

DANIEL R. GAMELIN

*Nicole A. Boand Endowed Chair Professor of Chemistry
Director, UW Molecular Engineering Materials Center
Co-Founder, BlueDot Photonics Inc.*

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EDUCATION AND PROFESSIONAL EXPERIENCE

University of Washington

Assistant → Associate → Full Professor

Nicole A. Boand Endowed Chair

Director, UW Molecular Engineering Materials Center (NSF MRSEC)

Harry and Catherine Jayne Boand Endowed Professor

Synthesis and physical properties of semiconductor nanostructures

University of Bern

Postdoctoral Research Fellow (w/Prof. H. U. Güdel)

Photophysics of luminescent solid-state inorganic materials

Stanford University

Doctor of Philosophy (w/Prof. E. I. Solomon)

*Electronic structure studies of transition-metal dimers relevant to
biological electron transfer and catalysis*

Max-Planck-Institut für Strahlenchemie

Predocutorial Research Fellow (w/Profs. F.-W. Grevels, K. Schaffner)

Time-resolved IR and Raman spectroscopies of excited states

Reed College

Bachelor of Arts in Chemistry (Thesis advisor: Prof. D. P. Gerrity)

Resonance Raman studies of group VI transition-metal hexacarbonyls

Brandeis University

NSF-REU (Research advisor: Prof. I.-Y. Chan)

Luminescence of organic molecules in high-pressure diamond anvil cells

VISITING POSITIONS

Debye Institute for Nanomaterials Science, Utrecht University

Invited Visiting Professor (w/Prof. A. Meijerink)

Nanocrystal spectroscopies

University of Melbourne

Honorary Visiting Professor (w/Prof. P. Mulvaney)

Nanocrystals

Debye Institute for Nanomaterials Science, Utrecht University

Debye Chair Professor

Nanomaterials

Laboratory for Photonics and Interfaces, École Polytechnique Fédérale de Lausanne (EPFL)

Invited Visiting Professor (w/Prof. M. Grätzel)

Solar energy conversion

Seattle, WA

3/00→9/06→9/08

9/17–present

9/17–present

9/08–9/17

Bern, Switzerland

10/97–2/00

Stanford, CA

1998

Mülheim, Germany

8/90–7/91

Portland, OR

1990

Waltham, MA

1989

Utrecht,

Netherlands

5/15–7/15

Melbourne,

Australia

11/14–2/15

Utrecht,

Netherlands

5/13–7/13

Lausanne,

Switzerland

11/07–7/08

Center for Applied Photonics, University of Konstanz

Invited Visiting Professor (w/Profs. R. Bratschitsch, A. Leitenstorfer)

Ultrafast time-resolved Faraday rotation of colloidal quantum dots

Konstanz, Germany

9/07–10/07, 8/08

AWARDS AND HONORS

2020 Mercator Fellowship, Deutsche Forschungsgemeinschaft (DFG)

2020 Prins Lecturer, Syracuse University, Chemistry

2020 Lagow Lecturer, University of Texas, Austin, Chemistry

2019 James A. Ibers Lecturer in Inorganic Chemistry, Northwestern University, Chemistry

2018/2016, Chair/Vice Chair, Gordon Research Conference on Colloidal Semiconductor Nanocrystals

2018 Marple-Schweitzer Memorial Lectureship, Northwestern University, Chemistry

2017–2018 Harvard Chemistry/Chemical Biology Student-Invited Lecturer

2017–present, Nicole A. Boand Endowed Chair

2016 Fellow of the Royal Society of Chemistry

2016 Dunne Lecturer, Reed College

2015 Election to the Washington State Academy of Sciences

2015 ACS Inorganic Chemistry Lectureship Award

2015 Invited Visiting Professor, Debye Institute for Nanomaterials Science, Utrecht University

2014–2015, Honorary Visiting Professor, University of Melbourne, Nanocrystal and Nanomechanics Laboratory

