* **2020**, *32*(10), 4358-4368.
- 7) “Anthracene Diphosphate Ligands for CdSe Quantum Dots: Molecular Design for Efficient Upconversion” De Roo, J.; Huang, Z.; Schuster, N.J.; Hamachi, L.S.; Congreve, D.; Xu, Z.; Fishman, D.A.; Lian, T.; Owen, J.S.; Tang, M.L.; *Chem. Mater.* **2020**, *32*(4), 1461-1466.
- 8) “Precursor Reaction Kinetics Control Compositional Grading in CdSe_{1-x}S_x Nanocrystal Heterostructures” Hamachi, L.S.; Yang, H.; Jen-La Plante, I.; Saenz, N.; Qian, K.; Campos, M.P.; Cleveland, G.T.; Oza, A.; Rreza, I.; Walravens, W.; Chan, E.M.; Hens, Z.; Crowther, A.; Owen, J.S.; *Chem. Sci.* **2019**, *10*, 6539-6532.
- 9) “Dynamic Emission Stokes Shift and Liquid-Like Dielectric Solvation of Band Edge Carriers in Lead-Halide Perovskites” Guo, Y.; Yaffe, O.; Hull, T.D.; Owen, J.S.; Reichman, D.R.; Brus, L.E.; *Nature Communications*, **2019**, *10*(1), 1175.
- 10) “Size Dependent Lattice Dynamics of Atomically Precise Cadmium Selenide Quantum Dots” Shi, C.; Beecher, A.N.; Li, Y.; Owen, J.S.; Leu, B.M.; Said, A.H.; Hu, M.Y.; Billinge, S.J.L.; *Phys. Rev. Lett.*, **2019**, *122*(2), 026101
- 11) “Flexible Nanopipettes for Motion-Insensitive Intracellular Electrophysiology *In Vivo*” Jayant, K.; Wenzel, M.; Bando, Y.; Hamm, J.P.; Mandriota, N.; Rabinowitz, J.H.; Jen-La Plante, I.; Owen, J.S.; Sahin, O.; Shepard, K.L.; Yuste, R.; *Cell Rep.* **2019**, *26*, 266–278.
- 12) “Anthracene as a Launchpad for a Phosphinidene Sulfide and for Generation of a Phosphorus–Sulfur Material Having the Composition P₂S, a Vulcanized Red Phosphorus That Is Yellow” Transue, W.J.; Nava, M.; Terban, M.W.; Yang, J.; Greenberg, M.W.; Wu, G.; Foreman, E.S.; Mustoe, C.L.; Kennepohl, P.; Owen, J.S.; Billinge, S.J.L.; Kulik, H.J.; Cummins, C.C.; *J. Am. Chem. Soc.* **2019**, *141*(1), 431–440.
- 13) “Synthesis of Phosphonic Acid Ligands for Nanocrystal Surface Functionalization and Solution Processed Memristors” De Roo, J.; Zhou, Z.; Wang, J.; Deblock, L.; Owen, J.S.; Nonnemann, S.S.; *Chem. Mater.* **2018**, *30*(21), 8034-8039.
- 14) “Probing Solvent-Ligand Interactions in Colloidal Nanocrystals by the NMR Line Broadening” De Roo, J.; Yazdani, N.; Drijvers, E.; Lauria, A.; Maes, J.; Owen, J.S.; Van Driessche, I.; Niederberger, M.; Wood, V.; Martins, J.C.; Infante, I.; Hens, Z.; *Chem. Mater.* **2018**, *30*(15), 5485–5492.

PUBLICATIONS (CONTINUED)

