

Mark D. Allendorf, Ph.D., ECS Fellow

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Google Scholar: <https://scholar.google.com/citations?user=Fp30k4sAAAAJ&hl=en>

Research Profile Summary

Dr. Mark Allendorf is a Senior Scientist in the Center for Chemistry, Combustion, and Materials Science at Sandia National Laboratories in Livermore, CA, where he is Co-Director and founder of the DOE Hydrogen Materials Advanced Research Consortium (HyMARC), involving >60 researchers and five DOE National Laboratories (total FY23 funding \$9.0M). His primary research interests include hydrogen storage and hydrogen-material interactions; properties and applications of metal-organic frameworks (MOFs) for electronic devices, luminescence and radiation detection, and catalysis; and machine learning for materials discovery. He has also lead projects focused on the kinetics of chemical vapor deposition, high-temperature gas-phase thermochemistry, and catalytic combustion. Currently, he leads an integrated research team comprising experts in synthesis, quantum-chemistry, homogeneous catalysis, and metal-hydrogen interactions. During 2020-2022 he was awarded research grants totaling \$8.5M+ as PI or co-PI from sources including industry (Southern California Gas), DOE/Hydrogen Fuel Cell Technologies), DOE/NNSA, and Sandia Laboratory Research and Development Program. He has 178 reviewed journal articles (citations: >31,700; h-index: 71) and 14 patents.

Professional Appointments

Spring 2022	Benedict Distinguished Visiting Professor , Dept. of Chemistry, Carleton College, Northfield, MN
2015 – present	Co-Director , Hydrogen Advanced Materials Research Consortium (HyMARC)
2015 – 2017	Visiting International Professorship , Ruhr Universität Bochum, Germany
2012 – present	Senior Scientist , Sandia National Laboratories
2007 – 2010	Distinguished Visiting Scholar , Nanoscience and Nanoengineering Institute, University of California, Berkeley
2008 – 2011	Research Group Leader , Energy Nanomaterials Dept. Sandia National Laboratories
2004 – 2007	Research Group Leader , Microfluidics Dept., Sandia National Laboratories
1999 – 2012	Distinguished Member of Technical Staff , Sandia National Laboratories
1993 – 1999	Principal Member of Technical Staff/Project Lead , Industrial & Applied Combustion Department, Sandia National Laboratories
1986 – 1993	Senior Member of Technical Staff , Combustion Research Facility, Sandia National Laboratories

Education

1982 – 1986	Stanford University, Ph.D., Inorganic Chemistry. Thesis Title: “Magneto-Optical Studies of Laccase and a Small-Molecule Spectral Analogue” (thesis advisor Prof. E. I. Solomon)
1980 – 1981	Massachusetts Institute of Technology, graduate student, Prof. E. I. Solomon
1976 – 1980	Washington University, A.B. Chemistry, Magna cum Laude, Phi Beta Kappa

Appointments, Professional Service, and Affiliations

2018 – 2022	Vice Chair, International MOF Commission of the Int. Zeolite Assoc.
2016 – 2022	International Energy Agency Expert for Hydrogen Storage Tasks 32 and 40.
2013 – 2015	Chair, Sandia Truman Distinguished Lecturer committee
2002 – 2005	Chair, Sandia Truman Distinguished Lecturer committee
1997 – 1999	Chair, High-Temperature Materials Division, The Electrochemical Society
1995 – 1997	Senior Vice-Chair, High-Temperature Materials Division, The Electrochemical Society

1993 – 1995 Junior Vice-Chair, High-Temperature Materials Division, The Electrochemical Society
 1991 – 1993 Treasurer, High-Temperature Materials Division, The Electrochemical Society
 1995 – 2005 Member, International Advisory Board, EUROCV D Conference

Honors, Awards, and Recognition

Benedict Distinguished Visiting Professor of Chemistry, Carleton College	2022
Dresden Senior Fellowship, Chair of Inorganic Chemistry, Technical University	2018
R&D100 Award “Triplet Harvesting Plastic Scintillators”	2014
Sandia Employee Recognition Award for Teamwork	2014
Sandia Employee Recognition Award for Teamwork	2010
Sandia Award for Excellence in Research	2008
Sandia Employee Recognition Award for Teamwork	2008
President, The Electrochemical Society	2006-2007
Sandia Employee Recognition Award for Teamwork	2003
NASA/Glenn Research Center Award, best journal publication in materials science	2007
Best paper award, ASME Solar 2006 Conference	2006
Fellow, The Electrochemical Society	2002
Sandia E. Karl Bastress Award for Applied Combustion Research	1997
Sandia Employee Recognition Award for Leadership	1997
Sandia Employee Recognition Award for Teamwork	1995

Reviewing and Editorial Activities

2015 Reviewer, National Science Foundation (USA) Hybrid Materials Proposal Review Panel
 2013 DOE Molecular Foundry Proposal Study Panel
 2008 – 2013 COINS National Science Foundation (USA) Engineering Center, UC Berkeley, External Scientific Advisory Panel
 2000 – 2007 Editorial Board Member, *Advanced Materials/CVD*
 2000 – 2005 German Research Foundation (DFG) Focus Program International Advisory Panel
Recent (2017 – present) journal reviewing: *ACS Adv. Energy Mater.*, *ACS Adv. Mater. Interfaces*, *Adv. Energy Mater.*, *Adv. Funct. Mater.*, *Adv. Mater.*, *Adv. Opt. Mater.*, *Angew. Chem.*, *Appl. Phys. Lett.*, *Catal. Sci. Tech.*, *Chem. Eur. J.*, *Chem. Commun.*, *Chem. Mater.*, *Chem. Phys. Phys. Chem.*, *Chem. Rev.*, *Int. J. Hydrogen Energy*, *J. Amer. Chem. Soc.*, *J. Phys. Chem. C*, *J. Phys. Chem. Lett.*, *Nano Lett.*, *Nat. 2D Mater.*, *Nat. Chem.*, *Nat. Commun.*, *Nat. Mater.*, *Nature*, *PNAS*, *Science*.