2013 Debye Chair Professor, Debye Institute for Nanomaterials Science, Utrecht University

2013 Jonathan L. Sessler Distinguished Alumni Lecturer, Stanford University, Chemistry

2012 ACS Inorganic Nanoscience Award

2012 Fellow of the American Association for the Advancement of Science (AAAS)

2011–2012 Dalton Lecturer (Americas) in Inorganic Chemistry, presented at U.C. Berkeley

2011 Scialog Fellow of the Research Corporation

2009 Senior Fellow of the Zukunftskolleg, University of Konstanz

2008–2017, Harry and Catherine Jayne Boand Endowed Professor of Chemistry

2008 Ornstein Colloquium Lecturer, Utrecht University

2007–2008, Invited Visiting Professor, École Polytechnique Fédérale de Lausanne (EPFL), Laboratory for Photonics and Interfaces

2007–2008, Invited Visiting Professor, University of Konstanz, Institute for Applied Photonics

2007 Cherry Emerson Lecturer, Georgia Tech, Chemistry

2006 Distinguished Teaching Award, UW, Chemistry

2006 Alfred P. Sloan Research Fellowship, Sloan Foundation

2005 Camille Dreyfus Teacher-Scholar Award, Dreyfus Foundation

2005 Dow Lecturer in Inorganic Chemistry, Caltech

2003 Presidential Early Career Award for Scientists and Engineers (PECASE)

2003 Cottrell Scholar Award, Research Corporation

2003 Faculty Early Career Development Award (CAREER), National Science Foundation

2002 Research Innovation Award, Research Corporation

1995 Franklin Veatch Memorial Fellowship Award for excellence in graduate research, Stanford University, Chemistry

1990 Deutscher Akademischer Austauschdienst (DAAD) fellowship for predoctoral research, Max-Planck-Institut für Strahlenchemie

1989 NSF-REU Awardee, Brandeis University, Chemistry

PUBLICATIONS

([Google Scholar](#): *h index* ~ 76; *i10 index* ~ 191; *average citations/pub* > 100)