- 15) “Localizing Seizure Activity in the Brain Using Implantable Micro-LEDs with Quantum Dot Downconversion” Choi, C.; Colón-Berrios, A.R.; Hamachi, L.S.; Owen, J.S.; Schwartz, T.H.; Ma, H.; Kyymissis, I.; *Adv. Mater. Tech.*, **2018**, 6(3), 1700366.
- 16) “Stereoelectronic Effects on the Binding of Neutral Lewis Bases to CdSe Nanocrystals” Anderson, N.C.; Chen, P.E.; Buckley, A.K.; De Roo, J.; Owen, J.S.; *J. Am. Chem. Soc.* **2018**, 140(23), 7199–7205.
- 17) “Two-Dimensional Fullerene Assembly from an Exfoliated van der Waals Template” Lee, K.; Choi, B.; Jen-La Plante, I.; Paley, M.V.; Zhong, X.; Crowther, A.C.; Owen, J.S.; Zhu, X.Y.; Roy, X. *Angew. Chem. Int. Ed.* **2018**, 57(21), 6125–6129.
- 18) “Kinetic Control Over CdS Nucleation Using a Library of Thiocarbonates, Thiocarbamates, and Thioureas” Hamachi, L.S.; Jen-La Plante, I.; Coryell, A.C.; De Roo, J.; Owen, J.S.; *Chem. Mater.* **2017**, 29(20), 8711–8719.
- 19) “Stabilization of Colloidal Ti, Zr, and Hf Oxide Nanocrystals by Protonated Tri-*n*-Octylphosphine Oxide and its Decomposition Products” De Keukeleere, K.; Coucke, S.; De Canck, E.; Van Der Voort, P.; Delpech, F.; Coppel, Y.; Hens, Z.; Van Driessche, I.; Owen, J.S.; De Roo, J. *Chem. Mater.* **2017**, 29(23), 10233–10242.
- 20) “Nucleation Kinetics from La Mer Burst Data” Chu, D.B.K., Owen, J.S.; Peters, B.; *J. Phys. Chem. A* **2017**, 121(40), 7511–7517.
- 21) “Interplay Between Organic Cations and Inorganic Framework and Incommensurability in Hybrid Lead-Halide Perovskite CH₃NH₃PbBr₃” Guo, Y.; Yaffe, O.; Paley, D.W.; Beecher, A.N.; Hull, T.D.; Szpak, G.; Owen, J.S.; Brus, L.E.; Pimenta, M.A.; *Phys. Rev. Mater.* **2017**, 1(4), 042401.
- 22) “Chemical Synthesis and Luminescence Applications of Colloidal Semiconductor Quantum Dots” Owen, J.S., Brus, L.E. *J. Am. Chem. Soc.* **2017**, 139(32), 10939–10943.
- 23) “Tris (2-mercaptoimidazolyl) hydroborato Cadmium Thiolate Complexes, [TmBut] CdSAr: Thiolate Exchange at Cadmium in a Sulfur-Rich Coordination Environment” Kreider-Mueller, A.; Quinlavin, P.J.; Owen, J.S.; Parkin, G. *Inorg. Chem.* **2017**, 56(8), 4643–4653.
- 24) “Local Polar Fluctuations in Lead Halide Perovskite Crystals” Omer, Y.; Guo, Y.; Tan, L.Z.; Egger, D.A.; Hull, T.; Stoumpos, C.C.; Zheng, F.; Heinz, T.F.; Kronik, L.; Kanatzidis, M.G.; Owen, J.S.; Rappe, A.M. Pimenta, M.A.; Brus, L.E. *Phys. Rev. Lett.* **2017**, 118(13), 136001.
- 25) “Unbalanced Hole and Electron Diffusion in Lead Halide Perovskites” Elbaz, G.A.; Straus, D.B.; Semonin, O.E.; Hull, T. D.; Paley, D.W.; Kim, P.; Owen, J.S.; Kagan, C.R.; Roy, X. *Nano Lett.* **2017**, 17(3), 1727–1732.
- 26) “Tight Binding of Carboxylate, Phosphonate, and Carbamate Anions to Stoichiometric CdSe Nanocrystals” Chen, P.E.; Norman, Z.M.; Anderson, N.C.; Owen, J.S.; *J. Am. Chem. Soc.* **2017**, 139(8), 3227–3236.

PUBLICATIONS (CONTINUED)

- 27) "A Library of Selenourea Precursors to PbSe Nanocrystals with Size Distributions Near that Homogeneous Limit" Campos, M.; Hendricks, M.P.; Beecher, A.N.; Walravens, W.; Swain, R.A.; Cleveland, G. T.; Hens, Z.; Sfeir, M.Y.; Owen, J.S.; *J. Am. Chem. Soc.* **2017**, *139*(6), 2296–2305.
- 28) "On the Origins of Surface Traps in Colloidal II-VI Semiconductor Nanocrystals" Houtepen, A.J.; Hens, Z.; Owen, J.S.; Infante, I.; *Chem. Mater.* **2017**, *29*(2), 752-761.
- 29) "Targeted Intracellular Voltage Recordings From Dendritic Spines Using Quantum-Dot Coated Nanopipettes" Jayant, K.; Hirtz, J.J.; Jen-La Plante, I.; Tsai, D.M.; De Boer, W.D.A.M.; Semonche, A.; Peterka, D.S.; Owen, J.S.; Sahin, O.; Shepard, K.L.; Yuste, R.; *Nat. Nano*, **2017**, *4*(12), 335.
- 30) "The Transition from Molecular Vibrations to Phonons in Atomically Precise Cadmium Selenide Quantum Dots." Beecher, A.N.; Dziatko, R.A.; Steigerwald, M.L.; Owen, J.S. Crowther, A.C.; *J. Am. Chem. Soc.* **2016**, *138*(51), 16754-16763.
- 31) "Direct Observation of Dynamic Symmetry Breaking above Room Temperature in Methylammonium Lead Iodide Perovskite" Beecher, A.N.; Semonin, O.E.; Skelton, J.M.; Frost, J.M.; Terban, M.W.; Zhai, H.; Alatas, A.; Owen, J. S.; Walsh, A.; Billinge, S.J.; *ACS Energy Lett.* **2016**, *1*(4), 880-887.
- 32) "Limits of Carrier Diffusion in *n*-Type and *p*-Type CH₃NH₃PbI₃ Perovskite Single Crystals" Semonin, O.E.; Elbaz, G.A.; Straus, D.B. Hull, T.B.; Paley, D.; Van der Zande, A. M.; Hone, J.; Kymissis, I.; Kagan, C.R.; Roy, X., Owen, J.S.; *J. Phys. Chem. Lett.* **2016**, *7*(17), 3510-3518.
- 33) "Modulation of Nitrogen Vacancy Charge State and Fluorescence in Nanodiamonds Using Electrochemical Potential" Karaveli, S.; Gaathon, O.; Wolcott, A.; Sakakibara, R.; Shemesh, O.A.; Peterka, D.S.; Boyden, E.S.; Owen, J.S.; Yuste, R.; Englund, D.; *PNAS*, **2016**, *113*(15), 3938-3943.
- 34) "Synthesis Structure and Reactivity of [TM-*t*Bu]ZnH, a Monomeric Terminal Zinc Hydride Compound in a Sulfur-Rich Coordination Environment: Access To a Heterobimetallic Compound" Krieder-Mueller, A.; Quinlavin, P.J.; Rauch, M.; Owen, J.S.; Parkin, G.; *Chem. Comm.*, **2016**, *52*, 2358-2361.
- 35) "Synthesis and Surface Chemistry of Cadmium Carboxylate Passivated CdTe Nanocrystals from Cadmium bis(phenyltellurolate)" Campos, M.P.; Owen, J.S.; *Chem. Mater.* **2016**, *28*(1), 227-233.
- 36) "The Effect of Surface Stoichiometry on Blinking and Hole Trapping Dynamics in CdSe Nanocrystals" Anderson, Busby, E.; N.C.; Owen, J.S.; Sfeir, M.E *J. Phys. Chem. C* **2015**, *119*(49), 27797-27803.