Organization of Scientific Meetings and Conferences

2017 **Organizer**, “Surmounting Fundamental Challenges to Vehicular Hydrogen Storage Using Soft X-ray Techniques,” workshop held at Advanced Light Source Annual Users Meeting, Berkeley, CA
 2016 **Chair**, *5th Int. Conf. Metal-Organic Frameworks & Open-Framework Compounds (MOF2016)* (>500 participants)
 2014 – 2022 **Member, International Advisory Committee**, *International Conference on Metal-Organic Frameworks*
 2007 **Chair**, *Nanoporous Materials*, Electrochemical Society Spring Meeting, Chicago, USA
 2003 **Co-Chair**, *Int. Conf. Chemical Vapor Deposition/EUROCV D Conf.*, Paris, France (350 participants)
 2000 **Co-Chair**, *Int. Conf. Chemical Vapor Deposition/EUROCV D Conf.* Toronto, Canada (350 participants)
 1997 **Co-Chair**, *Int. Conf. Chemical Vapor Deposition/EUROCV D Conf.*, Paris, France (350 participants)
 1996 **Co-Chair**, *Int. Conf. Chemical Vapor Deposition*, Los Angeles, USA (250 participants)
 1996 – 2005 **Member, International Advisory Board**, *EUROCV D Conference*

Major collaborations (last five years)

Prof. Chihaya Adachi (Kyushu Univ.)
Dr. F. Patrick Doty (Sandia National Laboratories, Livermore, CA)
Prof. David Fairen-Jimenez (University of Cambridge)
Prof. Roland Fischer (Technical University of Munich)
Prof. Tom Gennett (Colorado School of Mines and National Renewable Energy Laboratory)
Prof. Stefan Kaskel (Technical University Dresden)
Prof. Sanliang Ling (Univ. Nottingham)
Prof. Bettina Lotsch (Max Planck Institute for Solid-State Research and Univ. of Munich)
Dr. David Prendergast (Lawrence Berkeley National Laboratory)
Prof. Martin Sahlberg (Uppsala Univ.)
Prof. Gabor Somorjai (Univ. California Berkeley)
Dr. Vitalie Stavila (Sandia National Laboratories, Livermore, CA)
Dr. A. Alec Talin (Sandia National Laboratories, Livermore, CA)
Dr. Jeffery Urban (Lawrence Berkeley National Laboratory)
Dr. Brandon Wood (Lawrence Livermore National Laboratory)

Supervision of Graduate Students, Postdoctoral Fellows, and Professional Mentoring

2015 – present Senior mentor for Early Career Sandia Employees

1989 – present Postdoctoral advising (28 total)

Elizabeth Blanquet (1989); Thomas H. Osterheld (1993 – 1995); Michelle T. Schulberg (1995 – 1996); Anthony H. McDaniel (1996 – 1998); J. W. Medlin (2002 – 2003); Yongkee Chae (2004 – 2006); Andrew J. Skulan (2006 – 2008); Christina A. Bauer (2006 – 2008); Ronald J. T. Houk (2008 – 2010); Raghunandan K. Bahkta (2009 – 2011); Benjamin W. Jacobs (2009 – 2010); Patrick L. Feng (2010 – 2012); John J. Perry IV (2011 – 2013); Scott T. Meek (2010 – 2012); Kirsty Leong (2014 – 2016); Ryan Zarkesh (2019); Jonathan W. Brown (2016 – 2017); Andrew Ullman (2016 – 2018); Nicholas C. Burtch (2017 – 2018); Timothy C. Wang (2019 – 2020); James White (2018 – 2020); Andreas Schneeman (2020 – 2021); Jonathon L. Snider (2019 – 2021); Matthew Witman (2019 – 2021); Joseph E. Reynolds (2020 – 2022); Ashley Hellman (2021 – 2023); William Taylor (2023-present); Nicole Torquato (2023-present).

Ph. D. student advising

2013 -- 2015 Ruhr Universität Bochum (Germany): Min Tu

2017 – 2019 Technical Universität Munich (Germany): Christian Schneider

Memberships in Scientific Societies

2016 – present Member, American Chemical Society (ACS), USA

1992 – present Member, Materials Research Society (MRS), USA

1988 – present Member, The Electrochemical Society (ECS), USA

Publications

178 journal articles; **60** conference proceeding papers; H-index **71**; i10 index **187**; **>31,700** citations (Google Scholar); **55** articles with **≥100** citations; **10** articles featured on journal covers; **7** edited books.

Referred Journal Publications

1. M. D. Allendorf, D. J. Spira, E. I. Solomon “Low-Temperature Magnetic Circular Dichroism Studies of Native Laccase: Spectroscopic Evidence for Exogenous Ligand Bridging at a Trinuclear Copper Active Site,” *Proc. Natl. Acad. Sci. USA* **82** (1985), 3063.
2. D. J. Spira-Solomon, M. D. Allendorf, E. I. Solomon “Low-Temperature Magnetic Circular Dichroism Studies of Native Laccase: Confirmation of a Trinuclear Copper Active Site,” *J. Am. Chem. Soc.* **108** (1986), 5318.
3. M. D. Allendorf, R. E. Palmer “Spontaneous Raman Spectroscopy in Flames Containing High Concentrations of Silica Particles,” *High Temp Sci.* **26** (1989), 45.

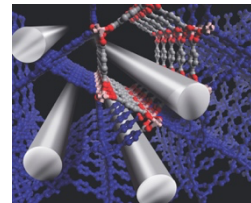
4. P. K. Ross, M. D. Allendorf, E. I. Solomon "Detailed Spectral Studies of Copper Acetate: Excited-State Interactions in Copper Dimers," *J. Amer. Chem. Soc.* **111** (1989), 4009.
5. M. D. Allendorf, J. R. Bautista, E. Potkay, "Temperature Measurements in a Vapor Axial Deposition Flame by Spontaneous Raman Spectroscopy," *J. Appl. Phys.* **66** (1989), 5046.
6. M. D. Allendorf, R. J. Kee, "A Model of Silicon Carbide Chemical Vapor Deposition," *J. Electrochem Soc.* **138** (1991), 841.
7. R. H. Hurt, M. D. Allendorf "Model of Particle-Vapor Codeposition with Application to Ceramic Materials Synthesis," *AIChE J.* **37** (1991), 1485.
8. M. D. Allendorf, D. A. Outka "The Adsorption of H-Atoms on Polycrystalline-Silicon Carbide," *Surf. Sci.* **258** (1991), 177.
9. M. D. Allendorf, C. F. Melius "Theoretical Study of the Thermochemistry of Molecules in the Si-C-H Systems," *J. Phys. Chem.* **96** (1992), 428.
10. M. D. Allendorf, C. F. Melius "Theoretical Study of the Thermochemistry of Compounds in the Si-C-Cl-H System," *J. Phys. Chem.* **97** (1992), 720.
11. M. D. Allendorf, "Equilibrium Predictions of the Role of Organosilicon Compounds in the Chemical Vapor Deposition of Silicon Carbide," *J. Electrochem. Soc.* **140** (1993), 747.
12. M. D. Allendorf, R. H. Hurt, N. Yang, P. Reagan, M. Robbins "Deposition of Silicon Carbide Using the Chemical Vapor Composites Process: Process Characterization and Comparison with the RASSPVDN Model Predictions" *J. Mater. Sci.* **8** (1992), 1651.
13. J. Warnatz, M. D. Allendorf, R. J. Kee, M. E. Coltrin "A Model of Elementary Chemistry and Fluid Mechanics in the Combustion of Hydrogen on Platinum Surfaces," *Comb. Flame* **96** (1994), 393.
14. T. H. Osterheld, M. D. Allendorf, C. F. Melius "Unimolecular Decomposition of Methyltrichlorosilane: RRKM Calculations," *J. Phys. Chem.* **98** (1994), 6995.
15. L. N. Krasnoperov, J. T. Niiranen, D. Gutman, C. F. Melius, M. D. Allendorf "Kinetics and thermochemistry of Si(CH₃)₃+NO reaction: direct determination of a Si-N bond energy," *J. Phys. Chem.* **99** (1995), 14347.
16. M. D. Allendorf, C. F. Melius, P. Ho, M. R. Zachariah "Theoretical Study of the Thermochemistry of Molecules in the Si-O-H System," *J. Phys. Chem.* **99** (1995), 15285.
17. M. T. Schulberg, M. D. Allendorf, D. A. Outka "The Adsorption of Hydrogen Chloride on Polycrystalline-Silicon Carbide," *Surf. Sci.* **341** (1995), 262.
18. M. T. Schulberg, M. D. Allendorf, D. A. Outka "Aspects of Nitrogen Surface Chemistry Relevant to TiN Chemical Vapor Deposition," *J. Vac. Sci. Tech. A.* **14** (1996), 3228.
19. M. D. Allendorf, C. F. Melius "Thermochemistry of Molecules in the B-N-H-Cl System: *Ab initio* Predictions Using the BAC-MP4 Method," *J. Phys. Chem. A* **101** (1997), 2670.
20. F. Teyssandier, M. D. Allendorf "Thermodynamics and Kinetics of Gas-Phase Reactions in the Ti-Cl-H System," *J. Electrochem. Soc.* **145** (1998), 2167.
21. A. H. McDaniel, M. D. Allendorf "A Flow-Tube Investigation of the High-Temperature Reaction between BCl₃ and NH₃," *J. Phys. Chem.* **102** (1998), 7804.
22. M. D. Allendorf, C. F. Melius "Understanding Gas-Phase Reactions in the Thermal CVD of Hard Coatings Using Computational Methods," *Surf. Coatings Technol.* **108** (1998), 191-199.
23. C. W. Bauschlicher Jr., C. F. Melius, M. D. Allendorf "Gallium compounds, a possible problem for the G2 approaches," *J. Chem. Phys.* **110** (1999), 1.

