MICHAEL D. MCGEHEE

EDUCATION

University of California at Santa Barbara
- Ph.D. in Materials Science (6/94-8/99)
  Advisor: Alan Heeger (Nobel Laureate in Chemistry)

Princeton University
- A.B. in Physics with high honors (9/90-6/94)

EMPLOYMENT, LEADERSHIP AND ADVISING POSITIONS

- James and Catherine Patten Chair in the College of Engineering and Applied Science at the University of Colorado Boulder (4/1/18-)
- Professor; Department of Chemical and Biological Engineering; University of Colorado at Boulder (4/1/18-)
- Fellow of RASEI (Renewable and Sustainable Energy Institute) (4/1/18-)
- Fellow and Associate Chair of Materials Science and Engineering at the University of Colorado Boulder (4/1/18-)
- Director of TEAMUP: Tandems for Efficient and Advanced Modules using Ultrastable Perovskites, a Department of Energy Consortium (4/1/23-)
- Cofounder and Chief Scientist of Tynt Technologies (8/20-)
- Jointly appointed at the National Renewable Energy Lab (4/1/18-)
- Courtesy Appointment in Physics at the University of Colorado Boulder (6/19-)
- Professor; Materials Science and Engineering; Stanford University (6/13-3/18)
- Associate Professor; Materials Science and Engineering; Stanford University (4/07 -5/13)
- Assistant Professor; Materials Science and Engineering; Stanford University (4/00-3/07)
- Director; Center for Advanced Molecular Photovoltaics (7/08-6/14)
- Associate Director; Center for Advanced Organic Photovoltaics (7/14-6/17)
- Senior Fellow; Precourt Institute for Energy (12/09-3/18)
- Vance D. & Arlene C. Coffman Faculty Scholar (9/07-8/11)
- Advisor to the Center for Energy Efficient Materials at UCSB (5/10-8/14)
- Advisor to Alta Resource Technologies (1/1/24-)
- Scientific Advisor to Aluminio (1/1/23-)
- Scientific Advisor to Swift Solar (1/19-)
- Scientific Advisor to Next Energy (9/12-7/22)
- Scientific Advisor to Sinovia (3/12-)
- Scientific Advisor to PLANT PV (11/11-1/19)
- Scientific Advisor to Unidyme (6/07-3/11)
- Scientific Advisor to Plextronics (6/07-12/15)

- Scientific Advisor to Nanosolar (6/02-6/13)
- Post-Doctoral Researcher; U.C. Santa Barbara (9/99-3/00) Advisors: Galen Stucky, Brad Chmelka

AWARDS

- Alan J. Heeger Lecturer at the University of California Santa Barbara (2024)
- Lemieux Lecturer at the University of Ottawa (2024)
- Winner of the Lab Venture Challenge at the University of Colorado (2020)
- Fellow of the Materials Research Society (April 2018)
- Thomas Reuters Highly Cited Scientist (since 2016)
- Kosuke Ishii Award for Industry Education Innovation (2012)
- Global Climate and Energy Project Distinguished Lecturer (2012)
- Ranked by Thomas Reuters as the materials scientist with the 11th highest scientific impact (102 citations/paper) in the world for the period between Jan 2000 and October 2010
- Mohr Davidow Venture Innovators Award (2007)
- Vance and Arlene Coffman Faculty Scholar Award (2007)
- Materials Research Society Outstanding Young Investigator Award (2007)
- Gilbreth Lecturer at the National Academy of Engineering's Meeting (2006)
- NSF CAREER Award (2001)
- DuPont Young Faculty Award (2001)
- Dreyfus New Faculty Award (2000)
- Materials Research Society Graduate Student Gold Medal Award (1999)
- Corning Foundation Fellowship (1998)
- Princeton Materials Institute's Most Outstanding Student Award (1994)

PUBLICATIONS IN REFEREED JOURNALS

1. "Why Perovskite Thermal Stress is Unaffected by Thin Contact Layers", Gabriel R McAndrews, Muneeza Ahmad, Boyu Guo, Samantha C Kaczaral, Aram Amassian, Nicholas Rolston, Michael D McGehee, *Advanced Energy Materials*, 14, 33, 2024/9, 2400764, doi.org/10.1002/aenm.202400764.
2. "Improved Ambient Stability of Inorganic Perovskite Films Through Reduction of Tensile Stress", Samantha Kaczaral, Gabriel McAndrews, Boyu Guo, Aram Amassian, Rebecca Belisle, Michael D McGehee, IEEE, 2024/6/9, 0448-0448, doi**:** 10.1109/PVSC57443.2024.10749198.
3. "Improved reverse bias stability in p–i–n perovskite solar cells with optimized hole transport materials and less reactive electrodes", Fangyuan Jiang, Yangwei Shi, Tanka R Rana, Daniel Morales, Isaac E Gould, Declan P McCarthy, Joel A Smith, M Greyson Christoforo, Muammer Y Yaman, Faiz Mandani, Tanguy Terlier, Hannah Contreras, Stephen Barlow, Aditya D Mohite, Henry J Snaith, Seth R Marder, J Devin MacKenzie, Michael D McGehee, David S Ginger, *Nature Energy,* 2024/8/7, 1-10, doi.org/10.1038/s41560-024-01600-z.

4. “Moisture Uptake Relaxes Stress in Metal Halide Perovskites at the Expense of Stability”, Gabriel R McAndrews, Boyu Guo, Samantha C Kaczaral, Karen Fukuda, Matteo RS Poma, Rebecca A Belisle, Aram Amassian, Michael D McGehee, *ACS Energy Letters,* 2024, 9, 8, 4153–4161. doi.org/10.1021/acsenergylett.4c01817.
5. “Stress Engineering for Mitigating Thermal Cycling Fatigue in Perovskite Photovoltaics”, Min Chen, Yifan Dong, Yi Zhang, Xiaopeng Zheng, Gabriel R McAndrews, Zhenghong Dai, Qi Jiang, Shuai You, Tuo Liu, Steven P Harvey, Kai Zhu, Vincent Oliveto, Alec Jackson, Robert Witteck, Lance M Wheeler, Nitin P Padture, Paul J Dyson, Michael D McGehee, Mohammad K Nazeeruddin, Matthew C Beard, Joseph M Luther, ACS Energy Lett. 2024, 9, 6, 2582–2589. doi.org/10.1021/acsenergylett.4c00988.
6. “Mini-modules made with monolithically integrated all-perovskite tandems”, Michael McGehee, Univ. of Colorado, Boulder, CO (United States), FTR DE-EE0008551, 2024/2/27, doi.org/10.2172/2315041.
7. “Inhibition of halide oxidation and deprotonation of organic cations with dimethylammonium formate for air-processed p–i–n perovskite solar cells”, Hongguang Meng, Kaitian Mao, Fengchun Cai, Kai Zhang, Shaojie Yuan, Tieqiang Li, Fangfang Cao, Zhenhuang Su, Zhengjie Zhu, Xingyu Feng, Wei Peng, Jiahang Xu, Yan Gao, Weiwei Chen, Chuanxiao Xiao, Xiaojun Wu, Michael D McGehee, Jixian Xu, *Nature Energy*, 2024/2/26, 1-12, doi.org/10.1038/s41560-024-01471-4.
8. “Nonaqueous electrolytes for reversible zinc electrodeposition for dynamic windows with excellent optical contrast and durability”, Nikhil C. Bhoumik, Desmond C. Madu, cheon Woo Moon, Lorenzo S. Arvisu, Michael D. McGehee, Christopher J. Barile, *Joule*, 2024/2/13. doi.org/10.1016/j.joule.2024.01.023.
9. “Vapor phase deposition of perovskite photovoltaics: short track to commercialization?” Tobias Abzieher, David T Moore, Marcel Roß, Steve Albrecht, Jared Silvia, Hairen Tan, Quentin Jeangros, Christophe Ballif, Maximilian T Hoerantner, Beom-Soo Kim, Henk J Bolink, Paul Pistor, Jan Christoph Goldschmidt, Yu-Hsien Chiang, Samuel D Stranks, Juliane Borchert, Michael D McGehee, Monica Morales-Masis, Jay B Patel, Annalisa Bruno, Ulrich W Paetzold, *Energy & Environmental Science, 17 ,* 2024/01/23, 1645-1663. doi.org/10.1039/d3ee03273f.
10. “Strategies to improve the mechanical robustness of metal halide perovskite solar cells”, Muzhi Li, Samuel Johnson, Lidon Gil-Escrig, Maayan Sohmer, Carlos A Figueroa Morales, Hongki Kim, Siraj Sidhik, Aditya Mohite, Xiwen Gong, Lioz Etgar, Henk J Bolink, Axel Palmstrom, Michael D McGehee, Nicholas Rolston, *Energy Advances*, 2024. DOI: 10.1039/D3YA00377A.
11. “In situ Stress Monitoring Reveals Tension and Wrinkling Evolutions during Halide Perovskite Film Formation”, Boyu Guo, Mihirsinh Chauhan, Nathaniel R Woodward, Gabriel R McAndrews, Gaurab J Thapa, Benjamin M Lefler, Ruipeng Li, Tonghui Wang, Kasra Darabi, Michael D McGehee, Aram Amassian, *ACS Energy Letters*, 9 2023/12/6, 75-84. doi.org/10.1021/acsenergylett.3c02079.
12. “Improved reproducibility of metal halide perovskite solar cells via automated gas quenching”, Samantha C Kaczaral, Daniel A Morales, Samuel W Schreiber, Daniel Martinez, Ashley M Conley, Randi Herath, Giles E Eperon, Joshua J Choi, Michael D McGehee, David T Moore, *APL Energy*, 1, 2023/12/1. doi.org/10.1063/5.0174396.