PUBLICATIONS (CONTINUED)

- 37) "Infrared Spectroscopic Study of Vibrational Modes in Methylammonium Lead Halide Perovskites" Galser, T.; Müller, C.; Sender, M.; Kerkler, C.; Semonin, O.E.; Hull, T.D.; Yaffe, O.; Owen, J.S.; Kowalsky, W.; Pucci, A.; Lovrinčić, R. *J. Phys. Chem. Lett.*, **2015**, 6(15), 2913-2918.
- 38) "Exchange of Alkyl and Tris(2-mercapto-1-*t*-butylimidazolyl)hydroborato Ligands Between Zinc, Cadmium and Mercury" Kreider-Mueller, A.; Quinlivan, P.J.; Rong, Y.; Owen, J.S.; Parkin, G.; *J. Organomet. Chem.* **2015**, 792, 177-183.
- 39) "Excitons in Ultrathin Organic-Inorganic Perovskite Crystals" Yaffe, O.; Chernikov, A.; Norman, Z.M.; Velaunthapillai, A.; van der Zander, A.; Owen, J.S.; Heinz, T.F. *Phys. Rev. B*, **2015**, 92, 045414.
- 40) "A Tunable Library of Precursors to Metal Sulfide Nanocrystals", Hendricks, M.P.; Campos, M.P.; Cleveland, G.T.; Jen-La Plante, I.; Owen, J.S.; *Science* **2015**, 348(6240), 1226-1230.
- 41) "Synthesis and Structures of Cadmium Carboxylate and Thiocarboxylate Compounds with a Sulfur-Rich Coordination Environment: Carboxylate Exchange Kinetics Involving Tris(2-mercapto-1-*t*-butylimidazolyl)hydroborato Cadmium Complexes, [Tm^R]Cd(O₂CR)" Krieder-Mueller, A.; Quinlivan, P.; Rong, Y.; Owen, J.S.; Parkin, G.; *Inorg. Chem.*, **2015**, 54(8), 3835-3850.
- 42) "The Coordination Chemistry of Nanocrystal Surfaces" Owen, J.S.: *Science*, **2015**, 347(6222), 615-616. (*Invited Perspective Article*)
- 43) "Trap States in Lead Iodide Perovskites" Wu, X.; Trinh, M. T.; Niesner, D.; Zhu, H.; Noman, Z.; Owen, J.S.; Yaffe, O.; Kudisch, B. J.; Zhu, X.-Y.; *J. Am. Chem. Soc.*, **2015**, 137 2089-2096.
- 44) "Surface Structure of Aerobically Oxidized Diamond Nanocrystals" Wolcott, A.; Schiros, T.; Trusheim, M.E.; Chen, E.H.; Nordlund, D; Diaz, R.E.; Gaathon, O.; Englund, D.; Owen, J.S.; *J. Phys. Chem. C*, **2014**, 118(46), 26695-26702.
- 45) "Atomic Structure and Gram Scale Synthesis of Three Tetrahedral Quantum Dots" Beecher, A.N.; Yang, X.; Palmer, J.; Lagrassa, A.; Juhas, P.; Billinge, S.J.; Owen, J.S.; *J. Am. Chem. Soc.*, **2014**, 136(30), 10645-10653.
- 46) "Electrical Transport and Grain Growth in Chloride-Terminated Cadmium Selenide Nanocrystal Thin Films" Norman, Z.M.; Anderson, N.C.; Owen J.S. *ACS Nano*. **2014**, 8(7), 7513-7521.
- 47) "Molecular Structures of Tris(2-mercapto-1-*tert*-butylimidazolyl)hydroborato and Tris(2-mercapto-1-adamantylimidazolyl)hydroborato Sodium Complexes: Analysis of [Tm^R] Ligand Coordination Modes and Conformations" Krieder-Mueller, A.; Rong, Y.; Owen, J.S.; Parkin, G.; *Dalton Trans.* **2014**, 43, 10852-10865.