218. "Moiré Trions in MoSe₂/WSe₂ Heterobilayers." Wang, X.; Zhu, J.; Seyler, K.; Rivera, P.; Zheng, H.-Y.; Wang, Y.; He, M.; Taniguchi, T.; Watanabe, K.; Yan, J.; Mandrus, D. G.; Gamelin, D. R.; Yao, W.; Xu, X., *Nature Nanotech.*, **2021**, *in press* (<https://doi.org/10.1038/s41565-021-00969-2>).
219. "Tunable Band-Edge Potentials and Charge Storage in Colloidal Tin-Doped Indium-Oxide (ITO) Nanocrystals." Araujo, J. J.; Brozek, C. K.; Liu, H.; Merkulova, A.; Li, X.; Gamelin, D. R., *ACS Nano*, **2021**, *in press* (DOI: 10.1021/acsnano.1c04660)
218. "Orientation of Individual Anisotropic Nanocrystals Identified by Polarization Fingerprint." Lorenz, S.; Bieniek, J.; Erickson, C. S.; Gamelin, D. R.; Fainblat, R.; Bacher, G., *ACS Nano*, **2021**, *15*, 13579–13590.
217. "Laser Refrigeration of Yb³⁺:LuLiF₄/Silicon-Nitride Composite Nanostructures." Dobretsova, E. A.; Xia, X.; Pant, A.; Lim, M. B.; De Siena, M. C.; Boldyrev, K. N.; Molchanova, A. D.; Novikova, N. N.; Klimin, S. A.; Popova, M. N.; Chen, Y.; Majumdar, A.; Gamelin, D. R.; Pauzauskie, P. J., *Laser Photonics Rev.*, **2021**, 2100019.
216. "State of the Art and Prospects of Halide Perovskite Nanocrystals." Dey, A.; Ye, J.; De, A.; Debroye, E.; Ha, S. K.; Kshirsagar, A. S.; Bladt, E.; Wang, Z.; Yin, J.; Wang, Y.; Quan, L. N.; Fei, Y.; Gao, M.; Li, X.; Cao, M.; Debnath, T.; Scheel, M. A.; Shamsi, J.; Kumar, S.; Steele, J. A.; Gerhard, M.; Chouhan, L.; Xu, K.; Wu, X.-G.; Li, Y.; Zhang, Y.; Dutta, A.; Han, C.; Vincon, I.; Rogach, A. L.; Nag, A.; Samanta, A.; Korgel, B. A.; Shih, C.-J.; Gamelin, D. R.; Son, D. H.; Zeng, H.; Zhong, H.; Sun, H.; Demir, H. V.; Scheblykin, I. G.; Mora-Seró, I.; Zhang, J. Z.; Feldmann, J.; Hofkens, J.; Luther, J. M.; Pérez-Prieto, J.; Li, L.; Manna, L.; Bodnarchuk, M. I.; Kovalenko, M. V.; Roeffaers, M. B. J.; Pradhan, N.; Mohammed, O. F.; Bakr, O. M.; Yang, P.; Müller-Buschbaum, P.; Kamat, P. V.; Zhang, Q.; Krahn, R.; Galian, R. E.; Stranks, S. D.; Bals, S.; Biju, V.; Bao, Q.; Tisdale, W. A.; Yan, Y.; Hoye, R. L. Z.; Polavarapu, L., *ACS Nano*, **2021**, *15*, 10775–10981.
215. "Hydrothermal Synthesis and Solid-State Laser Refrigeration of Ytterbium-Doped Potassium Lutetium Fluoride (KLF) Microcrystals." Xia, X.; Pant, A.; Zhou, X.; Dobretsova, E. A.; Bard, A. B.; Lim, M. B.; Roh, J. Y. D.; Gamelin, D. R.; Pauzauskie, P. J., *Chem. Mater.*, **2021**, *33*, 4417–4424.
214. "Modular Zwitterion-Functionalized Poly(Isopropyl Methacrylate) Polymers for Hosting Luminescent Lead-Halide Perovskite Nanocrystals." Cohen, T. A.; Huang, Y.; Milstein, T. J.; Mackenzie, J. D.; Luscombe, C. K.; Gamelin, D. R., *Chem. Mater.*, **2021**, *33*, 3779–3790.
213. "The impact of ²H_{9/2} → ⁴I_{13/2} Emission from Er³⁺ Ions on Ratiometric Optical Temperature Sensing with Yb³⁺/Er³⁺ Co-Doped Upconversion Materials." Xia, X.; Volpi, A.; Roh, J. Y. D.; De Siena, M. C.; Gamelin, D. R.; Hehlen, M.; Pauzauskie, P. J., *J. Lumin.*, **2021**, *236*, 118006.
212. "Highly Anisotropic Excitons and Multiple Phonon Bound States in a Van der Waals Antiferromagnetic Insulator." Hwangbo, K.; Zhang, Q.; Jiang, Q.; Wang, Y.; Fonseca, J.; Wang, C.; Diederich, G. M.; Gamelin, D. R.; Xiao, D.; Chu, J.-H.; Yao, W.; Xu, X., *Nature Nanotech.*, **2021**, *16*, 655–660.