13. "How the dynamics of attachment to the substrate influence stress in metal halide perovskites", Gabriel R McAndrews, Boyu Guo, Daniel A Morales, Aram Amassian, Michael D McGehee, *APL Energy,* 1, 036110, 2023/12/1. doi.org/10.1063/5.0177697.
14. "Pulsed electrodeposition for dynamic windows based on reversible metal electrodeposition", Andrew L Yeang, Ziliang Li, Sarah Grunsfeld, Gabriel R McAndrews, Yuchun Cai, Christopher J Barile, Michael D McGehee, *Cell Reports Physical Science,* 4,11, 1660, 2023/11/15. doi.org/10.1016/j.xcrp.2023.101660.
15. "Improving the barrier properties of tin oxide in metal halide perovskite solar cells using ozone to enhance nucleation", Samuel A Johnson, Keith P White, Jinhui Tong, Shuai You, Artiom Magomedov, Bryon W Larson, Daniel Morales, Rosemary Bramante, Erin Dunphy, Robert Tirawat, Craig L Perkins, Jérémie Werner, Gabriella Lahti, Christian Velez, Michael F Toney, Kai Zhu, Michael D McGehee, Joseph J Berry, Axel F Palmstrom, *Joule,* 7, 12, 2873-2893. 2023/11/9. doi.org/10.1016/j.joule.2023.10.009.
16. "Tuning Film Stresses for Open-Air Processing of Stable Metal Halide Perovskites", Muneeza Ahmad, Carsen Cartledge, Gabriel McAndrews, Antonella Giuri, Michael D McGehee, Aurora Rizzo, Nicholas Rolston, *ACS Applied Materials & Interfaces,* 15, 44, 2023/10/30, 51117-51125. doi.org/10.1021/acsami.3c11151.
17. "Status report on emerging photovoltaics", Annick Anctil, Meghan N Beattie, Christopher Case, Aditya Chaudhary, Benjamin D Chrysler, Michael G Debije, Stephanie Essig, David K Ferry, Vivian E Ferry, Marina Freitag, Isaac Gould, Karin Hinzer, Harald Hoppe, Olle Inganäs, Lethy Krishnan Jagadamma, Min Hun Jee, Raymond K Kostuk, Daniel Kirk, Stephan Kube, Minyoung Lim, Joseph M Luther, Lorelle Mansfield, Michael D McGehee, Duong Nguyen Minh, Preeti Nain, Matthew O Reese, Angèle Reinders, Ifor DW Samuel, Wilfried van Sark, Hele Savin, Ian R Sellers, Sean E Shaheen, Zheng Tang, Fatima Toor, Ville Vähänissi, Ella Wassweiler, Emily L Warren, Vincent R Whiteside, Han Young Woo, Gang Xiong, Xitong Zhu, *Journal of Photonics for Energy*, 13, 4, 2023/10/1, 042301-042301. doi.org/10.1117/1.JPE.13.042301.
18. "Long-term operating stability in perovskite photovoltaics", Hongwei Zhu, Sam Teale, Muhammad Naufal Lintangpradipto, Suhas Mahesh, Bin Chen, Michael D McGehee, Edward H Sargent, Osman M Bakr, *Nature Reviews Materials*, 8 (2023/9) 569-586. doi.org/10.1038/s41578-023-00582-w.
19. "Architecture Optimization Dramatically Improves Reverse Bias Stability in Perovskite Solar Cells: A Role of Polymer Hole Transport Layers", Fangyuan Jiang, Yangwei Shi, Tanka R Rana, Daniel Morales, Isaac Gould, Declan P McCarthy, Joel Smith, Grey Christoforo, Hannah Contreras, Stephen Barlow, Aditya D Mohite, Henry Snaith, Seth R Marder, J Devin MacKenzie, Michael D McGehee, David S Ginger, arXiv preprint arXiv.2308.08084 https://doi.org/10.48550/arXiv.2308.08084
20. "Combined Stress Testing of Perovskite Solar Cells for Stable Operation in Space", Kaitlyn T VanSant, Ahmad R Kirmani, Jay B Patel, Laura E Crowe, David P Ostrowski, Brian M Wieliczka, Michael D McGehee, Laura T Schelhas, Joseph M Luther, Timothy J Peshek, Lyndsey McMillon-Brown, *ACS (Applied Energy Materials),* **Article ASAP** (2023) DOI: 10.1021/acsaem.2c03972.

21. "Co-deposition of hole-selective contact and absorber for improving the processability of perovskite solar cells", Xiaopeng Zheng, Zhen Li, Yi Zhang, Min Chen, Tuo Liu, Chuanxiao Xiao, Danpeng Gao, Jay B Patel, Darius Kuciauskas, Artiom Magomedov, Rebecca A Scheidt, Xiaoming Wang, Steven P Harvey, Zhenghong Dai, Chunlei Zhang, Daniel Morales, Henry Pruett, Brian M Wieliczka, Ahmad R Kirmani, Nitin P Padture, Kenneth R Graham, Yanfa Yan, Mohammad Khaja Nazeeruddin, Michael D McGehee, Zonglong Zhu, Joseph M Luther, *Nature Energy,* 8 (2023) 462–472 https://doi.org/10.1038/s41560-023-01227-6.
22. "A Sharp interface", Michael D McGehee, *Nature Energy*, 8 (2023) 224–225. doi.org/10.1038/s41560-023-01214-x.
23. "Reducing nonradiative recombination in perovskite solar cells with a porous insulator contact", Wei Peng, Kaitian Mao, Fengchun Cai, Hongguang Meng, Zhengjie Zhu, Tieqiang Li, Shaojie Yuan, Zijian Xu, Xingyu Feng, Jiahang Xu, Michael D McGehee, Jixian Xu, *Science*, 379, 6633, 2023/2/17, 683-690. doi.org/10.1126/science.ade3126.
24. "Understanding and Improving Mechanical Stability in Electrodeposited Cu and Bi for Dynamic Windows Based on Reversible Metal Electrodeposition", Gabriel R. McAndrews, Andrew L. Yeang, Yuchun Cai, Christopher J. Barile, Michael D. McGehee, *Advanced Energy Materials,* 13, 1, 2023, 2202843. doi.org/10.1002/aenm.202202843.
25. "Investigating Formate, Sulfate, and Halide Anions in Reversible Zinc Electrodeposition Dynamic Windows", Desmond C. Madu, Micah V. Lilo, Andrew A. Thompson, Hanqing Pan, Michael D. McGehee, and Christopher J. Barile**,** *ACS (Applied Materials & Interfaces),* 14, 42, 2022/10/7, 47810-47821. doi.org/10.1021/acsami.2c14893.
26. "Wettability Improvement of a Carbazole-Based Hole-Selective Monolayer for Reproducible Perovskite Solar Cells", Amran Al-Ashouri, Mantas Marčinskas, Ernestas Kasparavičius, Tadas Malinauskas, Axel Palmstrom, Vytautas Getautis, Steve Albrecht, Michael D. McGehee, and Artiom Magomedov**,** *ACS Energy Letters* 8, 2, 2023, 898-900. doi.org/10.1021/acsenergylett.2c02629.
27. "Gel polymer electrolyte for reversible metal electrodeposition dynamic windows enables dual-electrodes for faster switching and reflectivity control", Yuchun Cai, Tyler S. Hernandez, Andrew L. Yeang, Micael T. Strand, F. Max Yavitt, Eldho Abraham, and Michael D. McGehee, *Frontiers in Nanotechnology,* 4, 2022, 1083247'. doi.org/10.3389/fnano.2022.1083247.
28. "Carrier control in Sn–Pb perovskites via 2D cation engineering for all-perovskite tandem solar cells with improved efficiency and stability, " Jinhui Tong, Qi Jiang, Andrew J Ferguson, Axel F Palmstrom, Xiaoming Wang, Ji Hao, Sean P Dunfield, Amy E Louks, Steven P Harvey, Chongwen Li, Haipeng Lu, Ryan M France, Samuel A Johnson, Fei Zhang, Mengjin Yang, John F Geisz, Michael D McGehee, Matthew C Beard, Yanfa Yan, Darius Kuciauskas, Joseph J Berry, Kai Zhu, *Nature Energy,* 7, 2022/6/13, 642-651. doi.org/10.1038/s41560-022-01046-1.
29. "Countdown to perovskite space launch: Guidelines to performing relevant radiation-hardness experiments." Ahmad R Kirmani, Brandon K Durant, Jonathan Grandidier, Nancy M Haegel, Michael D Kelzenberg, Yao M Lao, Michael D McGehee, Lyndsey McMillon-Brown, David P Ostrowski, Timothy J Peshek, Bibhudutta Rout, Ian R

Sellers, Mark Steger, Don Walker, David M Wilt, Kaitlyn T VanSant, Joseph M Luthe. *Joule, 6,* 2022, 1015-1031.doi.org/10.1016/j.joule.2022.03.004.

30. "Perovskite Photovoltaic Devices with Carbon-Based Electrodes Withstanding Reverse-Bias Voltages up to–9 V and Surpassing IEC 61215: 2016 International Standard," Dmitry Bogachuk, Karima Saddedine, David Martineau, Stephanie Narbey, Anand Verma, Paul Gebhardt, Jan P Herterich, Nico Glissmann, Salma Zouhair, Jochen Markert, Isaac E Gould, Michael D McGehee, Uli Würfel, Andreas Hinsch, Lukas Wagner, *Solar Rrl* 6 (2022) 2100527. doi.org/10.1002/solr.202100527.
31. "Designing Modules to Prevent Reverse Bias Degradation in Perovskite Solar Cells when Partial Shading Occurs." E.J. Wolf, I.E. Gould, L.B. Bliss, J.J. Berry, M.D. McGehee. *Solar RRL* 6, 3, 2022, 2100239. doi.org/10.1002/solr.202100239.
32. "Consensus statement: Standardized reporting of power-producing luminescent solar concentrator performance." Chenchen Yang, Harry A Atwater, Marc A Baldo, Derya Baran, Christopher J Barile, Miles C Barr, Matthew Bates, Moungi G Bawendi, Matthew R Bergren, Babak Borhan, Christoph J Brabec, Sergio Brovelli, Vladimir Bulović, Paola Ceroni, Michael G Debije, Jose-Maria Delgado-Sanchez, Wen-Ji Dong, Phillip M Duxbury, Rachel C Evans, Stephen R Forrest, Daniel R Gamelin, Noel C Giebink, Xiao Gong, Gianmarco Griffini, Fei Guo, Christopher K Herrera, Anita WY Ho-Baillie, Russell J Holmes, Sung-Kyu Hong, Thomas Kirchartz, Benjamin G Levine, Hongbo Li, Yilin Li, Dianyi Liu, Maria A Loi, Christine K Luscombe, Nikolay S Makarov, Fahad Mateen, Raffaello Mazzaro, Hunter McDaniel, Michael D McGehee, Francesco Meinardi, Amador Menéndez-Velázquez, Jie Min, David B Mitzi, Mehdi Moemeni, Jun Hyuk Moon, Andrew Nattestad, Mohammad K Nazeeruddin, Ana F Nogueira, Ulrich W Paetzold, David L Patrick, Andrea Pucci, Barry P Rand, Elsa Reichmanis, Bryce S Richards, Jean Roncali, Federico Rosei, Timothy W Schmidt, Franky So, Chang-Ching Tu, Aria Vahdani, Wilfried GJHM van Sark, Rafael Verduzco, Alberto Vomiero, Wallace WH Wong, Kaifeng Wu, Hin-Lap Yip, Xiaowei Zhang, Haiguang Zhao, Richard R Lunt. *Joule, Cell Press* 6, 1 *2022,* 8-15. doi.org/10.1016/j.joule.2021.12.004.
33. "Cross-linkable Carbazole-Based Hole Transporting Materials for Perovskite Solar Cells." Sarune Daskeviciute, Artiom Magomedov, Maryte Daskeviciene, Kristijonas Genevicius, Nerijus Nekrašas, Vygintas Jankauskas, Kristina Kantminiene, Michael D McGehee, Vytautas Getautis. *Chemical Communications,* 58, 54, 2022, 7495-7498. doi.org/10.1039/D2CC02612K.
34. "Transparent, High-Charge Capacity Metal Mesh Electrode for Reversible Metal Electrodeposition Dynamic Windows with Dark-State Transmission< 0.1%." Andrew L Yeang, Tyler S Hernandez, Michael T Strand, Daniel J Slotcavage, Eldho Abraham, Ivan I Smalyukh, Christopher J Barile, Michael D McGehee. *Advanced Energy Materials* 12 , 32, 2022, 2200854. doi.org/10.1002/aenm.202200854.
35. "Device Performance of Emerging Photovoltaic Materials (Version 2)." Osbel Almora, Derya Baran, Guillermo C Bazan, Christian Berger, Carlos I Cabrera, Kylie R Catchpole, Sule Erten-Ela, Fei Guo, Jens Hauch, Anita WY Ho-Baillie, T Jesper Jacobsson, Rene AJ Janssen, Thomas Kirchartz, Nikos Kopidakis, Yongfang Li, Maria A Loi, Richard R Lunt, Xavier Mathew, Michael D McGehee, Jie Min, David B Mitzi, Mohammad K Nazeeruddin, Jenny Nelson, Ana F Nogueira, Ulrich W Paetzold, Nam-Gyu Park, Barry P Rand, Uwe Rau, Henry J Snaith, Eva Unger, Lídice Vaillant-Roca,

Hin-Lap Yip, Christoph J Brabec. *Advanced Energy Materials* 11, 48, 2021/12/23, 2102526. doi.org/10.1002/aenm.202102526.