PUBLICATIONS (CONTINUED)

- 48) “Time Resolved Energy Transfer From Single Chloride Terminated Nanocrystals to Graphene” Ajayi, O.A.; Anderson, N.C.; Cotlet, M.; Petrone, N.C.; Gu, T.; Wolcott, A.; Gesuele, F.; Hone, J. Owen J.S. Wong, C. W.; *App. Phys. Lett.* **2014**, *104*(17), 17101.
- 49) “Structure of Methylammonium Lead Iodide Within Mesoporous Titanium Dioxide: Active Material in High Performance Perovskite Solar Cells” Choi, J.J.; Yang, X.; Norman, Z.; Billinge, S.J.; Owen, J.S.; *Nano Lett.* **2014**, *14*, 127-133.
- 50) “A Hot Electron-Hole Pair Breaks the Symmetry of a Semiconductor Quantum Dot” Trinh, M.; Sfeir, M.; Choi, J.J.; Owen, J.S.; Zhu, X.Y.; *Nano Lett.* **2013**, *13*, 6091-6097.
- 51) “Ligand Exchange and the Stoichiometry of Metal-Chalcogenide Nanocrystals: Spectroscopic Observation of Facile Metal-Carboxylate Binding and Displacement” Anderson, N.C.; Hendricks, M.P.; Choi, J.J.; Owen, J.S.; *J. Am. Chem. Soc.* **2013**, *135*, 18536-18548.
- 52) “Conversion Reactions of Metal Chalcogenide Nanocrystal Precursors” García-Rodríguez, R.; Hendricks, M.P.; Cossairt, B.M.; Liu, H.; Owen, J.S.; (*invited review*) *Chem. Mater.* **2013**, *25*, 1233-1249.
- 53) “Soluble Chloride-Terminated Cadmium Selenide Nanocrystals: Ligand Exchange Monitored by ^1H and ^{31}P NMR Spectroscopy” Anderson, N.C.; Owen, J.S.; *Chem. Mater.*, **2013**, *25*, 69-76.
- 54) “The Importance of Nanocrystal Precursor Conversion Kinetics: Mechanism of the Reaction Between Cadmium Carboxylate and Cadmium-*bis*-dithiophosphate” Hendricks, M.A.; Cossairt, B.C.; Owen, J.S.; *ACS Nano* **2012**, *6*(11), 10054-10062.
- 55) “Tuning the Surface Structure and Optical Properties of CdSe Clusters Using Coordination Chemistry” Cossairt, B.M.; Juhas, P.; Billinge, S.J.; Owen, J.S.; *J. Phys. Chem. Lett.* **2011**, *2*, 3075-3080.
- 56) “CdSe Clusters: At the Interface of Small Molecules and Quantum Dots” Cossairt, B.M.; Owen, J.S.; *Chem. Mater.* **2011**, *23*(12), 3114-3119.
- 57) “Focusing Nanocrystal Size Distributions via Production Control” Clark, M.D.; Kumar, S.K.; Owen, J.S.; Chan, E.M.; *Nano Lett.* **2011**, *11*, 1976-1980.
- 58) “Precursor Conversion Kinetics and the Nucleation of Cadmium Selenide Nanocrystals” Owen, J.S.; Chan, E.M.; Liu, H.T.; Alivisatos, A.P. *J. Am. Chem. Soc.* **2010**, *132*(51), 18206-18213.
- 59) “Reproducible, High-Throughput Synthesis of Colloidal Nanocrystals for Optimization in Multidimensional Parameter Space” Chan, E.M.; Xu, C.; Mao, A.W.; Han, G.; Owen, J.S.; Cohen, B.E.; Milliron, D.J. *Nano Lett.*, **2010**, *10*, 1874-1885.

PUBLICATIONS (CONTINUED)