24. M. D. Allendorf, C. F. Melius, C. W. Bauschlicher, Jr. "Heats of Formation and Bond Energies in Group III Compounds," *J. de Physique IV France* **9** (1999), 23-31.
25. C. Raffy E. Blanquet, M. Pons, C. Bernard, C. F. Melius, M. D. Allendorf "Contribution to the Modeling of CVD Silicon Carbide Growth," *J. de Physique IV France* **9** (1999), 205-212.
26. D. K. Zerkle, M. D. Allendorf, M. Wolf, O. Deutschmann "Modeling of On-Line Catalyst Addition Effects in a Short Contact Time Reactor," *Twenty-Eighth Symp. (Int.) Comb.* **28** (pt.1) (2000), 1365-1372.
27. A. H. McDaniel, M. D. Allendorf "The Autocatalytic Behavior of Trimethylindium During Thermal Decomposition," *Mat. Chem.* **12** (2000), 450.
28. C. F. Melius, M. D. Allendorf "Bond Additivity Corrections for Quantum-Chemistry Methods," *J. Phys. Chem. A* **104** (2000), 2168.
29. D. K. Zerkle, M. D. Allendorf, M. Wolf, O. Deutschmann "Understanding Homogeneous and Heterogeneous Contributions to the Partial Oxidation of Ethane in a Short Contact Time Reactor," *J. Catal.* **196** (2000), 18.
30. M. D. Allendorf, K. E. Spear "Thermodynamic Analysis of Refractory Corrosion in Glass Melting Furnaces," *J. Electrochem. Soc.* **148** (2001), B59.
31. M. D. Allendorf "Research Needs for Coatings on Glass. Summary of the U.S. Department of Energy Roadmapping Workshop," *Thin Solid Films* **392** (2001), 155.
32. R. S. Tranter, R. Sivaramakrishnan, K. Brezinsky, M. D. Allendorf "High Pressure, High Temperature Shock Tube Studies of Ethane Pyrolysis and Oxidation," *Phys. Chem. Chem. Phys.* **4** (2002), 2001.
33. S. de Persis, F. Teyssandier, A. H. McDaniel, M. D. Allendorf "Influence of Carbon Precursor on the Gas-Phase Chemistry of Titanium Carbide Chemical Vapor Deposition," *Adv. Mater./CVD* **8** (2002), 63.
34. M. D. Allendorf, C. F. Melius, B. Cosic, A. Fontijn "BAC-G2 Predictions of Thermochemistry for Gas-Phase Aluminum Compounds," *J. Phys. Chem. A* **106** (2002), 2629.
35. A. H. McDaniel, A. E. Lutz, M. D. Allendorf, S. F. Rice "Effects of Methane and Ethane on the Heterogeneous Production of Water from Hydrogen and Oxygen in Stagnation Flow," *J. Catalysis* **208** (2002), 21.
36. M. D. Allendorf, C. F. Melius "BAC-MP4 Predictions of Thermochemistry for Gas-Phase Compounds in the Si-H-O-Cl System," *J. Phys. Chem. A* **106** (2002), 6370.
37. K. E. Spear, M. D. Allendorf "Thermodynamic Analysis of Alumina Refractory Corrosion by sodium or potassium hydroxide in glass melting furnaces," *J. Electrochem. Soc.* **149** (2002), B551.
38. J. W. Medlin, M. D. Allendorf, "A theoretical study of the adsorption of acetylene and hydrogen on the (111) surfaces of Pd, Pt, Ni, and Rh", *J. Phys. Chem. B.* **107** (2003), 217.
39. J. W. Medlin, A. H. McDaniel, M. D. Allendorf, R. Bastasz, "Effects of Competitive carbon monoxide adsorption on the hydrogen response of Metal-Insulator-Semiconductor Hydrogen Sensors: the role of metal film morphology", *J. Appl. Phys.* **93** (2003), 2267.
40. R. H. Nilson, S. K. Griffiths, N. Yang, P. M. Walsh, M. D. Allendorf, B. Bugeat, O. Marin, K. E. Spear, G. A. Pecoraro, "Analytical Models for High-Temperature Corrosion of Silica Refractories in Glass-Melting Furnaces," *Glass Sci. Technol.* **76** (2003), 136.
41. I. M. B. Nielsen, C. L. Janssen, M. D. Allendorf "Ab initio predictions for thermochemical parameters for tin-oxygen compounds," *J. Phys. Chem. A.* **107** (2003), 5122.