36. "Temperature Coefficients of Perovskite Photovoltaics for Energy Yield Calculations." Taylor Moot, Jay B Patel, Gabriel McAndrews, Eli J Wolf, Daniel Morales, Isaac E Gould, Bryan A Rosales, Caleb C Boyd, Lance M Wheeler, Philip A Parilla, Steven W Johnston, Laura T Schelhas, Michael D McGehee, Joseph M Luther. *ACS Energy Letters*, 6, 5, 2021, 2038-2047. doi.org/10.1021/acsenergylett.1c00748.
37. "Investigation of the Selectivity of Carrier Transport Layers in Wide-Bandgap Perovskite Solar Cells." S. Kavidiya, A. Onno, C.C. Cetta, M.D. McGehee, Z. Holman. *Solar RRL* 5, 7, 2021, 2100107. doi.org/10.1002/solr.202100107.
38. "Polymer Inhibitors Enable 1 ft.2 Dynamic Windows based on Reversible Metal Electrodeposition with Record Solar Modulation." M.T. Strand, T.S. Hernandez, M.G. Danner, A.L. Yeang, N. Jarvey, C.J. Barile, M.D. McGehee. *Nature Energy.* 6 (2021) 546-54, doi.org/10.1038/s41560-021-00816-7.
39. "Incorporating Electrochemical Halide Oxidation into Drift-Diffusion Models to Explain Performance Losses in Perovskite Solar Cells under Prolonged Reverse Bias," L. Bertoluzzi, J.B. Patel, K.A. Bush, C.C. Boyd, R.A. Kerner, B.C. O'Regan, M.D. McGehee, *Advanced Energy Materials* 11, 10, 2021/03/11, 2002614. doi.org/10.1002/aenm.202002614.
40. "In-Operando Characterization of PIN Perovskite Solar Cells Under Reverse Bias." Isaac E Gould, Chuanxiao Xiao, Jay B Patel, Michael D McGehee. *IEEE (2021)* 1365-1367. doi.org/10.1109/PVSC43889.2021.9518723.
41. "Polymer inhibitors enable> 900 cm2 dynamic windows based on reversible metal electrodeposition with high solar modulation." Michael T Strand, Tyler S Hernandez, Michael G Danner, Andrew L Yeang, Nathan Jarvey, Christopher J Barile, Michael D McGehee. *Nature Energy*, 6, 2021/04/26, 546-554. doi.org/10.1038/s41560-021-00816-7.
42. "Device Performance of Emerging Photovoltaic Materials (Version 1)," O. Almora, D. Baran, G.C. Bazan, C. Berger, C.I. Cabrera, K.R. Catchpole, S. Erten-Ela, F. Guo, J. Hauch, A.W. Ho-Baillie, T.J. Jacobsson, R.A. Janssen, T. Kirchartz, N. Kopidakis, Y. Li, M.A. Loi, R.R. Lunt, X. Mathew, M.D. McGehee, J. Min, D.B. Mitzi, M.K. Nazeeruddin, J. Nelson, A.F. Nogueira, U.W. Paetzold, N. Park, B.P. Rand, U. Rau, H.J. Snaith, E. Unger, L. Vaillant-Roca, H.L. Yip, C.J. Brabec, *Advanced Energy Materials* 11, 11, 2021/03/18, 2002774. doi.org/10.1002/aenm.202002774.
43. "Choose Your Own Adventure: Fabrication of Monolithic All-Perovskite Tandem Photovoltaics," T. Moot, J. Werner, G.E. Eperon, K. Zhu, J.J. Berry, M.D. McGehee, J.M. Luther, *Advanced Materials*, 32, 50, 2020/12/17, 2003312. doi.org/10.1002/adma.202003312.
44. "Learning from existing photovoltaic technologies to identify alternative perovskite module designs," Jérémie Werner, Caleb C Boyd, Taylor Moot, Eli J Wolf, Ryan M France, Samuel A Johnson, Maikel FAM van Hest, Joseph M Luther, Kai Zhu, Joseph J Berry, Michael D McGehee, *Energy and Environmental Science*, 13, 10, 2020/10, 3393-3403. doi.org/10.1039/d0ee01923b.
45. "Overcoming Redox Reactions at Perovskite-Nickel Oxide Interfaces to Boost Voltages in Perovskite Solar Cells," C.C. Boyd, R.C. Shallcross, T. Moot, R. Kerner, L. Bertoluzzi, A. Onno, S. Kavadiya, C. Chosy, E.J. Wolf, J. Werner, J.A. Raiford, C.

de Paula, A.F. Palmstrom, Z.J. Yu, J.J. Berry, S.F. Bent, Z.C. Holman, J.M. Luther, M.D. McGehee, *Joule*, 4, 8, 2020/08/19, 1759-1775. doi.org/10.1016/j.joule.2020.06.004.

46. "The Molybdenum Oxide Interface Limits the High Temperature Operational Stability of Unencapsulated Perovskite Solar Cells," T.H. Schloemer, J.A. Raiford, T.S. Gehan, T. Moot, S. Nanayakkara, S.P. Harvey, R.C. Bramante, S. Dunfield, A.E. Louks, A.E. Maughan, L. Bliss, M.D. McGehee, M.F.A.M. van Hest, M.O. Reese, S.F. Bent, J.J. Berry, J.M. Luther, A. Sellinger, *ACS Energy Letters*, 5, 7, 2020/06/15, 2349-2360. doi.org/10.1021/acsenergylett.0c01023.
47. "Electrolyte for Improved Durability of Dynamic Windows Based on Reversible Metal Electrodeposition," T.S. Hernandez, M. Alshurafa, M.T. Strand, A.L. Yeang, M.G. Danner, C.J. Barile, M.D. McGehee, *Joule,* 4*, 7,* 2020/07/15, 1501-1513. doi.org/10.1016/j.joule.2020.05.008.
48. *"*CsI-Antisolvent Adduct Formation in All-Inorganic Metal Halide Perovskites," T. Moot, A.R. Marshall, L.M. Wheeler, S.N. Habisreutinger, T.H. Shloemer, C.C. Boyd, D.R. Dikova, G.F. Pach, A. Hazarika, M.D. McGehee, H.J. Snaith, J.M. Luther, *Advanced Energy Materials*, 10, 9, 2020, 1903365. doi.org/10.1002/aenm.201903365.
49. "Triple-Halide Wide-Band Gap Perovskites with Suppressed Phase Segregation for Efficient Tandems," J.X. Xu, C.C. Boyd, Z.S.J. Yu, A.F. Palmstrom, D.J. Witter, B.W. Larson, R.M. France, J. Werner, S.P. Harvey, E.J. Wolf, W. Weigand, S. Manzoor, M.F.A.M. van Hest, J.J. Berry, J.M. Luther, Z.C. Holman, M.D. McGehee, *Science*, 367, 2020/02/01, 1097-1104. doi.org/10.1126/science.aaz5074.
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12. “Enhancing the Efficiency of Dye-Sensitized Solar Cells Using Plasmonic Back Reflectors Fabricated by Nanoimprint Lithography,” Patent Number 8,895,844, issued 11/25/2014.
13. “Electron Deficient Molecules and Their Use in Organic Electronics,” Patent Number 9,246, 106, issued 1/26/2016.
14. “Self-Limited Plasmonic Nanowelding,” Patent Number 9,165,694, issued 10/20/2015.
15. “Pressure-Transferred Components,” Serial Number 62/013,846. Provisional filed on June 18, 2014.
16. “A layered Hybrid Perovskite Solar Cell Absorber with Enhanced Moisture Stability,” U.S. Provisional Application No. 62/008704.
17. “Multijunction Perovskite/Crystalline Silicon Solar Cell with Tunnel Junction,” USA Provisional 62/086,785
18. “Control Circuit to Optimize Performance of Tandem Photovoltaic Modules,” Pending.
19. “Sputtered ITO Electrode Enabled by Doped Nanoparticle Buffer Layer for Improved Thermal and Environmental Stability of Semi-Transparent and Tandem Perovskite Solar Cells,” Stanford Docket: 15-360.
20. “Metal Oxide Buffer Layers Deposited through Atomic Layer Deposition and Chemical Vapor Deposition to Stabilize Perovskite Solar Cells and Enable Sputtered Electrodes,” Stanford Docket: 16-259.
21. “Structures Enabling Large-Scale Uniform Reversible Metal Electrodeposition on Transparent Electrodes,” Stanford Docket: 17-215.
22. “Fast, Uniform, Reversible Electrodeposition for Large Scale Energy-efficient Dynamic Glass,” Stanford Docket: 17-359, USPTO serial number: 62/534918
23. "Preparation and use of stable tin - lead halide alloys for perovskite solar cells" Stanford Docket: S17-324 Appl. No.: 62/549356
24. “Nanowire Apparatuses and Methods”, Appl. No.: 20140090870

INVITED CONFERENCE TALKS

1. “Designing perovskite modules that are mechanically durable and able to survive under partial shading conditions,”International Symposium on Emerging Solar Cells (IESC2024) Wuhan, China, November 3-4, 2024.
2. “Preventing electrochemical reactions and managing stress to make robust perovskite solar cells” International Summit on Organic and Hybrid Photovoltaics Stability (ISOS-15), Berlin, Germany, September 30- October 2, 2024.