- 60) "Reaction Chemistry and Ligand Exchange at Cadmium Selenide Nanocrystal Surfaces" Owen, J.S.; Park, J.; Trudeau, P.-E.; Alivisatos, A.P. *J. Am. Chem. Soc.* **2008**, *130*, 12279-12281.
- 61) "Mechanistic Study of Precursor Evolution in Colloidal Group II-VI Semiconductor Nanocrystal Synthesis" Liu, H.T.; Owen, J.S.; Alivisatos, A.P. *J. Am. Chem. Soc.* **2007**, *129*, 305-312.
- 62) "Kinetics and Mechanism of Methane, Methanol and Dimethyl Ether C-H Activation" Owen, J.S.; Labinger, J.A.; Bercaw, J.E. *J. Am. Chem. Soc.* **2006**, *128*, 2005-2016.
- 63) "N-(2-pyridyl)pyridin-2'-ylidene Complexes of Nickel, Palladium and Platinum" Piro, N.A.; Owen, J.S.; Bercaw, J.E. *Polyhedron*, **2004**, *126*, 8247-8255.
- 64) "Pyridinium-Derived N-Heterocyclic Carbene Complexes of Platinum: Synthesis, Structure and Ligand Substitution Kinetics" Owen, J.S.; Labinger, J.A.; Bercaw J.E. *J. Am. Chem. Soc.* **2004**, *126*, 8247-8255.
- 65) "Rapid Access to Diverse Arrays of Chiral 2,4-Diazaphospholanes" Landis, C.R.; Jin, W.C.; Owen, J.S. *Angew. Chem. Int. Ed.* **2001**, *40*, 3432-3434.

PATENTS

- 1) "Methods of producing metal sulfides, metal selenides, and metal sulfides/selenides having controlled architectures using kinetic control", Hendricks, M.P.; Campos, M.P.; Cleveland, G.; Jen-LaPlante, I.; Hamachi, L. Owen, J.S. **2016**, PCT/US2016/013518.
- 2) "Use of Substituted Thioureas as Sulfur Precursors for Nanostructured Materials", Hendricks, M.P.; Campos, M.C.; Owen, J.S. **2014**, PCT/US2014/057740, US 15/024,550, EP 20140847668, S. Korea 10-2016-7010622, China 201480058564.9.
- 3) "Ligand Exchange at II-VI Nanocrystal Surfaces", Owen, J.S.; Alivisatos, A.P., **2009**, US Patent 8,435,635 B2.
- 4) "Preparation of Diazaphosphacycles and Their Corresponding Transition Metal Complexes as Allylic Alkylation Catalysts and Hydrogenation Catalysts", Landis, C.R.; Jin W.; Owen, J.S.; Clark, T.P. **2003**, WO Patent 03/010174 A1.
- 5) "Diazaphosphocycles", Landis, C.R.; Jin, W.; Owen, J.S.; Clark, T.P. **2003**, US Patent 20030055254 A1.

INVITED LECTURES

-2021-

American Conference on Crystal Growth and Epitaxy, (08/2)
American Chemical Society Colloid and Surface Science Conference, (06/13)

-2020-

Department of Energy, Light Emitting Diode R&D Discussion, (08/26)
The News in Nanocrystals, Student Organized Symposium, CU Boulder and MIT, (06/17)
Department of Energy Solid State Lighting R&D Workshop (01/29)

-2019-

Purdue University, Department of Chemistry (12/3)
Rutgers University, Department of Physics (11/21)
Nextdot, Paris, France (11/04)
Istituto Italiano di Tecnologia, Lecce, Italy (10/14)
Université de Lyon, Department of Chemistry (10/04)
École Normale Supérieure de Lyon, Department of Chemistry (10/03)
École Normale Supérieure de Lyon, Department of Chemistry (09/25)
Harvard University, Department of Chemistry (04/29)
Boston University, Department of Chemistry (04/26)
American Chemical Society National Meeting, Orlando, FL (03/31 – 04/04):
 ACS Fellow Award Symposium for Dr. Pete Nickias
 Fresenius Award Symposium for Prof. Brandi Cossairt
 Chemistry at the Interface of Solution Processed Materials
 Understanding the Inorganic-Organic Interface in Colloidal Nanomaterials
EMD Group – Performance Materials, Branchburg, New Jersey (01/23)

-2018-

Cornell University, Department of Chemistry (11/19)
Osram Opto Semiconductors, Regensburg, Germany (10/26)
Applied Nanotechnology and Nanoscience International Conference, Berlin, Germany (10/23)
University of California, Riverside, Department of Chemistry (10/17)
University of California, San Diego, Department of Chemistry (10/05)
University of California, Irvine, Department of Chemistry (10/04)
U.S. DOE LED R&D Roundtable Meeting, Washington D.C. (09/11)
Nippon Chemical Industrial Company, Tokyo, Japan (09/05)
Cabot Microelectronics, Aurora, IL (08/27)
City College of New York, Department of Chemistry (04/23)

-2017-

Princeton University, Department of Chemistry (09/22)
FQDots, Barcelona, Spain (09/08)
U.S. DOE LED R&D Roundtable Meeting, Washington D.C. (08/31)
CECAM Workshop, *Building links between experiments and computer simulations of crystallisation*, Laussane, Switzerland (07/13)
Department of Energy, Solid State Lighting R&D Workshop (02/01)

INVITED LECTURES (CONTINUED)

-2017-

American Chemical Society National Meeting, San Francisco, CA -
Nanoscale Materials: Structure and Function in 0, 1, and 2 Dimensions (04/4)