42. J. D. Taylor; M. D. Allendorf; A. H. McDaniel, S. F. Rice “In-Situ Diagnostics and Modeling of Methane Catalytic Partial Oxidation on Pt in a Stagnation-Flow Reactor,” *Indust. Eng. Chem. Res.* **42** (2003), 6559.
43. Y. Chae, A. H. McDaniel, W. G. Houf, M. D. Allendorf “Stagnation-Flow Reactor Investigation of the Deposition of Tin Oxide from Monobutyltintrichloride,” *J. Electrochem. Soc.* **151** (2004), C527.
44. I. M. B. Nielsen, M. D. Allendorf “High-level ab initio thermochemical data for halides of chromium, manganese, and iron,” *J. Phys. Chem. A* **109** (2005), 928.
45. A. M. B. van Mol, G. R. Alcott, M. D. Allendorf “Tin oxide precursor chemistry and its link to coating properties,” *Amer. Ceram. Soc. Bull.*, **84** (2005), 37.
46. S. F. Rice, M. D. Allendorf “Detection of NaOH vapor in glass furnaces using excimer laser photofragmentation spectroscopy,” *Glass Sci. Technol.* **78** (2005), 45.
47. M. D. Allendorf, C. F. Melius “BAC-MP4 Predictions of Thermochemistry for Gas-Phase Tin Compounds in the Sn-H-C-Cl System,” *J. Phys. Chem. A* **109** (2005), 4939.
48. Y. Chae, W. G. Houf, A. H. McDaniel, M. D. Allendorf “Models for the Chemical Vapor Deposition of Tin Oxide from Monobutyltintrichloride,” *J. Electrochem. Soc.* **153** (2006), C309.
49. A. J. Skulan, I. M. B. Nielsen, C. F. Melius, M. D. Allendorf “BAC-MP4 Predictions of Thermochemistry for Gas-Phase Indium Compounds in the In-H-C-O-Cl System,” *J. Phys. Chem. A* **110** (2006), 281.
50. I. M. B. Nielsen, M. D. Allendorf, “Thermochemistry of the chromium hydroxides $\text{Cr}(\text{OH})_n$, $n = 2-6$, and the oxyhydroxide $\text{CrO}(\text{OH})_4$: Ab initio predictions,” *J. Phys. Chem. A* **110** (2006), no.11, 4093-4099.
51. A. M. B. van Mol, Y. Chae, A. H. McDaniel, M. D. Allendorf “Chemical vapor deposition of tin oxide: Fundamentals and applications,” *Thin Solid Films* **502** (2006), 72-78.
52. A. J. Skulan, I. M. B. Nielsen, C. F. Melius, and M. D. Allendorf “BAC-MP4 Predictions of Thermochemistry for Gas-Phase Antimony Compounds in the Sb-H-C-O-Cl System,” *J. Phys. Chem. A* **110** (2006), 5919.
53. J. A. Greathouse, M. D. Allendorf “The interaction of water with MOF-5 simulated by molecular dynamics,” *J. Amer. Chem. Soc.*, **128** (2006), 10678.
54. E. J. Opila, D. L. Myers, N. S. Jacobson, I. M. B. Nielsen, D. F. Johnson, J. K. Olminky, M. D. Allendorf “Theoretical and Experimental Investigation of the Thermochemistry of $\text{CrO}_2(\text{OH})_2(\text{g})$,” *J. Phys. Chem. A* **111** (2007), 1971, NASA Glenn Research Center – Materials & Structures Division 2007 Paper of the Year.
55. C. Bauer, T. Settersten, B. Patterson, T. Timofeeva, V. Liu, B. Simmons, M. D. Allendorf “Influence of connectivity and porosity on ligand-based luminescence in zinc MOFs,” *J. Amer. Chem. Soc.* **129** (2007), 7136.
56. D. F. Bahr, J. A. Reid, W. M. Mook, C. A. Bauer, R. Stumpf, A. J. Skulan, N. R. Moody, B. A. Simmons, M. M. Shindel, M. D. Allendorf “Mechanical properties of IRMOF-1 metal-organic framework crystals,” *Phys. Rev. B* **76** (2007), 184106.
57. J. A. Greathouse, M. D. Allendorf “Force field validation for molecular dynamics simulations of IRMOF-1 and other isorecticular zinc carboxylate coordination polymers,” *J. Phys. Chem. C* **112** (2008), 5795.

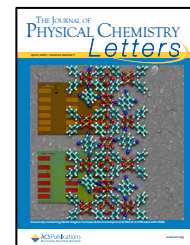
58. J. E. Miller, M. D. Allendorf, R. B. Diver, L. R. Evans, N. P. Siegel, J. N. Stuecker "Metal oxide composites and structures for ultra-high temperature solar thermochemical cycles," *J. Mater. Sci.* **43** (2008), 4714.
59. M. D. Allendorf, R. B. Diver, N. P. Siegel, J. E. Miller "Two-Step Water Splitting Using Mixed-Metal Ferrites: Thermodynamic Analysis and Characterization of Synthesized Materials," *Energy & Fuels* **22** (2008), 4115.
60. R. B. Diver, J. E. Miller, M. D. Allendorf, N. P. Siegel, R. E. Hogan "Solar Thermochemical Water-Splitting Ferrite-Cycle Heat Engines," *J. Solar En. Eng.* **30** (2008), 041001-1.
61. M. D. Allendorf, R. J. T. Houk, L. Andruszkiewicz, A. A. Talin, J. Pikarsky, A. Choudhury, K. A. Gall, P. J. Hesketh "Stress-Induced Chemical Detection Using Flexible Metal-Organic Frameworks," *J. Amer. Chem. Soc.* **130** (2008), 14404.
62. B. Dai, R. B. Rees, J. K. Johnson, M. D. Allendorf, D. S. Sholl, N. Zarkevich, D. D. Johnson "Influence of Surface Reactions on Complex Hydride Reversibility," *J. Phys. Chem. C*, **112** (2008), 18270.
63. M. D. Allendorf, C. A. Bauer, R. Bhakta, R. J. T. Houk "Luminescent Metal-Organic Frameworks," *Chem. Soc. Rev.* **38** (2009), 1330. Invited Review article.
64. F. P. Doty, C. A. Bauer, A. J. Skulan, P. G. Grant, M. D. Allendorf "Scintillating Metal Organic Frameworks: A New Class of Radiation Detection Materials," *Adv. Mater.* **21** (2009), 95.
65. J. A. Greathouse, T. L. Kinnibrugh, M. D. Allendorf "Adsorption and Separation of Noble Gases by IRMOF-1: Grand Canonical Monte Carlo Simulations," *Ind. Eng. Chem. Res.* **48** (2009), 3425.
66. R. K. Bhakta, J. L. Herberg, B. Jacobs, A. Highley, R. Behrens, Jr., N. W. Ockwig, J. A. Greathouse, and M. D. Allendorf "Metal-Organic Frameworks As Templates for Nanoscale NaAlH₄," *J. Amer. Chem. Soc.* **131** (2009), 13198.
67. R. J. T. Houk, B. W. Jacobs, F. El Gabaly, N. N. Chang, A. A. Talin, D. D. Graham, S. D. House, I. M. Robertson, M. D. Allendorf "Silver Cluster Formation, Dynamics, and Chemistry in Metal-Organic Frameworks," *Nano Lett.* **9** (2009), 3413.
68. Z. G. Wu, M. D. Allendorf, J. C. Grossman "Quantum Monte Carlo Simulation of Nanoscale MgH₂ Cluster Thermodynamics," *J. Amer. Chem. Soc.* **131** (2009), 13918.
69. K. C. Kim, M. D. Allendorf, V. Stavila, D. S. Sholl "Predicting Impurity Gases and Phases During Hydrogen Evolution from Complex Metal Hydrides using Free Energy Minimization Enabled by First-principles Calculations," *Phys. Chem. Chem. Phys.*, **12** (2010), 9918.
70. J. A. Greathouse, N. W. Ockwig, L. J. Criscenti, T. R. Guilinger, P. Pohl, M. D. Allendorf "Computational Screening of Metal-Organic Frameworks for Large-Molecule Chemical Sensing," *Phys. Chem. Chem. Phys.*, **12** (2010), 12621.
71. Y. Kobayashi, B. Jacobs, M. D. Allendorf, J. R. Long "Conductivity, Doping, and Redox Chemistry of a Microporous Dithiolene-Based Metal-Organic Framework," *Chem. Mater.* **22** (2010), 4120.
72. P. L. Feng, J. J. Perry IV, S. Nikodemski, S. T. Meek, M. D. Allendorf "Assessing the Purity of Metal-Organic Frameworks Using Photoluminescence: MOF-5, ZnO Quantum Dots, and Framework Decomposition," *J. Amer. Chem. Soc.*, **132** (2010), 15487.

