

Benjamin Highsmith Meekins

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Curriculum Vitae

Work Experience

2016-present: Research Assistant Professor, Chemical Engineering, University of South Carolina

2015-2016: Physical Chemistry Lab Coordinator, Chemistry, U. of Texas at Austin

2012-2014: Postdoctoral Researcher (Dr. Allen Bard), Chemical Engineering, U. of Texas at Austin

2007-2012: Graduate Research Assistant (Dr. P. V. Kamat), Chemical Engineering, Notre Dame

Education

Ph.D., Chemical and Biomolecular Engineering, 2012, U. of Notre Dame, Advisor: P. V. Kamat

M.S., Chemical and Biomolecular Engineering, 2010, U. of Notre Dame, Advisor: P. V. Kamat

B.S., Chemical Engineering, U. of South Carolina, Columbia, SC, 2007

Society Membership

Electrochemical Society (ECS); American Institute of Chemical Engineers (AIChE)

Publications

1. Maximilian B. Gorenssek, Benjamin Meekins, Hector Colon-Mercado, John Weidner. *Parametric study of operating conditions of an SO₂-depolarized electrolyzer*. **Int. J. of Hydrogen Energy**. 2020, 45(43), 22408-22418.
2. B. H. Meekins, Anthony B. Thompson, Varsha Gopal, Bahareh A Tavakoli Mehrabadi, Mark C Elvington, Prabhu Ganesan, Ty A. Newhouse-Illige, Adam W. Sheperd, Lawrence E. Scipioni, James A. Greer, John C Weiss, John W Weidner, Hector Colon-Mercado. *In-situ and ex-situ comparison of the electrochemical oxidation of SO₂ on carbon supported Pt and Au catalysts*. **Int. J. of Hydrogen Energy**. 2020, 45(3), 1940-1947.
3. Kennedy, A., & Meekins, B. *Combustion synthesis and photoelectrochemical characterization of gallium zinc oxynitrides*. **J. Mat. Res.** 2018, 33(23), 3971-3978. (DOI: 10.1557/jmr.2018.402)
4. Meekins, B. H. *Detection of Single Metal Nanoparticle Collision Events in Non-Aqueous Media*. **Phys. Chem. Chem. Phys.** 2017, 19 (26), 17256-17262. (DOI: 10.1039/C7CP03042H)
5. Ki Min Nam, Hyun S. Park, Heung Chan Lee, Benjamin H. Meekins, Kevin C. Leonard, and Allen J. Bard. *Compositional Screening of the Pb-Bi-Mo-O System. Spontaneous Formation of a Composite of p-PbMoO₄ and n-Bi₂O₃ with Improved Photoelectrochemical Efficiency and Stability*, **J. Phys. Chem. Lett.** 2013, 4, pp 2707–2710 (DOI: 10.1021/jz401334k)

6. Meekins, B. H.; Lin, Y.-C.; Manser, J. S.; Manukyan, K.; McGinn, P. J.; Mukasyan, A.; Kamat, P. V. *Photoactive Porous Silicon Nanopowder*, **ACS Appl. Mater. Interfaces**. 2013, 5 (8), 2943-2951. (DOI: 10.1021/am3031745)
7. Meekins, B. H.; Kamat, P. V. *Role of Water Oxidation Catalyst IrO₂ in Shuttling Photogenerated Holes Across TiO₂ Interface*. **J. Phys. Chem. Lett.** 2011, 2, 2304-2310. (<http://dx.doi.org/10.1021/jz200852m>)
8. Meekins, B. H.; Kamat, P. V. *Got TiO₂ Nanotubes? Lithium Ion Intercalation can Boost Their Photoelectrochemical Performance Three-Fold*. **ACS Nano** 2009, 3, 3437–3446. (<http://dx.doi.org/10.1021/nn900897r>)

Selected Funded Projects

1. “Contamination of Fuel Cell Catalysts by Component Leachates”, funded by Nuvera Fuel Cells
2. “Project 21: Macroscopic monolithic Pd/Graphene catalysts for regioselective electrochemical oxidation of alkenes”, CERCaS award 10009413 – USC Subcontract
3. “Project 32: Selective Continuous Flow Electrocatalytic Oxidation of Alkenes”, CeRCaS award 10010598 – USC Subcontract

Collaborators within the last 48 months

Dr. Hector Colon-Mercado, SRNL; Dr. Sirivatch Shimpalee, U. of South Carolina; Dr. John Monnier, U. of South Carolina; Dr. Maximilian Gorenssek, SRNL; Dr. John W. Weidner, U. of Cincinnati; Dr. Erdem Sasmaz, U. of South Carolina; Dr. Clifton Harris, Winthrop Univ.; Dr. Carlos Castano, VCU; Dr. B. Frank Gupton, VCU; Dr. Claudio Corgnale, Greenway Energy

Popular Press

Weekly Outreach “*Open Science Presentations*” (https://www.twitch.tv/open_science), May 2020-present

Narrated Presentation “*The Role of IrO₂ in Mediating Hole Transfer at the TiO₂ Interface*” (<http://youtu.be/okO2ZhKVpb4>), 2011.

Scivee TV Video Perspective “*Tailored TiO₂-SrTiO₃ Heterostructure Nanotube Arrays for Improved Photoelectrochemical Performance*” (<http://www.scivee.tv/node/27601>), 2011.