

David A. Cullen
Senior R&D Staff
Center for Nanophase Materials Sciences
Oak Ridge National Laboratory
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Education:

Brigham Young University B.S. 2005 Applied Physics
Arizona State University Ph.D. 2010 Materials Science and Engineering

Professional Experience:

2019-present Senior Research Staff Member, Electron and Atom Probe Microscopy Group, Center for Nanophase Materials Science, ORNL
2018-2019 Fuel Cell Technologies Program Manager, Sustainable Transportation Program, ORNL
2016-2018 Team Lead, Applied Materials Characterization, MSTD Division, ORNL
2012-2018 Research Staff Member, Microscopy Group, MSTD Division, ORNL
2010-2012 Alvin M. Weinberg Fellow, Microscopy Group, ORNL

Professional Activities, Honors, Awards:

Fuel Cell R&D Technical Program Award, Hydrogen and Fuel Cell Technologies Office (2020)
Presidential Early Career Award for Scientists and Engineers (2019)
Appalachian Regional Microscopy Society Young Investigator Award (2013)
Alvin M. Weinberg Fellow, Oak Ridge National Laboratory (2010)
ARCS (Achievement Rewards for College Scientists) Scholar, Phoenix Chapter (2009)

Professional Memberships:

Microscopy Society of America, Member
The Electrochemical Society, Member

Selected Peer-Reviewed Publications: (total ~ 154, ORCID H-index: 37)

N. Zion, D.A Cullen, P. Zelenay, L. Elbaz “Heat-Treated Aerogel as a Catalyst for the Oxygen Reduction Reaction” *Angewandte Chemie International Edition* 59 (2020) 2483-2489
G. Yang, et al., “A Novel PEMEC with 3D Printed Non-conductive Bipolar Plate for Low-Cost Hydrogen Production from Water Electrolysis,” *Energy Conversion and Management* 182 (2019) 108-116
K. Ding, D.A. Cullen, et al., “A general synthesis approach for supported bimetallic nanoparticles via surface inorganometallic chemistry” *Science* 362 (2018) 560-564.
J. Li, M. Chen, D.A. Cullen, et al., “Atomically Dispersed Manganese Catalysts for Oxygen Reduction in Proton Exchange Membrane Fuel Cells” *Nature Catalysis* 1 (2018) 935
X.X. Wang, D.A Cullen, et al., “Nitrogen-coordinated Single Atom Cobalt Sites Derived from Metal Organic Frameworks for High Performance Oxygen Reduction in Acidic Media, *Advanced Materials* 48 217-226 (2018).
H.T. Chung, D.A. Cullen, et al., “Direct Atomic-Level Insight into the Active Sites of a High-Performance PGM free ORR Catalyst” *Science* 357 479-484 (2017).
B.T. Sneed, D.A. Cullen, et al., “3D Analysis of Fuel Cell Electrocatalyst Degradation on Alternate Carbon Supports,” *ACS Applied Materials & Interfaces* 9 29839-29848 (2017).
Z. Kang, J. Mo, G. Yang, S.T. Retterer, D.A. Cullen, et al., “Investigation of thin/well-tunable liquid/gas diffusion layers exhibiting superior multifunctional performance in low-temperature electrolytic water splitting,” *Energy & Environmental Science* 10 166-175 (2017).