73. B. W. Jacobs, R. J. T. Houk, M. R. Anstey, S. D. House, I. M. Robertson, A. A. Talin, M. D. Allendorf "Ordered metal nanostructure self assembly using metal-organic framework templates," *Chem. Sci.*, (2011), **2**, 411-416 [Inside journal cover](#).
74. S. T. Meek, J. A. Greathouse, M. D. Allendorf "Metal-Organic Frameworks: A Rapidly Growing Class of Versatile Nanoporous Materials," *Adv. Mater.* **23** (2011), 141. [Invited review article; journal cover](#).
75. B. Wong, I. M. B. Nielsen, M. D. Allendorf "Thermochemistry of Alane Complexes: A Theoretical and Experimental Investigation," *J. Phys. Chem. C.*, **115** (2011), 7778.
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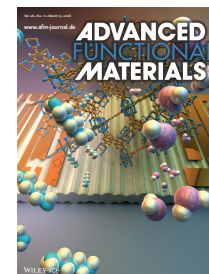
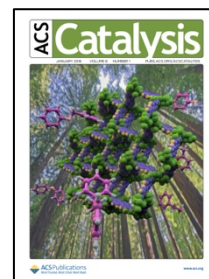


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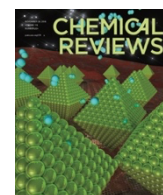


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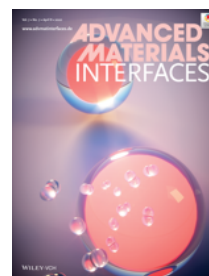


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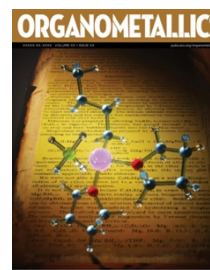
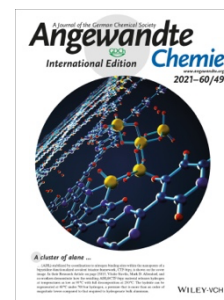
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2. *Fourteenth Int. Conf. on Chemical Vapor Deposition*, 192nd Meeting of The Electrochemical Society, (M. D. Allendorf, C. Bernard, T. M. Besmann, M. L. Hitchman organizers), Paris, France, Sept. 5 – 9, 1997.

3. *Fundamental Gas-Phase and Surface Chemistry of Vapor Deposition Processes*, 194th Meeting of The Electrochemical Society (M. D. Allendorf, M. R. Zachariah, L. Mountziaris, A. H. McDaniel organizers), Boston, MA, Oct. 31 – Nov. 4, 1999.
4. *Fifteenth Int. Conf. on Chemical Vapor Deposition*, 197th Meeting of The Electrochemical Society (M. D. Allendorf, M. L. Hitchman, T. M. Besmann, organizers), Toronto, Canada, May 14 – 18, 2000.
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6. *Sixth International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films*, 199th Meeting of The Electrochemical Society (K.B. Sundaram, M.J. Deen, D. Landheer, W.D. Brown, D. Misra, M.D. Allendorf and R.E. Sah, organizers), Washington, D.C., March 25 – 30, 2001.
7. *16th Int. Symp. on Chemical Vapor Deposition and EUROCV D-14* (M. D. Allendorf, T. M. Besmann, F. Maury, F. Teyssandier), 203rd Meeting of The Electrochemical Society, Paris, France, April 27 – May 2, 2003.
8. EUROCV D-15, The Electrochemical Society Proceedings Series (Co-organizer with R. A. Fischer, A. Devi, H. Parala, M. L. Hitchman), Bochum, Germany, Sept. 4 – 9, 2005.
9. Fifth Int. Conference on Metal-Organic Frameworks & Open Framework Compounds (M. D. Allendorf, S. Cohen, S. Mah, G. Shimizu, K. Walton, R. R. Willis organizers), Long Beach, CA, Sept. 11 – 15, 2016. MRS-sponsored special topics conference.

