DAMILOLA A. DARAMOLA, PH.D.

Assistant Professor
Department of Chemical Engineering
Department of Chemistry & Chemical Biology
Northeastern University

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Boston MA 02115

EDUCATION

PhD Ohio University, Chemical Engineering — November 2011
Dissertation: "Theoretical Characterization of Ammonia Oxidation Species on Platinum Clusters"
Advisor: Gerardine G. Botte, Ph.D.

BS Ohio University, Chemical Engineering — June 2004
Minors: Chemistry and Mathematics

APPOINTMENTS

Northeastern University, Department of Chemical Engineering	Assistant Professor	07/23 – Present
Northeastern University, Department of Chemistry & Chemical Biology	Assistant Professor	07/23 – Present
Ohio University, Department of Chemical and Biomolecular Engineering	Assistant Professor	08/20 – 06/23
Ohio University, Institute for Sustainable Energy and the Environment	Assistant Research Professor	03/19 – 08/20
Ohio University, Center for Electrochemical Engineering Research (CEER)	Assistant Director for Technical Business Development	03/15 – 03/19
Ashland Inc., Specialty Polymers and Adhesives	Research Chemist Intern	07/14 – 03/15
Ohio University, CEER	Scientist for Molecular Modeling	12/13 – 03/15
Ohio University, CEER	Postdoctoral Researcher	12/11 – 11/13

HONORS AND AWARDS

Scialog Fellow: Sustainable Minerals, Metals and Materials 2024
Research Corporation for Science Advancement & Alfred P. Sloan Foundation

White Research Award, Chemical and Biomolecular Engineering 2023
Ohio University

Cutler Scholars Outstanding Mentor Award 2023
Ohio University

Ralph E. Powe Junior Faculty Enhancement Award 2022
Oak Ridge Associated Universities

Russ Outstanding Research Paper Award 2020
Russ College of Engineering and Technology, Ohio University

NextProf Nexus Workshop Invitee 2019
Sponsors: Michigan, Georgia Tech and UC, Berkeley

Provost Teaching Award Nominee 2018
Ohio University

Carl Storm Underrepresented Minority Fellow 2018
Gordon Research Conference on Lignin Conversion

Data Science Hack Week Scholar 2018

223rd Electrochemical Society (ECS) Meeting
Student Poster Competition – 2nd place 2011
220th ECS Meeting
Dokiya Fund Travel Grant Recipient 2009
215th ECS Meeting
Student Enhancement Award 2009
Ohio University
Dokiya Fund Travel Grant Recipient 2007
211th ECS Meeting
Board of Corporate Affiliates Scholarship 2007
National Society of Black Engineers (NSBE)

PUBLICATIONS

Labels: Daramola undergraduate student mentee, Daramola graduate student mentee, †Daramola as corresponding author; *Daramola as equal contributor