211. "Highly Luminescent and Catalytically Active Suprastructures of Magic-Sized Semiconductor Nanoclusters." Baek, W.; Bootharaju, M. S.; Walsh, K. M.; Lee, S.; Gamelin, D. R.; Hyeon, T., *Nature Materials*, **2021**, *20*, 650–657.
210. "Coherent Spin Precession and Lifetime-Limited Spin Dephasing in CsPbBr₃ Perovskite Nanocrystals." Crane, M. J.; Jacoby, L. M.; Cohen, T. A.; Huang, Y.; Luscombe, C. K.; Gamelin, D. R., *Nano Lett.*, **2020**, *20*, 8626–8633.
209. "Yb³⁺ Speciation and Energy-Transfer Dynamics in Quantum-Cutting Yb³⁺-Doped CsPbCl₃ Perovskite Nanocrystals and Single Crystals." Roh, J. Y. D.; Smith, M. D.; Crane, M. J.; Biner, D.; Milstein, T. J.; Krämer, K. W.; Gamelin, D. R., *Phys. Rev. Mater.*, **2020**, *4*, 105405.
208. "Insight into the Spin Properties in Undoped and Mn-doped CdSe/CdS Seeded Nanorods by Optically Detected Magnetic Resonance." Dehnel, J.; Barak, Y.; Meir, I.; Budniak, A. K.; Nagvenkar, A.; Gamelin, D. R.; Lifshitz, E., *ACS Nano*, **2020**, *14*, 13478–13490.
207. "Using Redox Titrations to Probe the Role of Trivalent Impurity Ions in the Ferromagnetism of Colloidal EuS Nanocrystals." De Siena, M. C.; Rachkov, A. G.; Fainblat, R.; James, D.; Creutz, S. E.; Stoll, S. L.; Gamelin, D. R., *Chem. Mater.*, **2020**, *32*, 8633–8640.
206. "Electron Beam Infrared Nano-Ellipsometry of Individual Indium Tin Oxide Nanocrystals." Olafsson, A.; Busche, J. A.; Araujo, J. J.; Maiti, A.; Idrobo, J. C.; Gamelin, D. R.; Masiello, D. J.; Camden, J. P., *Nano Lett.*, **2020**, *20*, 7987–7994.
205. "Ray-Tracing Analysis of Module-Level Power Generation from Quantum-Cutting Ytterbium-Doped Lead-Halide Perovskites." Kroupa, D. M.; Crane, M. J.; Silvia, J. S.; Gamelin, D. R., *Proc. IEEE 47th Photovoltaics Specialists Conference (PVSC)*, **2020**, 0868–0874.
204. "Synthesis and Spectroscopy of Emissive, Surface-Modified, Copper-Doped Indium Phosphide Nanocrystals." Mundy, M. E.; Eagle, F. W.; Hughes, K. E.; Gamelin, D. R.; Cossairt, B. M., *ACS Mater. Lett.*, **2020**, *2*, 576–581.
203. "Giant Band Splittings in EuS and EuSe Magnetic Semiconductor Nanocrystals." Asuigui, D. R. C.; De Siena, M. C.; Fainblat, R.; James, D.; Gamelin, D. R.; Stoll, S. L., *Chem. Commun.*, **2020**, *56*, 5843–5846.
202. "Measuring Equilibrium Binding at Quantum Dot Surfaces using Cyclic Voltammetry." Henckel, D. A.; Enright, M. J.; Eslami, N. P.; Kroupa, D. M.; Gamelin, D. R.; Cossairt, B. M., *Nano Lett.*, **2020**, *20*, 2620–2624.
201. "2D van der Waals Nanoplatelets with Robust Ferromagnetism." De Siena, M. C.; Creutz, S. E.; Regan, A.; Malinowski, P.; Jiang, Q.; Kluherz, K. T.; Zhu, G.; Lin, Z.; De Yoreo, J. J.; Xu, X.; Chu, J.-H.; Gamelin, D. R., *Nano Lett.*, **2020**, *in press* (DOI: 10.1021/acs.nanolett.0c00102).
200. "Directed Exciton Magnetic Polaron Formation in a Single Colloidal Mn²⁺:CdSe/CdS Quantum Dot." Lorenz, S.; Erickson, C.; Riesner, M.; Gamelin, D. R.; Fainblat, R.; Bacher, G., *Nano Lett.*, **2020**, *in press* (DOI: 10.1021/acs.nanolett.9b05136).
199. "Theoretical Investigation of the Rashba Effect in Quantum-Confined ZnO Semiconductor Nanocrystals." Kasper, J. M.; Gamelin, D. R.; Li, X., *J. Chem. Phys.*, **2020**, *152*, 014308.
198. "Effects of Surface Chemistry on the Photophysics of Colloidal InP Nanocrystals." Hughes, K. E.; Stein, J. L.; Friedfeld, M. R.; Cossairt, B. M.; Gamelin, D. R., *ACS Nano*, **2019**, *13*, 14198–14207.
197. "Single-Source Flash Sublimation of Metal-Halide Semiconductors." Kroupa, D. M.; Crane, M. J.; Gamelin, D. R., *Proc. SPIE*, **2019**, 11084-0J.