3. "Energy Efficient windows with adjustable tinting based on reversible metal electrodeposition," Orcas 2024 International Conference on Energy Conversion and Storage, Seattle, Washington, August 5-7, 2024.
4. "Preventing Degradation in Reverse Bias for Perovskite Solar Cells," TechBlick: The Future of Photovoltaics: Organic, Perovskites, CIGS, Tandem; Virtual conference organized in Germany. Jan 24-25, 2024.
5. "X-factors that Might Determine How Perovskite Solar Cells are Deployed," American Chemical Society Fall Meeting, August 13-18, 2023.
6. "X-factors that Might Determine How Perovskite Solar Cells are Deployed," Spring MRS Meeting, San Francisco, CA, April 10-14, 2023.
7. "Designing Dynamic Windows Based on Reversible Metal Electrodeposition," Spring MRS Meeting, San Francisco, CA, April 10-14, 2023.
8. "Using Windows with Reversible Metal Electrodeposition to Save Energy," Spring MRS Meeting, San Francisco, CA, April 10-14, 2023.
9. "Dynamic Windows That Reduce Glare and Save Energy" 3M Film Symposium, Saint Paul, Minnesota, November 7-11, 2022.
10. "Perovskite Solar Cells," United States Patent Office Technology Fair, June 20-21, 2022.
11. "X-factors that" might determine how perovskite solar cells are deployed," Plenary Speaker, Advanced PV 2030: Toward the Commercialization of Next Generation, June 14-17, 2022.
12. "Studying Perovskite Solar Cells in Reverse Bias to Accelerate Electrochemical Degradation and Assess Their Stability Orders of Magnitude Faster." Gordon Conference on Unconventional Semiconductors, Ventura CA, June 12-17, 2022.
13. "Advances in Perovskite Tandems," Tandem PV, Freiburg Germany, May 30-June 1, 2022. (I participated virtually.)
14. "Incorporating functional barrier layers in perovskite solar cells to improve stability," Vipercon, April 4, 2022. (I participated virtually.)
15. "X-factors that might determine how perovskite solar cells are deployed," 31st Photovoltaic Science & Engineering Conference (PVSEC-31), Sydney, Australia, December 13-15, 2021 (I participated virtually.)
16. "Perovskite Solar Cells," MAPEX Symposium 2021: Beyond solar cells: new approaches to radiation conversion, Bremen, Germany, September 29-30, 2021 (I participated virtually.)
17. "Reversible Metal Electrodeposition for Dynamic Windows," National Fenestration Rating Council Emerging Technology Series, July 22, 2021, virtual conference.
18. "Electrochemistry in Perovskites and Dynamic Windows," 13th International Conference on Hybrid and Organic Photovoltaics, May 25-28, 2021.
19. "Module Designs That Will Promote Stability for Perovskite Tandems," Tandem PV Workshop, held virtually and hosted by Helmholtz-Zentrum Berlin, April 13-16, 2021.
20. "Avoiding reverse bias degradation in perovskite solar cells," Virtual Perovskite Conference 2021, April 12, 2021.
21. "Why studying perovskite solar cells in reverse bias is important," NanoGe Spring Meeting, March 8-12, 2021.

22. "Improving the Stability of Perovskite Solar Cells," The 5th International Conference on Next Generation Solar Energy (NGSE5), Erlangen, Germany (presented virtually), December 7-9, 2020.
23. "Band Gap Tuning of Perovskite Semiconductors and Insights from a Device Simulator that Includes Affects Associated with Mobile Ions," Fall Materials Research Society Meeting, Boston, MA, (presented virtually) November 30-December 4, 2020.
24. "Using Reversible Metal Electrodeposition to Make Beautiful Windows with Adjustable Tinting to Save Energy," 2020 Fall American Institute of Chemical Engineers (AIChE) Conference, San Francisco, CA (presented virtually) November 15-20, 2020.
25. "Band Gap Tuning of Perovskite Semiconductors and Insights from a Device Simulator that Includes Affects Associated with Mobile Ions," IEEE 47th Photovoltaic Specialists Conference, held virtually from June 15-August 21, 2020.
26. "Triple halide wide band gap perovskites improve the stability and efficiency of tandems," Virtual Perovskite Conference, April 14, 2020. 600 attendees
27. "Designing Narrow and Wide Bandgap Metal Halide Perovskites for Tandem Solar Cells," Fall MRS Meeting, Boston, Massachusetts, December 2-6, 2019.
28. "Improving the Stability of Perovskite Solar Cells," 12th International Summit on Organic and Hybrid Photovoltaics Stability Karlsruhe, Germany, October 8-10, 2019.
29. "Perovskite Tandem Solar Cells," 8th Sungkyun International Solar Forum, Seoul, Korea, June 19-21, 2019.
30. "Improving the Stability of Perovskite Solar Cells," European Materials Research Society Spring Meeting, Nice, France, May 27-31, 2019.
31. "Opportunities in the Solar Industry for Perovskite Solar Cells," Honeywell Technology Symposium, Phoenix, Arizona, May 23, 2019.
32. "Perovskite-Perovskite Tandems for Efficient Flexible PV Devices," Office of Naval Research Organic and Perovskite Photovoltaics Review, Golden, CO, April 17-18, 2019.
33. "Identifying Mechanisms of Degradation in Perovskite Solar Cells and Improving their Stability," Office of Naval Research Organic and Perovskite Photovoltaics Review, Golden, CO, April 17-18, 2019.
34. "Dynamic Windows Based on Reversible Metal Electrodeposition," Building Technology Office Review, Arlington, Virginia, April 15-16, 2019.
35. "Dynamic Windows Based on Reversible Metal Electrodeposition," Center for Building Energy Smart Technologies Workshop, Boulder, Colorado, March 8-9, 2019.
36. "Dynamic Windows Based on Reversible Metal Electrodeposition," NREL Windows Working Group Meeting, Golden, Colorado, March 7-8, 2019.
37. "Designing Metal Halide Perovskites Solar Cells to be Stable for High Efficiency Tandems," Fall MRS Meeting, Boston, Massachusetts, November 26-30, 2018.
38. "Accelerated Testing of Perovskite Solar Cells to Improve Their Stability," 4th International Conference on Perovskite Solar Cells and Optoelectronics, Lausanne, Switzerland, Oct 1-2, 2018.

39. “Identifying Mechanisms of Degradation in Perovskite Solar Cells and Improving their Stability,” Office of Naval Research Organic and Perovskite Photovoltaics Review, Atlanta, Georgia, September 21-22, 2018.
40. “Perovskite-Perovskite Tandems for Efficient Flexible PV Devices,” Office of Naval Research Organic and Perovskite Photovoltaics Review, Atlanta, Georgia, September 21-22, 2018.
41. “Stabilizing Metal Halide Perovskite Solar Cells, 21st International Conference on Ternary and Multinary Compounds, Boulder, Colorado, September 9-13, 2018.
42. “Progress in Perovskites and Perovskite Si Tandem Cells,” 28th Workshop on Crystalline Silicon Solar Cells & Modules: Materials and Processes, Winter Park, Colorado, August 12-15, 2018.
43. “Perovskite Tandem Solar Cells,” Progress, Challenges and Opportunities in Perovskite Solar Technology, Beijing, China, April 19, 2018.
44. “Developing metal-halide perovskites with optimal band gaps, slow recombination and high stability for tandem solar cells,” Los Angeles, CA, American Physical Society Meeting, March 5-9, 2018.
45. “Perovskite-Silicon Tandem Solar Cells,” Solar Energy Technologies Office Portfolio Review, Washington DC, February 12-13, 2018.
46. “Dynamic Windows with Fast Switching, Neutral Color, Excellent Durability, and Low Cost Using Reversible Metal Electrodeposition,” Fall Materials Research Society Meeting, Boston, MA, November 27-30, 2017.
47. “Progress in Making Stable and Efficient Perovskite Tandem Solar Cells,” Materials Research Society Meeting, Boston, MA, November 27-30, 2017.
48. “Improving the Stability of Perovskite Tandem Solar Cells,” Bay Area Photovoltaic Consortium Meeting, Berkeley, CA, November 13, 2017.
49. “Perovskite Solar Cells,” AUTM Western Regional Meeting, October 11-13, 2017.
50. “Progress with Perovskite Tandem Solar Cells,” SPIE Conference, San Diego, CA, August 7-11, 2017.
51. “Will Perovskite Tandems Be a Game Changing Photovoltaic Technology?” IEEE Photovoltaic Specialists Conference, Washington DC, June 26-30, 2017.
52. “Organic Solar Cell Device Physics,” ONR Organic and Hybrid Perovskite Photovoltaics Program Review, Baltimore, MD, May 16-17, 2017.
53. “Identifying Mechanisms of Degradation in Perovskite Solar Cells and Improving their Stability,” ONR Organic and Hybrid Perovskite Photovoltaics Program Review, Baltimore, MD, May 16-17, 2017.
54. “Perovskite-Perovskite Tandems for >25% Flexible PV Devices,” ONR Organic and Hybrid Perovskite Photovoltaics Program Review, Baltimore, MD, May 16-17, 2017.
55. “Perovskite Tandem Solar Cells with Greater Than 25% Efficiency and Enhanced Stability,” International Conference on Hybrid and Organic Photovoltaics, Lausanne, Switzerland, May 21-24, 2017.
56. “Modeling of Organic Solar Cells,” Center for Advanced Organic Photovoltaics Program Review, Atlanta, GA, February 16-17, 2017.

57. “Stable and Efficient Perovskite-Silicon Tandem Solar Cells,” Materials Research Society Fall Meeting, Boston, MA, Nov. 28-Dec 2, 2016.
58. “Advances in Solar Cells,” Global Climate and Energy Project, Stanford, CA, Nov 2-3, 2016.
59. “Progress on Improving Tandem Solar Cells Made with Perovskite Semiconductors,” Bay Area Photovoltaic Consortium Fall Meeting, Berkeley, CA, October 3-4, 2016
60. “Improving the Stability of Perovskite Solar Cells,” Workshop on Perovskite Solar Cell Stability for the Office of Naval Research, Seattle, WA, August 11-12, 2016.
61. “Stable and Efficient Semitransparent Perovskite Solar Cells for Tandems,” Hybrid Organic Photovoltaics International Conference, Swansea, Wales, June 28-July 1, 2016.
62. “Perovskite Solar Cells and Thoughts on Starting-Up Energy Companies,” IEEE NanoCrON-29016: Inspiring the Next Generation, Almaden, CA, June 13-15, 2016.
63. “Improving the Lifetime of Polymer Solar Cells,” Office of Naval Research Conference on Polymer Solar Cells, Washington DC, May 17-18, 2016.
64. “A New Paradigm for Understanding How Organic Solar Cells Operate,” Office of Naval Research Conference on Polymer Solar Cells, Washington DC, May 17-18, 2016.
65. “Incorporating Perovskites into Tandem Solar Cells with Silicon and CIGS,” Spring Materials Research Society Meeting, Phoenix, Arizona, March 28-31, 2016.
66. “Progress in understanding what it will take to make organic solar cells more than 15% efficiency,” Spring Materials Research Society Meeting, Phoenix, Arizona, March 28-31, 2016.
67. “Perovskite Tandem Solar Cells,” American Vacuum Society International Symposium, San Jose, California, October 19-22, 2015.
68. “Tandem Solar Cells with Perovskites on Top of Silicon and CIGS,” 1st International Conference on Perovskite Solar Cells and Optoelectronics, Lausanne, Switzerland, September 27-29, 2015.
69. “Beyond Langevin Recombination: How Equilibrium Between Charge Transfer States and Free Carriers Determines the Open Circuit Voltage,” International Symposium on Functional Pi-Electron Systems, Seattle, WA July 20-24, 2015.
70. “Progress in Understanding How to Make Organic Solar Cells with Greater Than 15% Efficiency,” Center for Advanced Organic Photovoltaics MURI Review, Santa Barbara, CA, June 9-10, 2015.
71. “Improving the Stability of Organic Solar Cells,”AFOSR and ONR Organic Photovoltaics Program Review, Santa Barbara, CA, June 8-9, 2015.
72. “Understanding Degradation in Organic Solar Cells,” European Materials Research Society Meeting, Lille, France, May 11-15, 2015.
73. “Combining Perovskites with Conventional Solar Cell Materials to Make Highly Efficient and Inexpensive Tandems,” Spring Materials Research Society Meeting, San Francisco, CA, April 6-10, 2015.