Peer-reviewed Journal Articles

1. A. Abu Hajer, D.A. Daramola and J.P. Trembly, **Carbon dioxide reduction in solid oxide electrolyzer cells utilizing nickel bimetallic alloys infiltrated into $Gd_{0.1}Ce_{0.9}O_{1.95}$ (GDC10) scaffolds**, Electrochimica Acta 485, pp 144052 (2024). DOI: 10.1016/j.electacta.2024.144052
2. B.I. Ojoawo and D.A. Daramola†, **Multivariate Screening Analyses of Electrochemically driven Nutrient Recovery from Wastewater using Nutrient Removal and Energy Consumption as Responses**, Resources, Conservation & Recycling Advances 20, pp 200194 (2023). DOI: 10.1016/j.rcradv.2023.200194 (OPEN ACCESS)
3. C. J. Chukwuka, S.A. Almanza, D.A. Daramola†, **Evaluating the Curing Kinetics of Coal-Based Phenolic Resin Composites Using Calorimetric and Spectroscopic Analyses**, ACS Applied Engineering Materials 1, pp 2984–2993 (2023). DOI: 10.1021/acsaenm.3c00471
4. A. Kasick, A. Abu Hajer, K.D. Wolfe, S. Velraj, D.A. Daramola, J.P. Trembly, **Electro-Oxidative Dehydrogenation of Ethane to Ethylene Using Lanthanum-Strontium-Iron Oxide Perovskite Electrocatalysts**, Journal of the Electrochemical Society 170, pp 104509 (2023). DOI: 10.1149/1945-7111/acff19.
5. D.A. Daramola† and M.W. Liberatore, **Features of and student responses to Microsoft Teams as a learning management system**, Chemical Engineering Education 57, pp 169 – 178 (2023). DOI: 10.18260/2-1-370.660-132191
6. K.D. Wolfe, A. Zanganeh, R.N. Arthur, J.P. Trembly and D.A. Daramola†, **Considerations for Electrochemical Phosphorus Precipitation: A Figures of Merit Approach**, The Electrochemical Society Interface 32, pp 51 – 55 (2023), DOI: 10.1149/2.F10232IF
7. A. Abu Hajer, S. Velraj, D.A. Daramola and J.P. Trembly, **Carbon Dioxide Reduction in Solid Oxide Electrolyzer Cells using Transition Metals infiltrated into $Gd_{0.1}Ce_{0.9}O_{1.95}$ (GDC10) scaffolds**, Journal of Power Sources 572, pp233040 (2023). DOI: 10.1016/j.jpowsour.2023.233040
8. X. Zhang, H. Shi, N. Tan, M. Zhu, W. Tan, D.A. Daramola and T. Gu, **Advances in bioleaching of waste lithium batteries under metal ion stress,** Bioresources and Bioprocessing 10, pp 19 (2023), DOI: 10.1186/s40643-023-00636-5
9. D.A. Daramola† and M.C. Hatzell, **Energy Demand of Nitrogen and Phosphorus Based Fertilizers and Approaches to Circularity**, ACS Energy Letters 8, pp 1493 – 1501 (2023), DOI: 10.1021/acsenergylett.2c02627. **This article was an Invited Perspective** (OPEN ACCESS)
10. A. Namaeighasemi, D.A. Daramola and J.A. Staser, **Electrochemical performance of ZIF-8 coated Zn anode in a solid-state Zn air battery**, ECS Advances 1, pp040503 (2022), DOI: 10.1149/2754-2734/acaabe

11. G.P. Pindine, J.P. Trembly and D.A. Daramola[†], **Equilibrium-based Temperature Dependent Economic Analysis of Phosphorus Recovery from Different Wastewater Streams via Chemical Precipitation**, ACS ES&T Water 1, pp 2318 – 2326 (2021), DOI: 10.1021/acsestwater.1c00166
12. S. Velraj, D.A. Daramola and J.P. Trembly, **A novel solid oxide electrolytic cell with reduced endothermic load for CO_2 electrolysis using $(La_{0.80}Sr_{0.20})_{0.95}MnO_{3-\delta}$ cathode**, Journal of CO2 Utilization 48, pp101527 (2021), DOI: 10.1016/j.jcou.2021.101527
13. E.F. Grossman, D.A. Daramola and G.G. Botte, **Comparing B3LYP and B97 dispersion-corrected functionals for Studying Adsorption and Vibrational Spectra in Nitrogen Reduction**, ChemistryOpen 10, pp316 (2021). DOI: 10.1002/open.202000158 (OPEN ACCESS)
14. Z. Belarbi, D.A. Daramola[*†] and J.P. Trembly, **Bench-Scale Demonstration and Thermodynamic Simulations of Electrochemical Nutrient Reduction in Wastewater via Recovery as Struvite**, Journal of the Electrochemical Society 167, pp155524 (2020), DOI: 10.1149/1945-7111/abc58f, Focus Issue on Organic and Inorganic Molecular Electrochemistry (OPEN ACCESS)
15. Y.A. Al Majali, C.T. Chirume, E.P. Marcum, D.A. Daramola, K.S. Kappagantula and J.P. Trembly, **Coal-Filler-Based Thermoplastic Composites as Construction Materials: A New Sustainable End-Use Application**, ACS Sustainable Chemistry & Engineering 7, pp 16870 – 16878 (2019). DOI: 10.1021/acssuschemeng.9b04453
16. A. Estejab, D.A. Daramola and G.G. Botte, **Mathematical model of a parallel plate ammonia electrolyzer for combined wastewater remediation and hydrogen production**, Water Research 77, pp I33 – I45 (2015). DOI: 10.1016/j.watres.2015.03.013
17. D.A. Daramola and G.G. Botte, **Theoretical study of ammonia oxidation on platinum clusters– Adsorption of intermediate nitrogen dimer molecules**, Journal of Colloid and Interface Science 402, pp 204 – 214 (2013). DOI: 10.1016/j.jcis.2013.03.067
18. D.A. Daramola and G.G. Botte, **Theoretical study of ammonia oxidation on platinum clusters– Adsorption of ammonia and water fragments**, Computational and Theoretical Chemistry 989, pp 7 – 17 (2012). DOI: 10.1016/j.comptc.2012.02.032
19. D.A. Daramola, D. Singh and G.G. Botte, **Dissociation rates of urea in the presence of NiOOH catalyst: a DFT analysis**, Journal of Physical Chemistry A 114, pp 11513 – 11521 (2010). DOI: 10.1021/jp105159t
20. D.A. Daramola, M. Muthuvel and G.G. Botte, **Density functional theory analysis of Raman frequency modes of monoclinic zirconium oxide using Gaussian basis sets and isotopic substitution**, Journal of Physical Chemistry B 114, pp 9323 – 9329 (2010). DOI: 10.1021/jp9077135