196. "Spinodal Decomposition During Anion Exchange in Colloidal Mn^{2+} -Doped CsPbX_3 ($X = \text{Cl}, \text{Br}$) Perovskite Nanocrystals." De Siena, M. C.; Sommer, D. E.; Creutz, S. E.; Dunham, S. T.; Gamelin, D. R., *Chem. Mater.*, **2019**, *31*, 7711–7722.
195. "Structural Diversity in Cesium-Bismuth-Halide Nanocrystals." Creutz, S. E.; Liu, H.; Kaiser, M. E.; Li, X.; Gamelin, D. R., *Chem. Mater.*, **2019**, *31*, 4685–4697.
194. "Detailed-Balance Analysis of Yb^{3+} : $\text{CsPb}(\text{Cl}_{1-x}\text{Br}_x)_3$ Quantum-Cutting Layers for High-Efficiency Photovoltaics under Real-World Conditions." Crane, M. J.; Kroupa, D. M.; Gamelin, D. R., *Energy Environ. Sci.*, **2019**, *12*, 2486–2495.
193. "Single-Source Vapor Deposition of Quantum-Cutting Yb^{3+} : $\text{CsPb}(\text{Cl}_{1-x}\text{Br}_x)_3$ and Other Complex Metal-Halide Perovskites." Crane, M. J.; Kroupa, D. M.; Roh, J. Y.; Anderson, R.; Smith, M. D.; Gamelin, D. R., *ACS Appl. Energy Mater.*, **2019**, *2*, 4560–4565.
192. "Photoluminescence Saturation in Quantum-Cutting Yb^{3+} -Doped $\text{CsPb}(\text{Cl}_{1-x}\text{Br}_x)_3$ Perovskite Nanocrystals: Implications for Solar Downconversion." Erickson, C. S.; Crane, M. J.; Milstein, T. J.; Gamelin, D. R., *J. Phys. Chem. C*, **2019**, *123*, 12474–12484.
191. "Quantum-Cutting Yb^{3+} -Doped Perovskite Nanocrystals for Monolithic Bilayer Luminescent Solar Concentrators." Cohen, T. A.; Milstein, T. J.; Kroupa, D. M.; Mackenzie, J. D.; Luscombe, C. K.; Gamelin, D. R., *J. Mater. Chem. A*, **2019**, *7*, 9279–9288.
190. "Anion Exchange and the Quantum-Cutting Energy Threshold in Ytterbium-Doped $\text{CsPb}(\text{Cl}_{1-x}\text{Br}_x)_3$ Perovskite Nanocrystals." Milstein, T. J.; Kluherz, K. T.; Kroupa, D. M.; Erickson, C. S.; De Yoreo, J. J.; Gamelin, D. R., *Nano Lett.*, **2019**, *19*, 1931–1937.
189. "Copper's Role in the Photoluminescence of CuInS_2 and $\text{Ag}_{1-x}\text{Cu}_x\text{InS}_2$ Nanocrystals, from Copper-Doped AgInS_2 ($x \sim 0$) to CuInS_2 ($x = 1$)." Hughes, K. E.; Ostheller, S. R.; Nelson, H. D.; Gamelin, D. R., *Nano Lett.*, **2019**, *19*, 1318–1325.
188. "Quantum-Cutting Ytterbium-Doped $\text{CsPb}(\text{Cl}_{1-x}\text{Br}_x)_3$ Perovskite Thin Films with Photoluminescence Quantum Yields over 190%." Kroupa, D. M.; Roh, J. Y.; Milstein, T. J.; Creutz, S. E.; Gamelin, D. R., *ACS Energy Lett.*, **2018**, *3*, 2390–2395.
187. "Valence-Band Electronic Structures of Cu^+ -Doped ZnS , Alloyed Cu-In-Zn-S , and Ternary CuInS_2 Nanocrystals: A Unified Description of Photoluminescence across Compositions." Nelson, H. D.; Gamelin, D. R., *J. Phys. Chem. C*, **2018**, *122*, 18124–18133.
186. "Anion Exchange in Cesium Lead Halide Perovskite Nanocrystals and Thin Films using Trimethylsilyl Halide Reagents." Creutz, S. E.; Crites, E. N.; De Siena, M. C.; Gamelin, D. R., *Chem. Mater.*, **2018**, *30*, 4887–4891.
185. "Activationless Multiple-Site Concerted Proton-Electron Tunneling." Bowring, M. A.; Bradshaw, L. R.; Parada, G. A.; Pollock, T. R.; Fernández-Terán, R. J.; Kolmar, S. S.; Schlenker, C. W.; Gamelin, D. R.; Mayer, J. M., *J. Am. Chem. Soc.*, **2018**, *140*, 7449–7452.
184. "Degenerately n -Doped Colloidal PbSe Quantum Dots: Band Assignments and Electrostatic Effects." Araujo, J. J.; Brozek, C. K.; Kroupa, D. M.; Gamelin, D. R., *Nano Lett.*, **2018**, *18*, 3893–3900.
183. "Picosecond Quantum Cutting Generates Photoluminescence Quantum Yields Over 100% in Ytterbium-Doped CsPbCl_3 Nanocrystals." Milstein, T. J.; Kroupa, D. M.; Gamelin, D. R., *Nano Lett.*, **2018**, *18*, 3792–3799.
182. "Soluble Supercapacitors: Charge Storage in Colloidal Iron-Doped ZnO Nanocrystals." Brozek, C. K.; Zhao, D.; Liu, H.; Li, X.; Kittilstved, K. R.; Gamelin, D. R., *Nano Lett.*, **2018**, *18*, 3297–3302.