-2016-

Kloss Lecture, University of Chicago, Department of Chemistry (11/18)
Brown University, Department of Chemistry (10/13)
University of California – Berkeley, Department of Chemistry (10/04)
Department of Energy BES/EERE Roundtable on Solid State Lighting (09/14)
Quantum Materials Corporation (08/01)
Gordon Research Conference, Organometallic Chemistry (07/13)
École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris, Physics and
Materials Science Laboratory (06/13, 06/20, 06/27)
Nanosys Incorporated (05/19)
Carnegie Mellon University, Department of Chemistry (05/05)
University of California - Los Angeles, Department of Chemistry (4/27)
American Chemical Society National Meeting, Award Symposium, San Diego, CA (03/14)
2016 Department of Energy Solid State Lighting R&D Workshop (02/03)

-2015-

ETH Zurich, Phonsi International Training Network (09/30)
Molecular Foundry User Meeting (08/21)
American Chemical Society National Meeting, Boston, MA - *High Energy Organometallics*
(08/16-20)
20th American Conference on Crystal Growth and Epitaxy, Big Sky, MT - *Nanocrystals,
Quantum Dots, and Nanowires* (08/2–7)
Institut des Sciences Appliquées, Laboratoire de Physique et Chimie des Nano-Objets
Toulouse, France (07/09)
École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris, Physics and
Materials Science Laboratory (07/06)
Université Paris Sud, Laboratoire de Physique des Solides, Paris, France (07/03)
University of Iowa, Department of Chemistry, (04/17)
Materials Research Society Spring Meeting, San Francisco, CA - *From Molecules to Colloidal
Compound Semiconductor Nanocrystals - Advances in Mechanism Enabled Design and
Synthesis* (04/6-10)
American Chemical Society National Meeting, Denver, CO - *Soluble Inorganic Semiconductors,
Synthesis, Properties, and Applications* (03/22-26)
Cornell, Department of Chemistry (02/12)
MIT, Department of Chemistry (02/11)
Michigan State University, Department of Chemistry (02/05)
Yale University, Department of Chemistry (01/12)

-2014-

Columbia University, Department of Chemistry (11/13)
Pacific Light Technologies, Portland, Oregon (11/3)
University of California, Berkeley, Department of Chemistry (10/31)

INVITED LECTURES (CONTINUED)

Kinestral Technologies, South San Francisco, CA (10/30)
International Conference on Fundamental Processes in Semiconductor Nanocrystals, Oxford,
United Kingdom (09/09)
American Chemical Society National Meeting, San Francisco, CA
Control, Characterization, and Impact of Nanocrystal Surface Chemistry (08/13)
American Chemical Society National Meeting, San Francisco, CA
Organometallic Chemistry, *The New Frontiers* (08/11)
Gordon Research Conference, Colloidal Semiconductor Nanocrystals (07/20)
Department of Energy, Materials Chemistry Principle Investigator Meeting (07/15)
Ghent University, Belgium - workshop on the fundamental chemistry and physics of
semiconductor nanocrystals:
Fundamentals of Colloidal Synthesis (06/02)
Fundamentals of Nanocrystal Coordination Chemistry (06/03)
University of Southern California - Department of Chemistry (04/29)
California Institute of Technology - Department of Chemistry (04/28)
Northwestern University - Energy Frontier Research Center (04/03)
University of Wisconsin, Madison - Department of Chemistry (04/02)
Quantum Dot Tutorial, Phosphor Global Summit, San Diego, CA (03/26)
American Chemical Society National Meeting, Dallas, TX – Undergraduate Research
Symposium, Division of Chemical Education (03/16)
American Chemical Society National Meeting, Dallas, TX - *Nanomaterials for Energy Capture,
Conversion, and Storage* (03/16)
Indiana University - Department of Chemistry (02/25)
University of Washington, Seattle - Department of Chemistry (02/11)
University of Washington, Seattle - Department of Materials Science (02/10)
Kinestral Technologies - Consulting Visit (02/04)
University of Illinois, Urbana-Champaign - Department of Chemistry (01/21)
Washington University, St. Louis - Department of Chemistry (01/21)

-2013-

University of Toronto - Department of Chemistry (12/05)
University of Pittsburgh - Department of Chemistry (11/14)
University of Colorado, Boulder - Department of Chemistry (11/04)
Pennsylvania State University, State College - Department of Chemistry (09/26)
University of Connecticut, Department of Chemistry (09/12)
Pacific Light Technologies, Portland, OR (08/29)
Nanosys, Milpitas, CA (08/28)
3rd International Conference on Semiconductor Sensitized and Quantum Dot Solar Cells,
Granada, Spain (06/10)
ETH Zurich - Department of Chemistry (06/04)
Italian Institute of Technology, Genoa, Italy (06/06)
European Materials Research Society, Strasbourg, France (05/29)
University of Rochester - Department of Chemistry, (04/18)
National Renewable Energy Lab, Golden, CO (04/19)
Colorado School of Mines, Golden, CO - Department of Chemistry (11/01)

INVITED LECTURES (CONTINUED)

-2013-

American Chemical Society National Meeting, New Orleans, LA - Award Symposium for Theodore Agapie (04/08)
Phosphor Global Summit, New Orleans, LA (03/19)