Book Chapter

21. G.G. Botte, D.A. Daramola and M. Muthuvel, "**9.14 Preparative Electrochemistry for Organic Synthesis**" In Comprehensive Organic Synthesis II, G.A. Molander & P. Knochel, Eds., Elsevier: Amsterdam, 351 – 389 (2014). DOI: 10.1016/B978-0-08-097742-3.00940-X

Pre-print

22. D.A. Daramola, S. Velraj and J.P. Trembly, **Perovskite-based Oxidative Dehydrogenation of Ethane to Ethylene using a Solid Oxide Cell Configuration for Process Intensification**, ChemRxiv (2022), DOI: 10.26434/chemrxiv-2022-vqgr1

Under Review

23. U. Ewuzie, A.O. Yusuf, D.A. Daramola and M.U. Okoronkwo, **Quantifying the thixotropic behavior of fresh cement-struvite pastes**.

24. S. Heydarian, L. Ajayi, A.S. Abbas, K.D. Wolfe, R. Benhaddou, J.P. Trembly and D.A. Daramola†, **Electrified Nutrient Recovery at Municipal Wastewater Facilities: Sampling, Screening and Multivariate Analyses**.
25. B.I. Ojoawo, K.D. Wolfe, J.P. Trembly and D.A. Daramola†, **Optimizing Phosphorus Recovery from Synthetic Animal Wastewater: A Comparative Approach Using Response Surface Methodology and Artificial Neural Networks with Empirical Validation**

AWARDED RESEARCH GRANTS

As Principal Investigator (apportioned $1,659K so far)

1. Socio-technical Considerations and Implications of Critical Mineral Extraction from Mining Waste: $25,290 (Total award: $50,000). Northeastern University; 07/01/2024 – 09/30/2025
2. Assessing the potential of Ohio Wastewater Treatment Plants as Resource Recovery Systems: $130,000 (Total award: $200,000). Ohio Water Development Authority; 12/01/2022 – 11/30/2024
3. Combined Nitrogen and Phosphorus Recovery via Electrochemical Technology Integration into Municipal Wastewater Treatment Plants: $1,378,965 (Total award: $1,969,951)**.** U.S. Department of Energy; 09/01/2021 – 02/28/2025
4. Techno-Economic Analyses and Feasibility Studies for Electrochemical Wastewater Remediation on Farmlands: $150,000 (Total award: $200,000). Ohio Water Development Authority; 01/01/2020 – 06/30/2023

As co-Principal Investigator (apportioned $125K so far)

1. Coal-derived Alternatives to Fiber-Cementitious Building Materials: $50,000 (Total award: $500,000). U.S. Department of Energy; 01/01/2021 – 12/31/2022
2. Coal Plastic Composite Piping Infrastructure Components: $75,000 (Total award: $500,000). U.S. Department of Energy; 01/01/2021 – 12/31/2022
3. Chemical and Biomolecular Engineering Graduate Assistance in Areas of National Need (GAANN) Fellowship: $760,950 awarded for students. U.S. Department of Education; 09/01/2021 – 06/30/2023
4. Carbon-based Materials for Sustainable Building and Energy Applications GAANN Fellowship: $1,141,425 awarded for students. U.S. Department of Education;10/01/2021 – 06/30/2023

INVITED SEMINARS/PANELS (*FUTURE EVENTS ARE ITALICIZED*)

1. ***Electrified Nutrient Recovery at Municipal Wastewater Facilities for a Circular Food-Energy-Water Economy,*** *City College of New York Chemical Engineering Departmental Seminar Series (November 2024)*
2. **Enabling a Circular Food-Energy-Water Economy with Electrified Wastewater Treatment as the Nexus,** University of Massachusetts Boston Chemistry Departmental Seminar Series (May 2024)
3. **Electrified Mineralization of Nutrients from Real Municipal Wastewater and the Energy Implications Thereof,** 2023 Materials Research Society Fall Meeting, Boston, Massachusetts (November 2023)
4. **Enabling a Circular Food-Energy-Water Economy with Electrified Wastewater Treatment as the Nexus,** New Jersey Institute of Technology Otto H. York Chemical and Materials Engineering Departmental Seminar Series (March 2023)