181. "Copper-Coupled Electron Transfer in Colloidal Plasmonic Copper-Sulfide Nanocrystals Probed by *In Situ* Spectroelectrochemistry." Hartstein, K. H.; Brozek, C. K.; Hinterding, S. O. M.; Gamelin, D. R., *J. Am. Chem. Soc.*, **2018**, *140*, 3434–3442.
180. "Colloidal Nanocrystals of Lead-Free Double-Perovskite (Elpasolite) Semiconductors: Synthesis and Anion Exchange to Access New Materials." Creutz, S. E.; Crites, E. R.; De Siena, M. C.; Gamelin, D. R., *Nano Lett*, **2018**, *18*, 1118–1123.
179. "Photodoping and Transient Spectroscopies of Copper-Doped CdSe/CdS Nanocrystals." Hughes, K. E.; Hartstein, K. H.; Gamelin, D.R., *ACS Nano*, **2018**, *12*, 718–728.
178. "A Hybrid Quantum-Classical Model of Electrostatics in Multiply Charged Quantum Dots." Liu, H.; Brozek, C. K.; Sun, S.; Lingerfelt, D. B.; Gamelin, D. R.; Li, X., *J. Phys. Chem. C*, **2017**, *121*, 26086–26095.
177. "Electron Stability and Negative-Tetron Luminescence in Free-Standing Colloidal *n*-Type CdSe/CdS Quantum Dots." Hartstein, K. H.; Erickson, C. S.; Tsui, E. Y.; Marchioro, A.; Gamelin, D. R., *ACS Nano*, **2017**, *11*, 10430–10438.
176. "Single Magnetic Impurities in Colloidal Quantum Dots and Magic-Size Clusters." Fainblat, R.; Barrows, C. J.; Gamelin, D. R., *Chem. Mater.*, **2017**, *29*, 8023–8036.
175. "Photoluminescence Temperature Dependence, Dynamics, and Quantum Efficiencies in Mn²⁺-Doped CsPbCl₃ Perovskite Nanocrystals with Varied Dopant Concentration." Yuan, X.; Ji, S.; De Siena, M. C.; Fei, L.; Zhao, Z.; Wang, Y.; Li, H.; Zhao, J.; Gamelin, D. R., *Chem. Mater.*, **2017**, *29*, 8003–8011.
174. "Strong Dependence of Quantum-Dot Delayed Luminescence on Excitation Pulse Width." Marchioro, A.; Whitham, P. J.; Nelson, H. D.; De Siena, M. C.; Knowles, K. E.; Polinger, V.; Reid, P. J.; Gamelin, D. R., *J. Phys. Chem. Lett.*, **2017**, *8*, 3997–4003.
173. "A Selective Cation Exchange Strategy for the Synthesis of Colloidal Yb³⁺-Doped Chalcogenide Nanocrystals with Strong Broadband Visible Absorption and Long-Lived Near-IR Emission." Creutz, S. E.; Fainblat, R.; Kim, Y.; De Siena, M. C.; Gamelin, D. R., *J. Am. Chem. Soc.*, **2017**, *139*, 11814–11824.
172. "Current-Induced Magnetic Polarons in a Colloidal Quantum-Dot Device." Muckel, F.; Barrows, C. J.; Graf, A.; Schmitz, A.; Erickson, C. S.; Gamelin, D. R.; Bacher, G., *Nano Lett*, **2017**, *17*, 4768–4773.
171. "Excitonic Zeeman Splittings in Colloidal CdSe Quantum Dots Doped with Single Magnetic Impurities." Barrows, C. J.; Fainblat, R.; Gamelin, D. R., *J. Mater. Chem. C*, **2017**, *5*, 5232–5238.
170. "Mid-Gap States and Normal vs Inverted Bonding in Luminescent Cu⁺- and Ag⁺-Doped CdSe Nanocrystals." Nelson, H. D.; Hinterding, S. O. M.; Fainblat, R.; Creutz, S. E.; Li, X.; Gamelin, D. R., *J. Am. Chem. Soc.*, **2017**, *139*, 6411–6421.
169. "Cyclotron Splittings in the Plasmon Resonances of Electronically Doped Semiconductor Nanocrystals Probed by Magnetic Circular Dichroism Spectroscopy." Hartstein, K. H.; Schimpf, A. M.; Salvador, M.; Gamelin, D. R., *J. Phys. Chem. Lett.*, **2017**, *8*, 1831–1836.
168. "Extremely Slow Spontaneous Electron Trapping in Photodoped *n*-Type CdSe Nanocrystals." Tsui, E. Y.; Carroll, G. M.; Miller, B.; Marchioro, A.; Gamelin, D. R., *Chem. Mater.*, **2017**, *29*, 3754–3762.
167. "Analysis of Optical Losses in High-Efficiency CuInS₂-Based Nanocrystal Luminescent Solar Concentrators: Balancing Absorption vs Scattering." Sumner, R.; Eiselt, S.; Kilburn, T.