-2012-

Georgia Tech - Department of Chemistry (02/21)
University of Pennsylvania - Department of Chemistry (02/04)
DuPont Corporation (02/01)
Janelia Farm, Voltage Imaging Workshop, Ashburn, VA (11/07)
American Chemical Society, Regional Meeting, New York, NY (09/14)
American Chemical Society, National Meeting, Philadelphia, PA - Young Investigator Symposium (08/20)
Harlem Children Society, Harlem, NY (08/13)
Naval Research Lab (07/19)
Gordon Research Conference, Inorganic Chemistry (06/21)

-2011-

QD Vision Incorporated (11/02)
The University of Texas, Austin - Energy Frontier Research Center (11/16)

-2010-

The University of Chicago - Department of Chemistry (11/15)

-2010-

The University of Minnesota - Minnesota Nanotechnology Conference (10/07)

-2009-

Barnard College - Department of Chemistry (11/20)
Symyx Symposium on High Throughput Technology (05/12)

LECTURE COURSES TAUGHT AT COLUMBIA UNIVERSITY

Spring 2021	G4071: "Inorganic Chemistry" Instructor quality rating: NA Overall course rating: NA	Enrollment: 31
Spring 2020	G8130: "The Chemistry of Nanocrystals" Instructor quality rating: NA Overall course rating: NA	Enrollment: 13
Spring 2018	G8130: "The Chemistry of Nanocrystals" Instructor quality rating: (response rate too low to be released) Overall course rating: (response rate too low to be released)	Enrollment: 8
Fall 2017	G4071: "Inorganic Chemistry" Instructor quality rating: 4.0/5 Overall course rating: 3.6/5	Enrollment: 29
Spring 2016	G8130: "The Chemistry of Nanocrystals" Instructor quality rating: 4.50/5 Overall course rating: 4.83/5	Enrollment: 6
Fall 2015	C1403: "General Chemistry" Instructor quality rating: 3.90/5 Overall course rating: 3.48/5	Enrollment: 189
Fall 2014	G4071: "Inorganic Chemistry" Instructor quality rating: 4.59/5 Overall course rating: 4.68/5	Enrollment: 29
Fall 2013	G4071: "Inorganic Chemistry" Instructor quality rating: 1.36/5 Overall course rating: 1.64/5 <i>(In Fall 2013 the rating scale was: 1 = excellent, 5 = poor)</i>	Enrollment: 29
Spring 2013	G8130: "The Chemistry of Nanocrystals" Instructor quality rating: 4.74/5 Overall course rating: 4.60/5	Enrollment: 8
Fall 2012	G4103: "Adv. Inorganic Chemistry" Instructor quality rating: 4.93/5 Overall course rating: 4.82/5	Enrollment: 13
Spring 2012	G3071: "Intro. to Inorganic Chemistry" Instructor quality rating: 4.88/5 Overall course rating: 4.44/5	Enrollment: 30
Fall 2011	G4103: "Adv. Inorganic Chemistry" Instructor quality rating: 4.13/5 Overall course rating: 3.96/5	Enrollment: 18
Spring 2011	G8130: "The Chemistry of Nanocrystals" Instructor quality rating: 3.76/5 Overall course rating: 3.73/5	Enrollment: 12
Fall 2010	G4103: "Adv. Inorganic Chemistry" Instructor quality rating: 4.20/5 Overall course rating: 4.11/5	Enrollment: 30
Spring 2010	G3071: "Intro. to Inorganic Chemistry" Instructor quality rating: 4.44/5 Overall course rating: 4.24/5	Enrollment: 17
Fall 2009	G8130: "The Chemistry of Nanocrystals" Instructor quality rating: 3.92/5 Overall course rating: 4.03/5	Enrollment: 9

STUDENTS MENTORED

Graduate Students

Bereket Zakarias		2020 – present
Natalie Saenz		2017 – present
Ellie Bennett		2016 – present
Brandon McMurtry		2016 – present
Dr. Matthew Greenberg		2015 – 2020
Dr. Trevor Hull		2014 – 2019
Dr. Iva Rreza		2014 – 2019
Prof. Leslie Hamachi	Cal Poly, San Luis Obispo	2013 – 2018
Dr. Michael Campos	ARPA-e	2012 – 2017
Dr. Peter Chen	Osram Opto Semiconductors, Portland, OR	2012 – 2017
Dr. Alexander Beecher	McKinsey & Co.	2011 – 2016
Prof. Mark Hendricks	Whitman College, Dept. of Chemistry	2010 – 2015
Dr. Zachariah Norman	Lockheed Martin, Boston	2010 – 2015
Suk ho Hong		2013 – 2015
Dr. Nicholas C. Anderson	HEE Solar, Dallas, TX	2009 – 2014
Dr. Ava Krieder-Mueller	Clemson University, Lecturer	2009 – 2014
Dr. Michael Clark	Bloomberg Terminal	2009 – 2012
Colin Cunningham		2010 – 2012