5. **Enabling a Circular Food-Energy-Water Economy with Electrified Wastewater Treatment as the Nexus,** Northeastern University Chemical Engineering Departmental Seminar Series (January 2023)
6. **Enabling a Circular Food-Energy-Water Economy with Electrified Wastewater Treatment as the Nexus**, National Society of Black Engineers – Dayton Ohio Chapter (January 2023)
7. **Sustainable Energy and the Environment**, Ohio University Alumni Academy (November 2022)
8. **Modular Water Resource Recovery Facilities explored via Electrochemical Nitrogen and Phosphorus Reduction from Wastewater**, Georgia Institute of Technology Chemical Engineering Departmental Seminar Series (September 2022)
9. **Phosphorus Recovery from Wastes and Potential Applications**, 2022 Ecological Society of America and Canadian Society for Ecology and Evolution Joint Meeting, Montreal, Canada (August 2022)
10. **Electrified Resource Recovery via Nutrient Reduction from Wastewater**, 241st Electrochemical Society Meeting, Vancouver Canada (May 2022)
11. **Modular Water Resource Recovery Facilities explored via Electrochemical Nitrogen and Phosphorus Reduction from Wastewater**, University of Washington Chemical Engineering Departmental Seminar Series (April 2022)
12. **Combined Nitrogen and Phosphorus Recovery via Electrochemical Technology Integration into Municipal Wastewater Treatment Plants**, Water Research Foundation and Department of Energy Webcast on Research and Development for Emerging Technologies (August 2021)

CONFERENCE PRESENTATIONS (PRESENTER: 23; SUPERVISOR: 19; CONTRIBUTOR: 8; *FUTURE: 2*)

Labels: *presenting author, Daramola undergraduate student mentee, Daramola graduate student mentee, †Daramola as supervising author

1. *Ugochukwu Ewuzie*, Damilola Daramola and Monday Okoronkwo,* ***Wastewater-Derived Struvite As a Green Alternative to Portland Cement: Experimental Insights into Rheological and Mechanical Properties,*** *AIChE Annual Meeting, San Diego, California (October 2024), Oral*
2. *Richard Arthur*, Damilola Daramola and Jason Trembly,* ***Process Simulation Study on the Lifecycle and Techno-Economic Analyses of Electrochemical Phosphate Recovery from Municipal Wastewater Using Sacrificial Magnesium Anode,*** *AIChE Annual Meeting, San Diego, California (October 2024), Oral*
3. Lawrence Ajayi* and Damilola Daramola†, **Effects of Thermal Combustion on the Characterization of Rare Earth Minerals in Coal Mine Tailings,** 4th Annual Workshop on Resilient Supply of Critical Minerals, Rolla, Missouri (August 2024), Poster
4. A. Zanganeh* and Damilola Daramola†, **Exploring an Electrochemical Batch Reactor for Nutrient Recovery from Wastewater: Continuum Modeling Analysis of Hydrodynamics and Tertiary Current Distribution,** 245th Electrochemical Society Meeting, San Francisco, California (May 2024), Poster
5. Babatunde I. Ojoawo*, Jason Trembly and Damilola Daramola†, **Electrochemical Approaches for Enhanced Phosphorus Recovery from Synthetic Animal Wastewater: A Comparative Analysis of Response Surface Methodology and Artificial Neural Networks,** 245th Electrochemical Society Meeting, San Francisco, California (May 2024), Oral
6. Lawrence Ajayi*, Syed A. Abbas, Jason Trembly and Damilola Daramola†, **Machine Learning Modeling of Electrochemical Recovery of Phosphorus from Municipal Wastewater in a Batch Reactor,** AIChE Annual Meeting, Orlando, Florida (November 2023), Oral