- B.; Erickson, C.; Carlson, B.; Gamelin, D. R.; McDowall, S.; Patrick, D. L., *J. Phys. Chem. C*, **2017**, *121*, 3252–3260.
166. "Enhanced Emission of Nanocrystal Solids Featuring Slowly Diffusive Excitons." Kholmicheva, N.; Razgoniaeva, N.; Yadav, P.; Lahey, A.; Erickson, C.; Moroz, P.; Gamelin, D. R.; Zamkov, M., *J. Phys. Chem. C*, **2017**, *121*, 1477–1487.
165. "Electrical Detection of Hot Carriers Generated in CdS Quantum Dot Solids via a Mn²⁺-Enhanced Auger Process." Barrows, C. J.; Rinehart, J. D.; Nagaoka, H.; de Quilletes, D.; Chen, J.; Ginger, D. S.; Gamelin, D. R., *J. Phys. Chem. Lett.*, **2017**, *8*, 126–130.
164. "Comment on "HgS and HgS/CdS Colloidal Quantum Dots with Infrared Intraband Transitions and Emergence of a Surface Plasmon." Thakkar, N.; Schimpf, A. M.; Gunthardt, C. E.; Gamelin, D. R.; Masiello, D. J., *J. Phys. Chem. C*, **2016**, *120*, 28900–28902.
163. "Tunneling in the Delayed Luminescence of Colloidal Semiconductor Nanocrystals, and Relationship to Blinking." Marchioro, A.; Whitham, P. J.; Knowles, K. E.; Kilburn, T. B.; Reid, P. J.; Gamelin, D. R., *J. Phys. Chem. C*, **2016**, *120*, 27040–27049.
162. "Spectroelectrochemical Measurement of Surface Electrostatic Contributions to Colloidal CdSe Nanocrystal Redox Potentials." Carroll, G. M.; Tsui, E. Y.; Brozek, C. K.; Gamelin, D. R., *Chem. Mater.*, **2016**, *28*, 7912–7918.
161. "One-Pot Synthesis of Monodisperse Colloidal Copper-Doped CdSe Nanocrystals Mediated by Ligand-Copper Interactions." Yang, L.; Knowles, K. E.; Gopalan, A.; Hughes, K. E.; James, M. C.; Gamelin, D. R., *Chem. Mater.*, **2016**, *28*, 7375–7384.
160. "Giant Excitonic Exchange Splittings at Zero Field in Single Colloidal CdSe Quantum Dots Doped With Individual Mn²⁺ Impurities." Fainblat, R.; Barrows, C. J.; Hopmann, E.; Siebeneicher, S.; Vlaskin, V. A.; Gamelin, D. R.; Bacher, G., *Nano Lett*, **2016**, *16*, 6371–6377.
159. "Kinetics of Isovalent (Cd²⁺) and Aliovalent (In³⁺) Cation Exchange in Cd_{1-x}Mn_xSe Nanocrystals." Chakraborty, P.; Barrows, C. J.; Jin, Y.; Dunham, S. T.; Gamelin, D. R., *J. Am. Chem. Soc.*, **2016**, *138*, 12885–12893.
158. "Selenium Redox Reactivity on Colloidal CdSe Quantum Dot Surfaces." Tsui, E. Y.; Hartstein, K. H.; Gamelin, D. R., *J. Am. Chem. Soc.*, **2016**, *138*, 11105–11108.
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TEACHER/SCHOLAR AWARDS