74. "Transparent Electrodes for Solar Cells," Roadmap for Multi-Functional PV Contacts Conference, NREL, Golden, CO, March 30-31, 2015.
75. "Perovskite Solar Cells," Total-SunPower Workshop on Solar Cells, Santa Clara, CA, February 4-5, 2015.
76. "A Tandem Solar Cells with Perovskite Semiconductors," Materials Research Society Fall Meeting, Boston, MA, November 30-December 5, 2014.
77. "The Importance of Molecular Confirmation at the Donor-Acceptor Interface in Organic Photovoltaics," Materials Research Society Fall Meeting, Boston, MA, November 30-December 5, 2014.
78. "The Grand Challenges for Organic Solar Cells," Center for Advanced Molecular Photovoltaics Meeting, Atlanta, Georgia, September 14-16, 2014.
79. "The Future of Solar Cell Technology," Global Crossroads: The Road Ahead for the Solar PV Industry, Stanford, California, September 12, 20
80. "The Rapid Emergence of Perovskite Solar Cells," Molecular Foundry Users Meeting, August 25-26, 2014, Berkeley, CA.
81. "Molecular Packing in Polymer Solar Cells," Excitonic Solar Cells, Telluride, Colorado, August 11-15, 2014.
82. "Understanding Charge Separation in Polymer Solar Cells," The 6th International Conference on Excited State Processes in Electronic and Bio Nanomaterials, Santa Fe, New Mexico, June 9-12, 2014.
83. "Improving the Lifetime of Polymer Solar Cells," Joint AFOSR and ONR Organic Photovoltaics Program Review, Arlington, Virginia, June 4-5, 2014.
84. "How a High Local Carrier Mobility and Three-Phase Structure Enable Charge Separation in Polymer Solar Cells," Hybrid Organic Photovoltaic Conference, Laussanne, Switzerland, May 12-14, 2014.
85. "How Charge Carriers Separate in Bulk Heterojunctions," Materials Research Society Spring Meeting, San Francisco, California, April 21-25, 2014.
86. "Semitransparent Perovskite Solar Cells for Hybrid Tandems," Materials Research Society Spring Meeting, San Francisco, California, April 21-25, 2014.
87. "The Importance of Molecular Packing at the Donor-Acceptor Interface in Polymer Solar Cells," American Chemical Society Meeting, Dallas, Texas, March 17-20, 2014.
88. "Controlling Interactions Between Fullerenes and Polymers in Solar Cells," Nano and Giga Challenges in Electronics Photonics and Renewable Energy Forum, Phoenix, Arizona, March 10-14, 2014.
89. "The Charge Separation Mechanism in Efficient Bulk Heterojunction Solar Cells," International Colloquium on Flexible Electronics, Thuwal, Saudi Arabia, November 2-5, 2013.
90. "Polymers and Perovskites for Hybrid Tandem Solar Cells," Global Climate and Energy Project Annual Meeting, Stanford, California, October 8-10, 2013.
91. "Making Polymer Solar Cells Efficient and Stable," SPIE Photonics Meeting, San Diego, California, August 26-29, 2013.
92. "Charge Separation in Organic Solar Cells," Department of Energy Meeting on Solar Photochemistry, Annapolis, Maryland, June 3-6, 2013. (Plenary Speaker)
93. "Energy Cascades in Polymer Solar Cells," European Materials Research Society Meeting, Strasbourg, France, May 27-31, 2013.

94. “New Materials for Dye-Sensitized Solar Cells,” Office of Naval Research Annual Meeting on Organic Solar Cells, Washington DC, May 21-22, 2013.
95. “Controlling the Morphology of Polymer Solar Cells to Improve Their Efficiency,” Evanston, Illinois, May 9-10, 2013.
96. “Degradation in Polymer Solar Cells,”American Chemical Society Meeting, New Orleans, April 8-12, 2013.
97. “Bulk Heterojunction Solar Cells with Three Phases,” Materials Research Society Spring Meeting, San Francisco, California, April 1-5, 2013.
98. “The Science of Understanding How Polymer Solar Cells Degrade,”American Physical Society Meeting, Baltimore, Maryland, March 18-22, 2013.
99. “Opportunities for Organic Solar Cells to Provide Electricity on a Large Scale,” Materials Research Society Fall Meeting, Boston, Massachusetts, November 26-30, 2012.
100. “What it Will Take to Make Organic Photovoltaics Competitive,” Workshop on Key Technological Issues for Development of Next-Generation Organic Photovoltaics, Arlington, Virginia, September 20-21, 2012.
101. “Modeling of Low-Cost Hybrid Tandem Photovoltaics with Power Conversion Efficiencies Potentially Exceeding 20%,” American Chemical Society Meeting, Philadelphia, Pennsylvania, August 20-24, 2012.
102. “Organic-Inorganic Solar Cells,” I-CAMP Conferences on Nano and Emerging Photovoltaics, Boulder, Colorado, August 8-11, 2012.
103. “Solar Cells,” MIT-Stanford Game Changers Conference, Cambridge, Massachusetts, July 16-17, 2012.
104. “Low-Cost Hybrid Tandem Photovoltaics,” International Conference on Synthetic Metals, Atlanta, Georgia, July 9-13, 2012.
105. “The Potential for Low-Cost Hybrid Tandem Photovoltaics with Power Conversion Efficiencies Exceeding 20%,” Photovoltaics Specialists Conference, Austin, Texas, June 4-7, 2012.
106. “The Device Physics and Long-Term Reliability of Several of the Highest Performing Polymers in Bulk Hetero junction Solar Cells,” Materials Research Society Spring Meeting, San Francisco, CA, April 9-12, 2012.
107. “Molecular Packing in Polymer Solar Cells and Its Implications for Device Performance,” San Francisco, CA, Materials Research Society Spring Meeting, April 9-12, 2012.
108. “Contrasts and Simularities Between Some of the Highest Performing Photovoltaic Polymers,” American Chemical Society Spring Meeting, San Diego, CA, March 25-29, 2012.
109. “Light Harvesting in Dye-Sensitized Solar Cells,” American Chemical Society Spring Meeting, San Diego, CA, March 25-29, 2012.
110. “Integration of Molecular Mechanics Simulations With X-Ray Diffraction to Determine Molecular Packing in Bulk Heterojunction Solar Cells,” San Diego, CA, American Chemical Society Spring Meeting, March 25-29, 2012.
111. “Degradation of Polymer Solar Cells,” International Summit on Organic Photovoltaic Stability, Denver, CO, December 5-6, 2011.

112. “Revealing the Arrangement of Molecules in Bulk Heterojunction Solar Cells,” Fall Materials Research Society Meeting, Boston, MA, November 28- December 2, 2011.
113. “Molecular Packing in Polymer Solar Cells,”Photovoltaics at the Nanoscale, Hasselt University, Belgium, October 24-28, 2011.
114. “Advances in Polymer and Dye-Sensitized Solar Cells," SPIE, San Diego, CA, August 21-25, 2011.
115. “Semiconducting Polymer Solar Cells,” American Chemical Society Fall Meeting, Denver, CO, August 28-September 1, 2011.
116. “Three Generations of Solar Cell Technology and the Policies That are Needed to Promote Their Growth,” Stanford-MIT Game Changers” Conference, Palo Alto, CA, June 24-25, 2011.
117. “Morphology, Traps and Degradation in High Efficiency Polymer Solar Cells,” Optical Probes of Conjugated Polymers and Organic Nanostructures, Santa Fe, NM, June 19-24, 2011.
118. “The Long-Term Reliability of Polymer Solar Cells,” Photovoltaics Specialists Conference, Seattle, WA, June 20-24, 2011.
119. “Improving Light Harvesting in Dye-Sensitized Solar Cells,” Photovoltaics Specialists Conference, Seattle, WA, June 20-24, 2011.
120. “Enhancing the Efficiency of Solid-State Dye Sensitized Solar Cells with Plasmonic Back Reflectors and Energy Relay Dyes,” Hybrid and Organic Photovoltaics, Valencia Spain, May 16-18, 2011.
121. “The Effect of Pore Filling on the Performance of Dye Sensitized Solar Cells,” Materials Research Society Spring Meeting, April 25-29, 2011.
122. “Recent Progress with Organic and Dye-Sensitized Solar Cells,” American Chemical Society Spring Meeting, Anaheim, CA, March 28-April 1, 2011.
123. “Auger Recombination in the Fullerene Phase of Polymer Solar Cells,” American Physical Society Meeting, Dallas, TX, March 21-25, 2011.
124. “Molecular Packing in Organic Solar Cells,” Materials Research Society Meeting, Boston, MA Nov 29-Dec 3, 2010.
125. “A Detailed Look at the Structure of Polymer-Fullerene Blends Used in Solar Cells and How it Affects Performance,” 2010 LCLS/SSRL User’s Meeting and Workshop Plenary Lecture, Menlo Park, CA, October 17-20, 2010.
126. “The Structure of Bulk Heterojunction Cocrystals,” Molecular Foundry Annual Users Meeting, Berkeley, CA, October 1, 2010.
127. “Improving the Efficiency of Dye-Sensitized Solar Cells with Energy Relay Dyes and Light Trapping,” American Chemical Society Fall Meeting, Boston, MA August 22-26, 2010.
128. “Morphology of Polymer Bulk Heterojunction Solar Cells” American Chemical Society Fall Meeting, Boston, MA August 22-26, 2010.
129. “Increasing Light Harvesting with Energy Transfer in Organic-Inorganic Solar Cells” American Chemical Society Fall Meeting, Boston, MA August 22-26, 2010.
130. “A Detailed Look at the Structure of Polymer-Fullerene Blends Used in Solar Cells and How It Affects Performance,” Directing Nanoscale Organization in

Organic Photovoltaics: Liquid Crystals for Renewable Energy, Boulder, CO, August 7-10, 2010.

131. "Advances in Organic Solar Cells," Nanomaterials for Alternative Energy Applications, Vancouver, Canada, June 20-23, 2010.
132. "Understanding the Performance of Bulk Heterojunction Solar Cells," Spring Materials Research Society Meeting, San Francisco, CA, April 5-9, 2010.
133. "Effects of Bulk Heterojunction Nanostructure on Organic Photovoltaic Performance," American Chemical Society Spring Meeting, San Francisco, CA, March 21-25, 2010.
134. "The Physics of Organic Solar Cells," American Physical Society Meeting 2010, Portland, OR, March 15-19, 2010.
135. "Carbon Nanotube Networks," Fall Materials Research Society Meeting, Boston, MA, December 3, 2009.
136. "Pore Filling in Solid State Dye Sensitized Solar Cells," Fall Materials Research Society Meeting, Boston, MA, December 3, 2009.
137. "Molecular Photovoltaics," American Vacuum Society International Symposium, San Jose, CA, November 8, 2009.
138. "Polymer-Fullerene Bimolecular Crystals," American Chemical Society Fall Meeting, Washington DC, August 17-20, 2009.
139. "The Implications of Fullerene Intercalation for Bulk Heterojunction Solar Cells," SPIE Annual Meeting, San Diego, CA, August 3-7, 2009.
140. "Energy Relay Dyes for Dye Sensitized Solar Cells," Navy-Air Force Organic Hybrid Solar Cell Research Conference, Washington DC, May 18-20, 2009.
141. "Advances in Organic Solar Cells," Society of Vacuum Coaters, Santa Clara, CA May 9-14, 2009.
142. "Optimizing Nanostructures for Organic and Dye Sensitized Solar Cells," Berkeley Nanotechnology Forum 2009, Berkeley, CA, April 26, 2009.
143. "Bimolecular Crystals and Intercalated Molecular Structures of Polymer/Fullerene in Bulk Heterojunction Solar Cells," American Chemical Society Meeting, Salt Lake City, UT, March 22-25, 2009.
144. "Improving Efficiency of Solid-State Dye Sensitized Solar Cells Through Increased Pore Filling and Forster Energy Transfer," American Chemical Society Meeting, Salt Lake City, UT, March 22-25, 2009.
145. "Intercalation of Fullerenes Between Conjugated Polymer Side Chains," Molecular Foundry Annual Users Meeting, Berkeley, CA November 11, 2008.
146. "An Experimental and Theoretical Study of Charge Transport in Carbon Nanotube Networks for Transparent Electrodes," Excitonic Solar Cell Conference 2008 University of Warwick, UK, September 9-12, 2008.
147. "Transparent Electrodes Based on Conducting Polymers and Carbon Nanotubes," American Chemical Society Meeting, Philadelphia, PA, August 18-21, 2008.
148. "Charge Transport in Organic Solar Cells," Gordon Conference on Organic Electronics, July 20-25, 2008, Mt. Holyoke, MA.
149. "Advancing Organic Solar Cells," M.D. McGehee, Organic Photovoltaics 2008, Philadelphia, PA, April 21-23, 2008.