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1. M. D. Allendorf “Thermochemistry and Kinetics of Gas-Phase Reactions in the CVD of Ceramic Materials,” presented at *Stanford University*, February 7, 1996.
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3. M. D. Allendorf “Thermochemistry and Kinetics of Gas-Phase Reactions in the Chemical Vapor Deposition of Ceramic Materials” presented at *NASA Ames Research Center*, March 13, 1997.
4. M. D. Allendorf “Gas-Phase Thermochemistry and Kinetics Relevant to the CVD of Ceramic Materials: New Data for Process Models,” presented at *Laboratoire de Thermodynamique et Physicochimie Metallurgiques, Centre National de Recherche Scientifique (CNRS)*, Grenoble, France, September, 1997.
5. M. D. Allendorf “Gas-Phase Thermochemistry and Kinetics Relevant to the CVD of Ceramic Materials: New Data for Process Models,” presented at *Institut de Science et de Génie des Matériaux et Procédés, CNRS*, Perpignan, France, September, 1997.
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9. M. D. Allendorf "High-Temperature Thermochemistry and Kinetics for Modeling CVD: A Shotgun Marriage Between Experiments and Theory," presented in the *Dept. of Materials Science*, Penn State University, December 3, 1998.
10. C. F. Melius, M. D. Allendorf "The Determination of Thermochemical Data for CVD Using *Ab Initio* Quantum Chemistry Methods," *CALPHAD XXVIII*, Grenoble, France, May 2-7, 1999.
11. M. D. Allendorf, A. H. McDaniel, C. F. Melius, F. Teyssandier, C. Raffy "Thermochemistry and Kinetics of Chemical Reactions Relevant to the CVD of Ceramics and Hard Coatings: An Integrated Experimental and Modeling Approach," *Fall Meeting of the AIChE*, Dallas, TX, November 1, 1999.
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13. A. H. McDaniel, M. D. Allendorf "Advanced Microanalytical Devices for On-line Process Monitoring of CVD Reactors in a Float Glass Facility," *IFPAC Conference*, Las Vegas, January 27, 2000.
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15. M. D. Allendorf, "Research Needs for Coatings on Glass: Summary of the U.S. Department Of Energy Roadmapping Workshop," keynote lecture, *Third Int. Conf. Coatings on Glass*, Maastricht, The Netherlands, October 29 - November 2, 2000.
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17. M. D. Allendorf "Thermodynamic and Transport Modeling of Refractory Corrosion in Glass-Melting Furnaces," *PPG Glass Technology Center*, Cheswick, PA, May 16, 2001.
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19. K. E. Spear, M. D. Allendorf "Thermodynamic Calculations Involving Reactions between Glass and Refractories," *American Ceramic Soc. 104th Annual Meeting*, St. Louis, MO, April 28 – May 1, 2002.
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24. T. A. M. B. van Mol, Y. Chae, A. H. McDaniel, M. D. Allendorf "Chemical vapour deposition of tin oxide: fundamentals and applications," keynote lecture, *5th Int. Conf. Coatings on Glass*, Saarbruecken, Germany, July 4–8, 2004.

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31. T. M. Besmann, N. S. Kulkarni, K. E. Spear, M. D. Allendorf “Thermochemical Modeling of High Temperature Behavior of Chemically Complex Oxide Glass Solutions,” *Int. Conference on Glass*, Sunderland, United Kingdom, September, 2006.
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34. J. E. Miller, M. D. Allendorf, R. B. Diver, L. R. Evans, N. P. Siegel, J. N. Stuecker “Metal Oxide Composites and Structures for Ultra-High Temperature Solar Thermochemical Cycles,” plenary lecture, *Int. Symp. Reactivity of Solids*, Minneapolis, MN, June 3–6, 2007.
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51. M. D. Allendorf and J. E. Miller "Solar fuel production using thermochemical cycles: a challenging materials problem," Harvard University School of Engineering and Applied Science, April 21, 2011.
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53. M. D. Allendorf "Chemical and Radiation Detection Using Metal-Organic Frameworks," Gordon Research Conference on Nanoporous Materials, Holderness School, Aug. 7-12, 2011.
54. M. D. Allendorf "Manipulation of MOFs for Device Fabrication," UOP LLC Invitational Lecture Series, Des Plaines, IL, May 4, 2011.
55. M. D. Allendorf "Chemical and Radiation Detection Using Metal-Organic Frameworks," GE Global Research Center June 7-8, 2011, Niskayuna, NY.

56. M. D. Allendorf "Metal-Organic Frameworks (MOFs): Charting a course to device integration," SPIE Nanoepitaxy symposium, San Diego, CA, Aug. 24, 2011.
57. M. D. Allendorf, T. R. Zeitler, J. A. Greathouse "Metal-organic frameworks for greenhouse gas detection," *ACS Fall 2011 Meeting*, Denver, CO, Aug. 29, 2011.
58. M. D. Allendorf, A. H. McDaniel, J. E. Miller, E. N. Coker, A. Ambrosini, T. Aston, A. Weimer, J. Scheffe "Solar Fuel Production Using Thermochemical Cycles: A Challenging Materials Problem," *Fall Meeting of The Electrochemical Society*, Boston, MA, October 9-14, 2011.
59. M. D. Allendorf "Nano-to-Macro Materials Solutions to Renewable Energy Production and Storage," Dept. of Mech. Eng., Univ. Maryland, College Park, Oct. 14, 2011.
60. M. D. Allendorf "Luminescent metal-organic frameworks (MOFs): a Nanolaboratory for Photophysics," MIT Center for Excitonics Lecture Series," Cambridge, Massachusetts, February 7, 2012.
61. M. D. Allendorf, A. H. McDaniel, A. Ambrosini, E. N. Coker, J. E. Miller, E. B. Stechel "Solar-Driven Fuel Production Using Metal Oxide Thermochemical Cycles," *Materials Challenges in Alternative & Renewable Energy 2012 (MCARE)*, Clearwater, FL, February 26 – March 1, 2012.
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63. M. D. Allendorf "Connecting Structure with Function: MOFs for Chemical and Radiation Detection," *DFG Priority Program on MOFs, Topical Workshop for PhD Students: MOF-Based Chemical Sensors*, Munich, Germany, March 12–13, 2012.
64. M. D. Allendorf "The Power of Empty Space," *Valley Study Group*, Pleasanton, CA, June 13, 2012.
65. M. D. Allendorf "Research Connections with Sandia National Laboratories," *University-Government-Industry Micro-Nano Conference*, July 9-11, 2012, Berkeley, CA.
66. M. D. Allendorf, M. Foster, D. Gough, T. N. Lambert, K. Leong, S. T. Meek, E. D. Spoerke, B. Wong "Controlling donor-acceptor interfaces in excitonic devices using nanoporous metal-organic framework templates," *ACS Fall 2012 Meeting*, Philadelphia, PA, August 20–23, 2012.
67. M. D. Allendorf "The Power of Empty Space: Manipulating MOFs for Device Applications," Dept. of Chemistry, Washington University, St. Louis, Missouri Oct. 25, 2012.
68. M. D. Allendorf "The Power of Empty Space: Manipulating MOFs for Device Applications," Dept. of Physics, University of Missouri, St. Louis, Missouri, Oct. 26, 2012.
69. M. D. Allendorf "Creating donor-acceptor interfaces for excitonic devices using nanoporous metal-organic frameworks," *Electronic Materials and Applications 2013 Conference*, Orlando, FL, January 23-25, 2013.
70. M. D. Allendorf "Manipulating MOFs for Nanoparticle, Thin Film, and Device Fabrication," University of South Florida, Tampa, FL, January 25, 2013.
71. V. Stavila, M. D. Allendorf "Metal-Organic Frameworks as Nanoreactors for Reversible De/Re-hydrogenation Reactions," *245th ACS National Meeting*, New Orleans, LA, April 7-11, 2013.
72. M. D. Allendorf, J. M. Denning, J. A. Greathouse, A. L. Robinson, V. Stavila, T. R. Zeitler, I. Ellern, P. J. Hesketh "Integrating MOFs with MEMS devices for chemical sensing," *245th ACS National Meeting*, New Orleans, LA, April 7-11, 2013.