2006 Distinguished Teaching Award, UW, Chemistry Department
2005 Camille Dreyfus Teacher-Scholar Award, Dreyfus Foundation
2003 Cottrell Scholar Award, Research Corporation
2003 PECASE/CAREER Award, National Science Foundation

SELECT UNIVERSITY AND PROFESSIONAL SERVICE ACTIVITIES

Founding Director, UW Molecular Engineering Materials Center (NSF MRSEC) (2017–present)
Co-Founder, Chief Science Advisor, BlueDot Photonics, Inc. (2019–present)
Washington State Academy of Sciences, Membership Committee, Physical and Mathematical Sciences Section (2020–present)
Founding organizer, Nanocrystals Northwest conference (2019–present, biennial)
Pauling Award Selection Committee (2017–2019)
Chair/Vice Chair, GRC on Colloidal Semiconductor Nanocrystals (2018/2016)
Associate Editor, *Chemical Communications*, Royal Society of Chemistry (2010–present)
Editorial Board, *Journal of Luminescence*, Elsevier (2017–present)
Editorial Advisory Board member, *ACS Inorganic Chemistry* (2009–2011)
Editorial Advisory Board member, *ACS Catalysis* (2010–2011)
Chair, Nanoscience Subdivision, ACS Division of Inorganic Chemistry (2006–2007)
Steering Committee, Joint Institute of Nanoscience, University of Washington/Pacific Northwest National Laboratories (2004–2007)