Postdoctoral Researchers

Dr. James Shanahan		2020 – present
Dr. Abraham Jordan		2019 – present
Dr. Daniel DeRosha		2019 – present
Dr. Anindya Swarnakar	Digital Specialty Chemicals, Toronto Canada	2017 – 2018
Prof. Jonathan De Roo	Gent University Belgium	2016 – 2018
Dr. Wieteke de Boer	NWO, Netherlands	2014 – 2017
Dr. Ilan Jen-LaPlante	Nanosys, Milpitas, CA	2014 – 2016
Dr. Octavi Semonin	Alta Devices, Sunneyvale, CA	2012 – 2016
Dr. Evelyn Auyeung	Dow Chemical, Midland, MI	2014 – 2015
Prof. Joshua J. Choi	University of Virginia, Dept. of Chemical Engineering	2012 – 2014
Prof. Abraham Wolcott	San Jose State University, Dept. of Chemistry	2011 – 2013
Prof. Brandi Cossairt	University of Washington, Dept. of Chemistry	2010 – 2012

Undergraduate Students

Leslie Castro (CC '21)		2020 – present
Anna Wollock (Barnard '22)		2020 – present
Kevin Qian	MIT, Chemistry	2016 – 2020
Eric Riesel	Northwestern University, Chemistry	2016 – 2019
Kate Gordon (REU student)		2018, 2019
Joseph Teglassi		2018 – 2019
Christian Joseph		2018 – 2019
Matt Bowers		2017
Victor Gordillo		2015 – 2017
Aidan Graham	Pacific Light Technologies	2014 – 2016
Michele Myong	NSF GRF, Northwestern Univ., Chemistry	2014 – 2016
Greg Cleveland	NSF GRF, MIT, Chemistry	2013 – 2016
Helen Yang		2013 – 2015
Rajat Chandra		2015
Ian Covert		2014 – 2015

STUDENTS MENTORED (CONTINUED)

Undergraduate Students

Robert Swain	University of Toulouse, Chemistry	2013 – 2015
Bert Vancura	Columbia Univ., Medical School	2012 – 2015
Rebecca Siegelman	UC Berkeley, Chemistry	2011 – 2014
Rena Chen	Rice University, Chemistry	2012 – 2013
Long Tran		2012 – 2013
Aya Buckley	UC Berkeley, Chemistry	2010 – 2013
Zach Brille	UC Berkeley, Chemistry	Spring 2011
Jason Pfluegger	UC Berkeley, Chemistry	Spring 2010
Louise Stewart		2009 – 2010
Ivy Fortmeyer	Princeton, Chemistry	2009 – 2010

PROFESSIONAL SERVICE

Columbia University Service

Columbia University Committee on Scientific Instruction (2020 – present)
Department of Chemistry Graduate Committee (2020 – present)
Department of Chemistry Space and Services Committee (2019 – present)
Faculty Liason to the National Academy of Sciences, Engineering, and Medicine's Action Collaborative on Sexual Harassment (2019 – present)
Department of Chemistry Diversity and Inclusion Committee (2019 – present)
Sponsor, Chemical Synthesis Symposium, Department of Chemistry (2010 – present)
Department of Chemistry Faculty Search Committee (2016 – present)
Department of Chemistry Space and Services Committee (2018 – present)
Columbia Nanoinitiative, Shared Facilities and e-Microscopy Committees (2015 – present)
Luis Avila, 8th Year Review Committee (10/2016 – 02/2017)
University Committee on Scientific Instruction (2015 – 2016)
Graduate Committee, Department of Chemistry (2013 – 2016)
Undergraduate Committee, Department of Chemistry (2011 – 2013)
Rabi Scholars Selection Committee, Columbia University (2012)
Graduate Admissions Committee, Department of Chemistry (2009 – 2013)
Safety Committee, Department of Chemistry (2009 – 2011)

Conference Organization and Editorial Service

American Conference on Crystal Growth and Epitaxy (August 2-4, 2021)
QD Forum, (2017 - present)
Nanoge, Berlin 2019, *Fundamental Processes in Semiconductor Nanocrystals*, (2018 – present)
Guest Editor, *Chemical Communications*, Special Issue (2011– 2012)
Guest Editor, *Chemistry of Materials*, Special Issue (2011 – 2012)
Book Proposal Reviewer, Elsevier (2014, 2015)
Symposium Organizer, Division of Inorganic Chemistry, American Chemical Society National Meeting, San Francisco, CA - “The Chemistry of Inorganic Nanocrystals and Clusters: Structural Characterization and Mechanisms of Growth” (08/2014)

PROFESSIONAL SERVICE (CONTINUED)

Grant Reviewer

Netherlands Organization for Scientific Research

United States-Israel Binational Science Foundation

National Science Foundation: DMR-EPM and MSN Panel Reviewer

American Chemical Society, Petroleum Research Fund

Department of Energy, Basic Energy Sciences, SLAC, LBNL-MoFo

Molecular Foundry, Lawrence Berkeley National Laboratory, User Proposals

Instituut voor de Aanmoediging van Innovatie door Wetenschap en Technologie in Vlaandere