73. M. D. Allendorf, “Nanoporosity and the Welcome Guest: Developing Metal-Organic Frameworks for Electronic Device Applications,” Dept. of Materials Science, Univ. of Cambridge, Cambridge, U.K. Sept. 9, 2013.
74. M. D. Allendorf, A. A. Talin, J. A. Greathouse, T. N. Lambert, E. D. Spörke, V. Stavila, B. M. Wong “The Power of Empty Space: Metal-Organic Frameworks as Electronic Materials,” Keynote Lecture, *EuroMat 2013*, Seville, Spain, Sept. 9 – 13, 2013.
75. M. D. Allendorf “The Power of Empty Space: Adventures in Chemistry at a National Laboratory,” Whittier College, Whittier, CA Feb. 21, 2014.
76. M. D. Allendorf “Emergent Properties Using the Guest@MOF Concept,” invited presentation, *Metal-Organic Frameworks: Experiments and Simulations*, Telluride, CO, July 7 – 11, 2014.
77. M. D. Allendorf “Pleasures and Pitfalls of Guest Molecules in MOFs,” invited presentation, *Characterization of Nanoporous Materials workshop*, Stanford University, Aug. 8, 2014.
78. M. D. Allendorf “Nanoporosity and the Welcome Guest: Metal-Organic Frameworks as Active Components of Electronic Devices,” invited presentation, ACS Fall 2014 meeting, San Francisco, CA, Aug. 10 – 14, 2014.
79. M. D. Allendorf, A. A. Talin, M. E. Foster, V. Stavila, F. Leonard “Molecule meets MOF: bridging the gap between organic and inorganic electronic materials,” invited presentation, SPIE Optics + Photonics conference, San Diego, CA Aug. 17 – 21, 2014.
80. M. D. Allendorf “Molecule meets MOF: bridging the gap between organic and inorganic electronic materials,” IBM Almaden Research Center, San Jose, CA, Oct. 17, 2014.
81. M. D. Allendorf “Molecule meets MOF: bridging the gap between organic and inorganic electronic materials,” Advanced Light Source Chemical Sciences Series Lecture, Lawrence Berkeley National Laboratory, Berkeley, CA, Nov. 3, 2014.
82. M. D. Allendorf “Why would we want an electrically conducting MOF??,” Dept. of Chemistry, Ruhr University, Bochum, Germany, Jan. 22, 2015.
83. M. D. Allendorf “Guest@MOF: Emergent Properties for Electronic Device Applications,” Center for Organic Photonics and Electronics Research (OPERA), Kyushu University, Fukuoka, Japan, Feb. 13, 2015.
84. M. D. Allendorf, V. Stavila, A. A. Talin, and Curtis D. Mowry “Chemical Detection Using Metal-Organic Framework Thin Films and Composites,” Pittcon, New Orleans, March 8 – 12, 2015.
85. A. A. Talin, M. E. Foster, F. Léonard, K. Leong, C. D. Spataru, V. Stavila, M. D. Allendorf, “Emergent Electrical Properties Induced by Guest Molecules in Metal-Organic Frameworks,” MRS Spring 2015, San Francisco, CA, April 6 – 9, 2015.
86. M. D. Allendorf “Molecule meets MOF: Bridging the Gap Between Organic and Inorganic Electronic Materials,” ICMAT 2015, Singapore, June 28 – July 3, 2015.
87. M. D. Allendorf “Nanoporosity and the Welcome Guest: Developing Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Sensing,” Institute of Materials Research and Engineering (IMRE), Singapore, July 2, 2015.
88. M. D. Allendorf “Nanoporosity and the Welcome Guest: Developing Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Sensing,” Dept. of Chem. Biomolec. Eng., Nat. Univ. Singapore, July 3, 2015.

89. M. D. Allendorf ““Interactions of Light and Charge with Nanoporous MetalOrganic Frameworks,” IEEE San Francisco Bay Area Nanotechnology Council Chapter Seminar, Santa Clara, CA, July 21, 2015.
90. M. D. Allendorf, M. E. Foster, S. M. George, D. K. Lancaster, K. Leong, L. Small, E. D. Spoecke, V. Stavila, J. S. Wheeler “Multifunctional Metal-Organic Frameworks for Next-Generation Dye Sensitized Solar Cells,” Fall ACS National Meeting, Boston, MA, Aug. 16 – 20, 2015.
91. M. D. Allendorf, M. E. Foster, F. Léonard, C. D. Spataru, V. Stavila C. Schneider, R. A. Fischer, H. Mieno, C. Adachi “Metal-Organic Frameworks for Electronic and Photonic Device Applications,” Pacificchem, Honolulu, HI, Dec. 15 – 20, 2015.
92. M. D. Allendorf “Hydrogen Materials Advanced Research Consortium,” Pacific Northwest National Laboratories, Richland, WA Jan. 19, 2016.
93. M. D. Allendorf “Hydrogen Materials Advanced Research Consortium,” Toyota Central Research Laboratories, Nagoya, Japan Feb. 25, 2016.
94. M. D. Allendorf, V. N Stavila, R. Parthasarathi, K. L. Sale, M. Kent, R. W. Davis “Metal-Organic Framework Catalysts for Lignin Valorization,” Energy Materials Nanotechnology: Organometallic Catalysis, Kona, HI, March 21 – 24, 2016.
95. M. D. Allendorf, V. N Stavila, R. Parthasarathi, K. L. Sale, M. Kent, R. W. Davis “Metal-Organic Framework Catalysts for Lignin Valorization,” National Renewable Energy Laboratory seminar series, Golden, CO May 5, 2016.
96. M. D. Allendorf, M. E. Foster, F. Léonard, V. Stavila, A. A. Talin, R. A. Fischer “Integrating Molecules, Surfaces, and Devices to Achieve Emergent Properties in Metal-Organic Frameworks,” *Heterogeneous Functional Materials for Energy Conversion and Storage*, The Electrochemical Society Spring 2016 Meeting, San Diego, CA, May 29 – June 2, 2016.
97. M. D. Allendorf “Molecular and Supramolecular Aspects of Guest-Infiltrated Copper Paddlewheel MOFs,” Int. Conf. Coordination Chem., Brest, France, July 3 – 8, 2016.
98. Mark Allendorf “Where Does Hydrogen Fit in a Clean Energy Economy?” Lawrence Livermore Retirees Assoc., Livermore, CA, Oct. 11, 2016.
99. M. D. Allendorf “Nanoporosity and the Welcome Guest: Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Energy Conversion,” Georgetown Univ., Washington, D.C. Nov. 18, 2016.
100. M. D. Allendorf “Nanoporosity and the Welcome Guest: Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Energy Conversion,” George Washington Univ., Washington, D.C. Nov. 19, 2016.
101. Mark Allendorf “Nanoporosity and the Welcome Guest: Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Energy Conversion,” ASM Silicon Valley Section, Feb. 1, 2017.
102. M. D. Allendorf “Nanoporosity and the Welcome Guest: Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Energy Conversion,” Washington State Univ., Pullman, WA, Feb. 6, 2017.
103. Mark D. Allendorf, Vitalie Stavila, Brandon Wood, Keith Ray, Tae-Wook Heo, Jonathan R. I. Lee, James L. White, Rob Kolasinski, Farid El Gabaly, Lennie L. Klebanoff, Tom Autrey “Enabling Reversibility in Complex Metal Hydrides,” 11th International Symposium on Hydrogen and Energy, Kona, HI, Feb. 26 – Mar. 3, 2017.
104. M. D. Allendorf “Nanoporosity and the Welcome Guest: Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Energy Conversion,” Johns Hopkins Univ., Baltimore, MD, Feb. 6, 2017.