150. "The Importance of P3HT Crystallite Orientation in P3HT:PCBM Solar Cells," M.D. McGehee, A. Mayer, B. Hardin, Materials Research Society Meeting, San Francisco, CA, March 24-28, 2008.
151. "Solar Phototvoltaics," M.D. McGehee, Physics of Sustainable Energy Conference, Berkeley, CA, March 1-2, 2008.
152. "Advances in Nanostructured Organic Solar Cells," M.D. McGehee, 2007 International Institute for Nanotechnology Symposium, Evanston, IL, October 24, 2007.
153. "Ordered Bulk Hetojunction Solar Cells," M.D. McGehee, **C. Goh, S.R. Scully, V. Gowrishankar**, Molecular Foundry Users Meeting 2007, Berkeley, CA, October 4-5, 2007.
154. "Advances in Organic Solar Cells," M.D. McGehee, **C. Goh, S.R. Scully**, International Conference on Molecular Photonics: Interaction of Light with Nanostructured Materials, Friday Harbor, WA, August 28-31, 2007.
155. "Organic Solar Cells," M.D. McGehee, **C. Goh, S.R. Scully**, Gordon Conference on the Chemistry of Electronic Materials, Mt. Holyoke, MA, July 22-26, 2007.
156. "Electronic Processes in Organic Solar Cells," M.D. McGehee, **C. Goh, S.R. Scully**, European Materials Research Society Meeting, Strasbourg, France, May 28-31, 2007.
157. "Nanostructured Organic-Inorganic Solar Cells," M.D. McGehee, V. Gowrishankar, Nanotech 2007, Santa Clara, CA, May 20-24, 2007.
158. "Organic Solar Cells," M.D. McGehee, Advancing Solar Energy Conversion Devices through Nanotechnology and Nanomanufacturing Workshop, Amherst, MA, May 18, 2007.
159. "Ordered Polymer-Titania Bulk Heterojunction Solar Cells," M.D. McGehee**, C. Goh, S.R. Scully, V. Gowrishankar**, Materials Research Society Meeting, San Francisco, CA, April 9-13, 2007.
160. "Exciton Transport and Inorganic/Organic Photovoltaics," M.D. McGehee, American Chemical Society Meeting, Chicago, IL, March 25-29, 2007.
161. "Interface Modifications in Hybrid Organic-Inorganic Photovoltaic Cells Using Benzoic Acid Derivatives," M.D. McGehee, American Chemical Society Meeting, Chicago, IL, March 25-29, 2007.
162. "Advances in Organic-Inorganic Solar Cell Research," M.D. McGehee, Gordon Research Conference on Renewable Energy: Solar Fuels, Ventura, CA, January 22-26, 2007.
163. "Exciton Transport in Organic Photovoltaic Cells," M.D. McGehee, S.R. Scully, M. Summers, American Institute of Chemical Engineers National Meeting, San Francisco, CA, November 13-17, 2006.
164. "Exciton Diffusion and Resonance Energy Transfer in Organic Photovoltaic Cells," M.D. McGehee, S.R. Scully, M. Summers, American Chemical Society Meeting, San Francisco, CA, September 11-15, 2006.
165. "Interfaces in Organic-Inorganic Hybrid Solar Cells," M.D. McGehee, **C. Goh, S.R. Scully**, SPIE's Annual Meeting, San Diego, CA, August 14-18, 2006.
166. "Improving the Efficiency of Organic Solar Cells," M.D. McGehee, Innovative Solar Cells Technology Workshop, San Jose, CA, April 26, 2006.

167. "Exciton Diffusion and Resonance Energy Transfer in Organic Photovoltaic Cells," M.D. McGehee, **S.R. Scully**, **M. Summers**, **Y. Liu**, C. Edder, J.M.J. Frechet, Materials Research Society Meeting, San Francisco, CA, April 17-21, 2006.
168. "Nanostructured Hybrid Organic-Inorganic Photovoltaic Cells," M.D. McGehee, Materials Research Society Meeting, San Francisco, CA, April 17-21, 2006.
169. "Charge Transport and Electron Transfer at Organic-Inorganic Interfaces in Field Effect Transistors and Photovoltaic Cells," M.D. McGehee, **J. Kline, C. Goh, B. Srinivasan,** Materials Research Society Meeting, San Francisco, CA, April 17-21, 2006.
170. "Organic Solar Cells," Stanford-Berkeley-MIT Nanotech Forum on PV, Stanford, CA April 12, 2006.
171. "Improving Organic-Inorganic Hybrid Solar Cells with Interface Modification and Energy Transfer," M.D. McGehee, American Chemical Society Meeting, Atlanta, Georgia, March 27-31, 2006.
172. "Organic-Based Solar Cells," M.D. McGehee, National Academy of Engineering National Meeting, Irvine, California, February 9, 2006.
173. "Behavior of Charges, Excitons and Plasmons at Organic/Inorganic Interfaces," M.D. McGehee, Third Annual Department of Energy Solid-State Lighting Program Planning Workshop, Orlando Florida, February 1-3, 2006.
174. "Controlling Energy and Electron Transfer in Nanostructured Organic-Inorganic Photovoltaic Cells," M.D. McGehee, Materials Research Outreach Symposium at the University of California at Santa Barbara, Santa Barbara, California, January 25-27, 2006.
175. "Exciton and Charge Transport in Organic-Inorganic Hybrid Photovoltaic Cells," Pacifichem, M.D. McGehee, M. Summers, **Y. Liu, S.R. Scully**, Hawaii, December 15-20, 2005.
176. "Improving Electronic Processes in Conjugated Polymers by Optimizing Chain Packing," 29th Annual Symposium of the Macromolecular Science and Engineering Center at the University of Michigan, Ann Arbor, Michigan, October 27, 2005.
177. "Organic-based Solar Cells," M.D. McGehee, National Academy of Engineering's Frontiers of Engineering Meeting, Niskayuna, NY, September 24-26, 2005.
178. "Exciton Diffusion and Energy Transfer in Polymer Photovoltaic Cells," M.D. McGehee, **Y. Liu, M. Summers, S. Scully**, ACS/MRS/IEEE Organic Microelectronics Workshop, Newport, RI, July 10-13, 2005.
179. "Nanostructured Organic-Inorganic Hybrid Photovoltaic Cells," M.D. McGehee, **C. Goh, Y. Liu, M. Summers, S. Scully, K.M. Coakley**, Pacific Rim Conference on Lasers and Electro-Optics, Tokyo, Japan, July 11-15, 2005.
180. "Advances in Organic Photovoltaic Cells," M.D. McGehee, **C. Goh, Y. Liu, M. Summers, S. Scully, K.M. Coakley**, Device Research Conference, Santa Barbara, CA, June 20-22, 2005.
181. "Fundamental Electronic Processes in Polymeric Photovoltaic Cells," M.D. McGehee, American Physical Society March Meeting, Los Angeles, CA, March 21-25, 2005.

182. "Improving Exciton and Charge Transport in Organic-Inorganic Hybrid Photovoltaic Cells," American Chemical Society, San Diego, CA, March 14-18, 2005.
183. "Tuning the Nanostructure of Semiconducting Polymers to Make Better Photovoltaic Cells and Transistors," M.D. McGehee, Symposium on Polymer and Molecular Electronics Devices, Singapore, January 10-11, 2005.
184. "The Role of Organic-Inorganic Interfaces in Polymer Field Effect Transistors and Photovoltaic Cells," M.D. McGehee, **K.M. Coakley, Y. Liu, C. Goh**, Gordon Conference on Chemistry at Interfaces, New Hampshire, August 15-20, 2004.
185. "Optimizing the Nanostructure of Organic-Inorganic Hybrid Photovoltaic cells," M.D. McGehee, **K.M. Coakley, Y. Liu, C. Goh**, SPIE's 49th Annual Meeting, Denver, CO, August 2-6, 2004.
186. "Ordered Bulk Heterojunction Photovoltaic Cells," M.D. McGehee, **K.M. Coakley, Y. Liu, C. Goh**, Materials Research Society Meeting, San Francisco, CA, April 12-16, 2004.
187. "Improving the Efficiency of Bulk Heterojunction Photovoltaic Cells," M.D. McGehee, **K.M. Coakley, Y. Liu, C. Goh**, American Chemical Society Meeting, Anaheim, CA, March 30- April 2, 2004.
188. "Improving the Structure of Semiconducting Polymers for Photovoltaic Cells and Transistors," M.D. McGehee, **K.M. Coakley, Y. Liu, C. Goh**, Golden Gate Polymer Forum, Palo Alto, CA, November 11, 2003.
189. "Ordered Bulk Heterojunction Photovoltaic Cells: Steps Towards Efficiency Greater than 10 %," M.D. McGehee, **K.M. Coakley, Y. Liu, C. Goh**, SPIE, San Diego, CA, August 4-8, 2003.
190. "Infiltrating Semiconducting Polymers into Mesoporous Titania for Photovoltaic Applications," M.D. McGehee, **K.M. Coakley, Y. Liu**, Flory Conference, Stanford, CA, February 20-21, 2003.
191. "Infiltrating Semiconducting Polymers into Mesoporous Titania for Photovoltaic Applications," M.D. McGehee, DARPA Workshop on Flexible Nanocomposite Organic Photovoltaics, Washington D.C., January 21-22, 2003.
192. "Organic Photovoltaic Cells," M.D. McGehee, National Science Foundation Workshop on Technological Challenges for Flexible, Lightweight Low-Cost and Scalable Organic Electronics and Photonics, Washington D.C., January 17, 2003.
193. "Polymer LEDs and Lasers for Integrated Optics," M.D. McGehee, Device Research Conference, Santa Barbara, CA, June 24-26, 2002.
194. "Semiconducting Polymer Light-emitting Diodes and Lasers," M.D. McGehee, Opto Southwest, Tucson, AZ, September 18, 2001.
195. "Organic-Inorganic Nanostructured Photovoltaic Cells," M.D. McGehee, Stanford Nano Day, Stanford, CA, July 19, 2001.
196. "Semiconducting Polymer Light-emitting Diodes and Lasers," M.D. McGehee, Center for Novel Optoelectronic Materials Conference, Stanford, CA, September 28-29, 2000.
197. "Semiconducting Polymer Lasers," M.D. McGehee, R. Gupta, E.K. Miller, A.J. Heeger, International Conference on Synthetic Metals, Montpellier, France, July 12-18, 1998.