105. Mark Allendorf “Where Does Hydrogen Fit in a Clean Energy Economy?” Seniors in Retirement, Livermore, CA, Mar. 28, 2017.
106. M. D. Allendorf “Nanoporosity and the Welcome Guest: Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Energy Conversion,” Northwestern Univ., Evanston, IL, April 20, 2017.
107. Mark D. Allendorf, Jonathan W. Brown, James L. White, Vitalie Stavila, Leonard E. Klebanoff “Catalytically functionalized nanoporous frameworks and carbons for chemical energy storage,” ACS Fall 2017 Meeting, Washington, D.C. Aug. 23, 2017.
108. Mark D. Allendorf “Nanoporosity and the Welcome Guest: Metal-Organic Frameworks for Hydrogen Storage, Catalysis, and Energy Conversion,” Dept. of Chemistry, KU Leuven, Belgium, Oct. 26, 2017.
109. M. D. Allendorf, N. Burthc, A. A. Talin, R. Ameloot, I Stassen “A roadmap for the integration of metal-organic frameworks with electronic devices and chemical sensors,” *EuroMOF Industry Workshop*, Nov. 2, 2017.
110. Mark D. Allendorf “Designing Metal-Organic Frameworks for Optoelectronic and Thermoelectric Applications Using Guest Molecules and Structural Diversity,” Univ. of Cambridge, Cambridge, U.K. Feb. 19, 2018.
111. Mark D. Allendorf “Designing Metal-Organic Frameworks for Optoelectronic and Thermoelectric Applications Using Guest Molecules and Structural Diversity,” Queen Mary Univ., London, U.K. Feb. 21, 2018.
112. Mark D. Allendorf ““Designing Metal-Organic Frameworks for Optoelectronic and Thermoelectric Applications Using Guest Molecules & Structural Diversity” Dept. of Chemistry, Univ. Oregon, Eugene, OR April 13, 2018.
113. Mark D. Allendorf, Vitalie Stavila, Michael E. Foster “Multifunctional Metal-Organic Framework Catalysts for Hydrogen Activation,” *ACS National Meeting*, New Orleans, LA, April 18 – 22, 2018.
114. Mark D. Allendorf, M. E. Foster, K. Sohlberg, V. Stavila, Y. He, M. C. So, A. A. Talin, “The Role of Defects in the semiconducting-metallic discrepancy in Metal-Organic Graphene Analogues,” *AiMES 2018*, Cancun, Mexico Sept. 30 – Oct. 4, 2018.
115. M. D. Allendorf, F. P. Doty, A. Benin, V. Stavila, T. C. Wang, D. Haas, “Exploiting MOF luminosity and porosity for in-situ detection of xenon isotopes,” *MOF2018 – 6th Int. Conf. Metal Organic Frameworks and Open Framework Compounds*, Auckland, New Zealand Dec. 9 – 13, 2018.
116. M. D. Allendorf, Dept. of Chemistry, “Defects in MOFs: blessing or curse?” Dept. of Chemistry, Univ. Southern Cal., Los Angeles, Feb. 12, 2019.
117. M. D. Allendorf, “Defects in MOFs: friend or foe?” Institute of Physical and Theoretical Chemistry, Graz Univ. Technology, Graz, Austria, June 24, 2019.
118. M. D. Allendorf, F. P. Doty, A. Benin, V. Stavila, T. C. Wang, J. A. Greathouse, M. Nilsson, “Exploiting the tailorable nanoporosity of metal-organic frameworks for in-situ identification of radioisotopes,” *SnT2019. CTBT Science and Technol. Conf.* Vienna, Austria June 24 – 28, 2019.
119. M. D. Allendorf ““Effects of film properties, guests, and defects on MOF electronic properties,” *Nanoporous Materials and Their Applications, Gordon Research Conf.*, Andover, NH Aug. 4 – 9, 2019.
120. M. D. Allendorf, “Hybrid and Functionalized MOFs for Fuel Production, Transport, and Storage,” *Hybrid Functional Porous Materials: MOFs, Silica and Conductive Polymers symposium, ACS Fall 2019 Meeting*, San Diego, CA Aug. 25 – 30, 2019.

121. M. D. Allendorf, “Soup to Nuts: MOFs for Production, Transport, and Storage of Fuels,” Keynote Lecture, 2019 EuroMOF Conference, Paris, France Oct. 27 – 30, 2019.
122. M. D. Allendorf, “Designing Metal-Organic Frameworks for Electronic Applications Using Guest Molecules and Structural Diversity,” 3M Technical Innovation Center, St. Paul, MN Nov. 11, 2019.
123. M. D. Allendorf, “Nanopores, Nanoparticles, and “Molecular Hydrides” for Hydrogen Production, Transport, and Storage,” Dept. of Chemistry, Univ. Minnesota, Minneapolis, MN Nov. 12, 2019.
124. M. D. Allendorf, “Nanopores, Nanoparticles, and “Molecular Hydrides” for Hydrogen Production, Transport, and Storage,” Dept. of Chemistry, Boston College, Boston, MA Dec. 5, 2019.
125. M. D. Allendorf “From Nano to Micro and Back Again: Disruptive Science for Materials-Based Hydrogen Storage” Dept. of Chemistry, Colorado School of Mines, Golden, CO Oct. 21, 2022.
126. M. D. Allendorf “From Nano to Micro and Back Again: Disruptive Science for Materials-Based Hydrogen Storage” Dept. of Chemistry, Washington University in St. Louis, Nov. 7, 2022.
127. M. D. Allendorf “From Nano to Micro and Back Again: Disruptive Science for Materials-Based Hydrogen Storage” 15th Int. Symposium Hydrogen & Energy, Emmetten, Switzerland, Jan. 23, 2023.