WEBINARS

1. Stanford Center for Professional Development, "Dynamic Windows," October 11, 2017
2. Stanford Center for Professional Development, "Perovskite Solar Cells"
3. Materials Research Society, "Perovskite Tandem Solar Cells"

INVITED COLLOQUIA AND SEMINARS

1. Lemieux Lectureship at the University of Ottawa, September 27, 2024 "Harvesting Sunlight with Perovskite Tandem Solar Cells and Dynamic Windows"
2. Alan Heeger Lecture at the University of California Santa Barbara (June 11, 2024) "Lessons from Alan Heeger and Harvesting Sunlight with Perovskite Tandem Solar Cells and Dynamic Windows"
3. Nanotechnology Council, IEEE Northern Virginia section (April 26, 2023) "Perovskite Tandem Solar Cells"
4. University of Tulsa, Department of Chemical Engineering (November 11, 2022) "Dynamically tinted windows based on reversible metal electrodeposition"
5. Bay Area Buffs Investors Club, (April 14, 2022) "Dynamic Windows," Palo Alto, CA
6. Seman University, (October 11, 2021) "Metal Halide Perovskite Tandem Solar Cells," (virtual presentation)
7. University of Colorado, Chemistry Department (April 5, 2019) "Dynamically tinted windows based on reversible metal electrodeposition"
8. Colorado State University, Physics Department (March 11, 2019) "Progress with Perovskite Solar Cells"
9. University of Colorado, Physics Department (February 14, 2019) "Perovskite Solar Cells"
10. University of Washington (January 4, 2018) "Perovskite Tandem Solar Cells and Dynamic Window"
11. National Renewable Energy Laboratory, Golden, CO (October 24, 2017) "Using reversible metal electrodeposition to make beautiful windows with adjustable tinting to save energy"
12. Stanford Energy Seminar, Stanford, CA, (September 25, 2017) "Using reversible metal electrodeposition to make beautiful windows with adjustable tinting to save energy"
13. "Using reversible metal electrodeposition to make dynamically tinting windows," Tesla, September 12, 2017
14. Physics Colloquium, Stanford University (June 1, 2017) "How Metal-Halide Semiconductors Enable Highly Efficient Solar Cells"
15. University of California at Berkeley, Berkeley, CA (September 15, 2016) "Perovskite Solar Cells and a New Direction for Smart Windows"

16. Electrical Engineering Colloquium, University of Colorado, Boulder, CO (August, 30,2016) "Perovskite Solar Cells"
17. Renewable and Sustainable Energy Institute Colloquium, University of Colorado, Boulder, CO (August, 29, 2016) "Tandem Solar Cells and Smart Windows"
18. King Abdullah University of Science & Technology, Thuwal, Saudi Arabia (May 19, 2015) "Using Perovskites to Make Tandem Solar Cells on Silicon or CIGS"
19. King Abdullah University of Science & Technology, Thuwal, Saudi Arabia (May 18, 2015) "Progress in Understanding How to Make Organic Solar Cells with Greater Than 15% Efficiency"
20. Stanford Energy Seminar, Stanford, California (March 2, 2015) "Up-Conversion Solar Cells"
21. Georgia Tech, Atlanta, Georgia (September 15, 2014) "Perovskite Solar Cells"
22. DuPont, Sunnyvale, CA (September 11, 2014) "Using Perovskites to Make Tandems on Silicon"
23. Oxford University, Oxford, England (May 15, 2014) "Charge Separation in Polymer Solar Cells"
24. Cambridge University, Cambridge, England, (May 30, 2013) "Optimizing Molecular Packing in Polymer Solar Cells to Improve Power Conversion Efficiency"
25. Stanford Energy Seminar, Stanford, California (March 3, 2014) "Emerging High-Efficiency Low-Cost Solar Cell Technologies"
26. King Abdullah University of Science & Technology, Thuwal, Saudi Arabia (February 3, 2013) "Why the Solar Industry is Both Thriving and Struggling and What it Means for Saudi Arabia"
27. King Abdullah University of Science & Technology, Thuwal, Saudi Arabia (February 4, 2013) "Polymers Solar Cells for High Efficiency Tandems"
28. Schlumberger (as a GCEP Distinguished Lecturer) (November 26, 2012) "Organic Solar Cells"
29. Plextronics (November 21, 2012) "Preventing Degradation in Polymer Solar Cells"
30. Nanoscale Science and Engineering Lecture at UC Berkeley (September 7, 2012) "Hybrid Tandem Solar Cells"
31. Exxon (as a GCEP Distinguished Lecturer) (August 23, 2012) "Organic Solar Cells"
32. General Electric (as a GCEP Distinguished Lecturer) (August 20, 2012) "Organic Solar Cells"
33. Hewlett-Packard World Voices Series (March 22, 2012) "Printing Solar Cells for Greener Energy"
34. Department of Energy's SunShot Seminar Series (March 20, 2012) "Organic-Inorganic Hybrid Solar Cells"
35. DuPont (as a GCEP Distinguished Lecturer) (March 19, 2012) "Organic Solar Cells"
36. SLAC Public Lecture (January 24 and 26, 2012) "Printing Solar Cells for Greener Energy"
37. Konarka (December 2, 2011) "Degradation of Polymer Solar Cells"
38. Plextronics (September 21, 2011) "Recent Progress With Organic Solar Cells"

39. Univerisity of California at Davis (April 18, 2011) “Molecular Solar Cells”
40. MIT, (March 8, 2011) “Organic and Dye Sensitized Solar Cells”
41. KAUST (March 2, 2011) “Improving Light Harvesting in Dye Sensitized Solar Cells”
42. KAUST (March 1, 2011) “Overview of CAMP research”
43. Dupont Displays, (October 14, 2010) “Molecular Photovoltaics.”
44. University of California at Santa Barbara (October 12, 2010) “Physics of Organic Solar Cells”
45. University of California at Santa Barbara Materials Science Colloquium (October 8, 2010) “Organic Solar Cells”
46. Singularity University, Mountain View, CA (July 19, 2010) “The Future of Solar Cell Technology”
47. Solid State Seminar, UC Berkeley, Berkeley, CA (March 12, 2010) “Recent Advances in Organic Solar Cells”
48. King Fahd University of Petroleum and Mining, Dahran, Saudi Arabia (January 31, 2010) “Opportunities with Organic Solar Cells”
49. King Abdullah City of Science and Technology, Rihyad, Saudi Arabia (January 30, 2010) “Research in the Center for Advanced Molecular Photovoltaics”
50. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia (January 27, 2010) “An Introduction to Organic Solar Cells”
51. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia (January 28, 2010) “Advanced Topics in Organics Solar Cells”
52. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia (January 25, 2010) “Solar Cells in 2010 and Beyond”
53. Energy Seminar, Stanford University, Stanford, CA (November 11, 2009) “Solar Cells in 2009 and Beyond”
54. University of Texas at Austin, Austin, TX (November 20, 2008) “Bulk Heterojunction Solar Cells”
55. University of California at Berkeley, Berkeley, CA (February 21, 2008) “Transparent Carbon Nanotube Electrodes”
56. University of California at Berkeley, Berkeley, CA (December 8, 2006) “Nanostructured Solar Cells”
57. Stanford-Wisconsin Workshop on Coated Conductors, Palo Alto, CA (April 25, 2006) “Solar Cells: Now and Looking Forward”
58. (after dinner talk) Sierra Club National Headquarters, San Francisco, CA (September 29, 2005) “Prospects for Reducing the Costs of Solar Cells”
59. Princeton University, Princeton Institute for Science and Technology of Materials, Princeton, NJ (September 21, 2005) “Optimizing Exciton and Charge Transport in Organic Semiconductors for Photovoltaic and Transistor Applications”
60. University of Washington, Department of Chemistry, Seattle, WA (May 18, 2005) “Electronic Processes in Nanostructured Polymer Transistors and Solar Cells”
61. Stanford University, Department of Petroleum Engineering, Stanford, CA (April 29, 2005) “Prospects for Low Cost Organic Solar Cells”
62. National Institute of Standards and Technology, Gaithersburg, MD (March 25, 2005) “Charge Transport in Semiconducting Polymers”

63. UCLA, Department of Materials Science and Engineering Colloquium, Los Angeles, CA (February 11, 2005) "Improving Charge Transport in Organic Semiconductors"
64. Imperial College, United Kingdom (January 27, 2005) "Recent Progress with Hybrid Photovoltaic Cells"
65. Cambridge University, United Kingdom (January 25, 2005) "Controlling the Nanostructure of Polymer Photovoltaic Cells and Transistors"
66. Eindhoven University of Technology, Netherlands (January 24, 2005) "Fundamental Processes in Organic Photovoltaic Cells"
67. IBM Almaden, Almaden, CA (October 26, 2004) "Charge Transport in Conjugated Polymers for Photovoltaic and Transistor Applications"
68. University of Minnesota, Department of Chemical Engineering and Materials Science, Minneappolis, MN (February 3, 2004) "Tuning the Nanostructure of Semiconducting Polymers to Make Better Photovoltaic Cells, Transistors and Light-Emitting Diodes"
69. Dow Chemical Company, Midland, MI (December 17, 2003) "Enhanced Emission from Polymer LEDs with Stamped Bragg Gratings"
70. Dupont, Wilmington, DE (December 5, 2003) "Improving the Structure of Semiconducting Polymers for Photovoltaic Cells and Transistors"
71. Lockheed-Martin, Palo Alto, CA (October, 30 2003) "Infiltrating Semiconducting Polymers into Mesoporous Titania for Photovoltaic Applications"
72. Tulane University, New Orleans, LA (September 9, 2003) "Semiconducting Polymer Transistors and Photovoltaic Cells"
73. University of Iowa, Iowa City, IA (September 8, 2003) "Semiconducting Polymer Transistors and Photovoltaic Cells"
74. OSRAM, Santa Clara, CA (August 20, 2003) "Enhanced Emission from Polymer LEDs with Stamped Bragg Gratings"
75. National Renewable Energy Lab (a Department of Energy Facility), Golden, CO (July 11, 2003) "Infiltrating Semiconducting Polymers into Mesoporous Titania for Photovoltaic Applications"
76. University of Florida, Gainesville, FA (December 19, 2002) "Semiconductor Polymer LEDs, Transistors and Photovoltaic Cells"
77. SRI, Menlo Park, CA (September 26, 2002) "Infiltrating Semiconducting Polymers into Mesoporous Titania for Photovoltaic Applications"
78. Kodak, Rochester, NY (September 18, 2002) "Semiconductor Polymer LEDs, Transistors and Photovoltaic Cells"
79. Nanosolar, Belmont, CA (August 16, 2002) "Strategies for Making Better Polymer Photovoltaic Cells"
80. General Electric, Niskayuna, NY (July 26, 2002) "Improving the Quality of Light from Polymer LEDs"
81. Opsys, Fremont, CA (June 7, 2002) "Improving the Quality of Light from Polymer LEDs"
82. National Renewable Energy Lab (a Department of Energy Facility), Golden, CO (June, 21 2002) "Improving the Efficiency of Polymer Photovoltaic Cells"

83. Pacific Northwest Laboratory, Richland, WA (June 14, 2002) "Infiltrating Semiconducting Polymers into Mesoporous Titania for Photovoltaic Applications"
84. Palo Alto Research Center, Palo Alto, CA (May 31, 2002) "Semiconducting Polymer Field Effect Transistors"
85. UC Berkeley. Berkeley, CA (September 14, 2001) "Semiconducting Polymer Light-emitting Diodes and Photovoltiac Cells"
86. OSRAM Corporation, San Jose, CA (May 16, 2001) "Narrow-band emission from Polymer LEDs Doped with Rare-earth Complexes"
87. Stanford Mechanical Engineering Department, Stanford, CA (May 24, 2001) "Semiconducting Polymer Light-emitting Diodes and Photovoltiac Cells"
88. Palo Alto Research Center Palo Alto, CA (May 30, 2001) "Semiconducting Polymer Light-emitting Diodes and Photovoltiac Cells"
89. Agilent, Palo Alto, CA (March 8, 2001) "Narrow-band emission from Polymer LEDs Doped with Rare-earth Complexes"
90. Lucent, Murray Hill, NJ (February 20, 2001) "Semiconducting Polymer Light-emitting Diodes and Lasers"

TUTORIALS

1. "Tandem Solar Cells," IEEE 47th PVSC Virtual Meeting, June 15-Aug 21 2020.
2. "Solar Cells 101," GCEP Annual Meeting, Stanford, CA October 4, 2011.
3. "Organic Solar Cells," SPIE's Annual Meeting, San Diego, CA, August 14-18, 2006.
4. "Organic Photovoltaic Cells," Photovoltaic Specialists Conference, Lake Bueno Vista, FA, January 3, 2005.
5. "Organic Semiconductors and Electronics," Stanford Engineering and Science Institute: Nanoscience and Nanotechnology 2003, Stanford, CA, August 18-22, 2003.

PANELS

1. Perovskite Solar Cells panel in a 2-Day conference on Chemistry and Materials Science:Enabling a Sustainable Energy Future; ACS and MRS, November 3, 2021.
2. "Research Needs for Thin-film Photovoltaic Technologies," California Energy Commission, Sacramento, CA, September 7, 2018.
3. "The Stanford Environment & Energy Panel Series: Clean Energy R&D" The National Press Club Washington D.C. January 10, 2017.
4. "Workshop on Organic Solar Cells," National Science Foundation and Office on Naval Research, Arlington, VA, September 20-21, 2012.
5. "How Academia Can Help Industry," Solar Exchange West 2012, Berkeley, CA, August 1, 2012.
6. "The Future of Energy," Wonderfest, Stanford, CA, November 1, 2008

7. "Nanotechnology: What Nanotech Developments Are on the Immediate Horizon?" The Bay Area Law School Technology Conference, Stanford, CA, April 9, 2005
8. Workshop on Basic Research Needs for Effective Solar Energy Utilization, North Bethesda, MD, April 18-21, 2005
9. EPRI Workshop on Nanotechnology and the Electricity Enterprise, Palo Alto, CA, April 26, 2005

PROFESSIONAL AFFILIATIONS

- American Chemical Society
- Materials Research Society

PROFESSIONAL SERVICE

- Organized the session "Organic optoelectronics" for the Materials Research Society Fall 2001 Conference.
- Organized the session "Novel Materials" for the 2005 Photovoltaic Specialist Conference
- Organized the session "Organic and Nanostructured Composite Photovoltaics and Solid State Lighting" for the Materials Research Society Fall 2005 Conference.
- Co-edited a special issue (December 2005) of the Journal of Materials Research on Materials for Renewable Energy
- Organized the session "Nanostructured Solar Cells" for the Fall 2007 Materials Research Society Conference
- Editorial Board Member for *Advanced Materials* (2008-2015)
- Co-organized the symposium on Organic Photovoltaics for the 2014 European Materials Research Society
- Coorganizer of the 2015 International Hybrid Organic Photovoltaic Conference, May 2015.
- Coorganizer of the 2016 Office of Naval Research Workshop Perovskite Solar Cell Stability, August 2016.
- Technical Review Committee member for the Department of Energy's Sunshot Photovoltaic Roadmap
- Committee for Selecting an Editor for ACS Energy Letters (2015)
- Materials Research Society Awards Committee (2016-)
- Advisory Board for *Joule* (2017-)
- Co-organized the symposium on Low-Cost Tandem Photovoltaic Cells for the Spring Materials Research Society Meeting (2018)
- Editorial Advisor Board for *Applied Physic Letters Energy* (October 2022-)

DEPARTMENT AND UNIVERSITY SERVICE

2022	Organized the “Innovations in Materials Science and Engineering Symposium” at the University of Colorado
2019-	Admission Committee for the MSE Program
2020-	Faculty Mentor for an Assistant Professor
2019-2020	Search Committee for a RASEI Director
2019-2020	Chair of Materials Science and Engineering Faculty Search Committee
2018-19	Materials Science and Engineering Faculty Search Committee
2016-17	Faculty Mentor to the Stanford Cross Country and Track and Field Teams
2015	Committee for the School of Engineering’s Future Initiative
2014	Preplanning Committee for the School of Engineering’s Future Initiative
2014-15	Materials Science and Engineering Faculty Search Committee
2014-	Solar Theme leader for the Global Climate and Energy Project
2013-2015	Co-Chair of Graduate Admissions for Materials Science and Engineering
2012-	Academic Director of the Energy Innovation and Emerging Technologies Certificate for the Stanford Center for Professional Development
2011-2013	UTRC-1 Fellowship in Sustainable Energy Research Committee
2008-2010	Geballe Laboratory for Advanced Materials Management Committee
2007-	Global Climate and Energy Project Faculty Committee
2005	Organized the Stanford Photonics Research Center’s workshop on Organic Photonics
2003- 2005	Organized Visitor’s Day for prospective graduate students
2002-03	Served on the Biomaterials Faculty Search Committee
2002- 2008	Organized the Spring MSE colloquium series
2002	Improved the MSE Department website

McGehee's Former PhD students

1. Kevin Coakley
   Thesis: "Photovoltaic Cells Made from Conjugated Polymers Infiltrated into Ordered Nanoporous Hosts"
   Graduation Date: Winter 2004/2005

2. Jonathan Ziebarth
   Thesis: "A theoretical and Experimental Investigation of Light Extraction from Polymer Light-Emitting Diodes"
   Graduation Date: Winter 2004/2005

3. Regis Joseph Kline
   Thesis: "A Fundamental Study of the Charge Transport and Morphology of Regioregular Poly(3-Hexylthiophene)"
   Graduation Date: Winter 2004/2005

4. Yuxiang Liu
   Thesis: "Using Resonance Energy Transfer to Improve Exciton Harvesting in Organic-Inorganic Hybrid Solar Cells"
   Graduation Date: Winter 2005/2006

5. Chiatzon Goh
   Thesis: "Charge Extraction from Nanostructured Hybrid Organic-Inorganic Photovoltaic Cells"
   Graduation Date: Fall 2006

6. Vignesh Gowrishankar
   Thesis: "Nanostructured Inorganic/Polymer Solar Cells"
   Graduation Date: Fall 2007

7. Shawn Scully
   Thesis: "Nanostructured Inorganic/Polymer Solar Cells"
   Graduation Date: Winter 2008/2009

8. Brian Hardin
   Thesis: "Increased Light Harvesting in Dye-Sensitized Solar Cells Using Forster Resonant Energy Transfer"
   Graduation Date: Winter 2010/2011

9. Whitney Gaynor
   Thesis: "High Performance Solution Processed Transparent Electrodes for Optoelectronic Devices"
   Graduation Date: Winter 2010/2011

10. Michael Rowell

Thesis: “Carbon Nanotube Transparent Electrodes for Photovoltaic Applications”
Graduation Date: Summer 2011

11. George Burkhard
Thesis: “Exciton Recombination in the Fullerene Phase of Bulk Heterojunction Organic Solar Cells”
Graduation Date: Summer 2011

12. I-Kang Ding
Thesis: “Pore Filling and Light Trapping I Solid-State Dye-sensitized Solar Cells”
Graduation Date: Fall 2011

13. Craig Peters
Thesis: “Lifetime and Reliability of Polymer Solar Cells”
Graduation Date: Winter 2011/2012

14. Nicky Cates Miller
Thesis: “Molecular packing in organic solar cells”

15. Eric Hoke
Thesis: “Factors that Influence the Open Circuit Voltage and Stability of Polymer: Fullerene Bulk Heterojunction Solar Cells”

16. Jason Bloking
Thesis: “Small Molecule Acceptors for Organic Photovoltaics”

17. George Margulis
Thesis: “Enhancing Light Harvesting in Dye-Sensitized Solar Cells”

18. Zach Beiley
Thesis: “Organic-Inorganic Hybrid Tadem Photovoltaics”
Spring 2012

19. Greyson Christoforo (joint with Alberto Salleo)
Thesis: “Deposition and Post-Processing Techniques for Silver Nanowire Transparent Electrodes”
Anticipated Graduation Date: Summer 2013

20. William Nguyen
Thesis: Sensitizing Dyes for Solar Cells
Anticipated Graduation Date: Spring 2014

21. Toby Sachs-Quintana
Thesis: “Degradation and Stabilization of Organic Photovoltaics”
Graduation Date: Spring 2015

22. Sean Sweetnam
    Thesis: Ground State Charge Transfer Complexes in Bulk Heterojunction Solar Cells
    Graduation Date: Spring 2015

23. Tim Burke
    Thesis: Modeling of Organic Solar Cells
    Anticipated Graduation Date: Summer 2015

24. Colin Bailie
    Thesis: Perovskite Tandem Solar Cells
    Graduation Date: Summer 2015

25. Jon Bartelt
    Thesis: Electronic Processes in High Efficiency Polymer Solar cells
    Graduation Date: Spring 2016

26. Billy Mateker
    Thesis: Improving the Long-Term Performance of Organic Solar Cells
    Graduation Date: Spring 2016

27. Andrea Bowring
    Thesis: Perovskite Solar Cells
    Graduation Date: Summer 2017
28. Rebecca Belisle (Spring 2018)
29. Rongrong Cheachereon (Summer 2018)
30. Kevin Bush (Spring 2018)
31. Dan Slotcavage (Spring 2018)
32. Rohit Prasanna (Summer 2019)
33. Caleb Boyd (Summer 2020)
34. Michael Strand (Fall 2020)
35. Tyler Hernandez (Fall 2020)
36. Eli Wolf (Spring 2021)
37. Andrew Yeang (Fall 2022)
38. Isaac Gould (Summer 2023)
39. Gabe McAndrews (Summer 2024)
40. Samual Johnson (Fall 2024)

McGehee's Post-Doctoral Advisees

Melissa Summers, Erik Garnett (AMOLF), Eva Unger (Max Plank Institute), Ken Graham (U. Kentucky), Mark Topinka, Roman Gysel, Chris Barile, Tomas Liejtens, Hsin-Ping Wang, Luca Bertoluzzi, Jixian Xu, Jeremie Werner, Jay Patel, Ziliang Li