7. Sana Heydarian*, Syed A. Abbas, Jason Trembly and Damilola Daramola†, **Electrified Resource Recovery from Synthetic Anaerobic Digester Centrate: Impact of Anode Type on Operational, Design and Stream Variables,** AIChE Annual Meeting, Orlando, Florida (November 2023), Oral
8. Jessica Chukwuka*, Sophia Almanza and Damilola A. Daramola†, **Characterization of the Curing Kinetics and Structure of Coal-Based Phenolic Resin Composites,** AIChE Annual Meeting, Orlando, Florida (November 2023), Oral
9. Syed A. Abbas, Sana Heydarian*, Lawrence Ajayi, Jason Trembly and Damilola Daramola†, **Demonstration of a Batch Electrochemical System for Phosphorus Recovery from a Real Municipal Wastewater Recycle Stream,** AIChE Annual Meeting, Orlando, Florida (November 2023), Poster
10. A. Zanganeh*, Kody D. Wolfe and Damilola Daramola†**, Insight into Electrochemical Batch Reactor for Phosphorus Recovery Using Mathematical Modeling,** AIChE Annual Meeting, Orlando, Florida (November 2023), Poster
11. Lawrence Ajayi* and Damilola Daramola†**, Electrified Lixiviation of Rare Earth Elements from Coal Mining Waste,** AIChE Annual Meeting, Orlando, Florida (November 2023), Poster
12. Abdullah AL Harthy* and Damilola Daramola†**, Indirect Hydrogenolysis of Polyethylene by Sub-Critical Butanol,** AIChE Annual Meeting, Orlando, Florida (November 2023), Poster
13. Kody D. Wolfe, Sana Heydarian, Lawrence Ajayi, Syed A. Abbas, Jason Trembly and Damilola Daramola†*, **Screening Electrochemical Phosphorous Recovery Conditions in Real and Synthetic Wastewater Streams,** 244th Electrochemical Society Meeting, Gothenburg, Sweden (October 2023), Oral
14. Kody D. Wolfe*, A. Zanganeh, R.N. Arthur, Jason Trembly and Damilola Daramola†, **Electrochemical Phosphorous Recovery from Wastewater: Modeling & Scale-up Considerations,** 244th Electrochemical Society Meeting, Gothenburg, Sweden (October 2023), Oral
15. Babatunde I. Ojoawo*, Jason Trembly and Damilola Daramola†, **Statistical and Energy Consumption Analyses of Multi-Factor Effect on Nutrient Removal and Recovery Via Electrochemical Animal Waste Remediation,** AIChE Annual Meeting, Phoenix, Arizona (November 2022), Oral
16. Sana Heydarian*, Francesca Carney and Damilola Daramola†, **Evaluating Transport Factors to Understand Electrochemical Nutrient Removal and Recovery from Synthetic Animal Wastewater**, AIChE Annual Meeting, Phoenix, Arizona (November 2022), Poster
17. Lawrence Ajayi*, Sana Heydarian, Jason Trembly and Damilola Daramola†, **Bench-Scale Testing of Electrochemical Recovery of Phosphorus from Post-Digester Municipal Wastewater Driven by Magnesium Salt,** AIChE Annual Meeting, Phoenix, Arizona (November 2022), Poster
18. Andrew Kasick*, Ahmad Abu Hajer, Damilola Daramola and Jason Trembly, **Ethane Electrochemical Oxidative Dehydrogenation: Impact of Electrocatalyst Tuning and Feedstock Composition** AIChE Annual Meeting, Phoenix, Arizona (November 2022), Oral
19. Damilola A. Daramola*, **Lessons Learned in the "Great Transition" of 2020,** American Society of Engineering Education/AIChE Summer School, Golden, Colorado (2022) Poster
20. Jessica Chukwuka*, Sophia Almanza and Damilola A. Daramola†, **Understanding the curing kinetics of Phenolic Composites based on filler content and composition,** American Chemical Society (ACS) Spring Meeting, San Diego, California (March 2022), Poster
21. Damilola A. Daramola*†, Babatunde I. Ojoawo, Sana Heydarian and Jason Trembly, **Characterization of Solid-state Multi-phase Electrified Phosphorus Recovery from Simulated**

Wastewater, American Chemical Society (ACS) Spring Meeting, San Diego, California (March 2022), Oral

22. Babatunde I. Ojoawo*, Jason Trembly and Damilola Daramola†, **pH Effects on Factors Influencing Nutrient Removal and Recovery from Synthetic Animal Waste Via Chemical and Electrochemical Techniques,** AIChE Annual Meeting, Boston, Massachusetts (November 2021), Oral
23. Jessica Chukwuka*, Jason Trembly and Damilola Daramola†, **Thermal Properties of Heat-treated Coal Under Inert Conditions,** AIChE Annual Meeting, Boston, Massachusetts (November 2021), Poster
24. Andrew Kasick*, Ahmad Abu Hajer, Damilola Daramola, Samgopiraj Velraj and Jason Trembly, **Electrocatalyst Development for Electrochemical Oxidative Dehydrogenation of Ethane,** AIChE Annual Meeting, Boston, Massachusetts (November 2021), Oral
25. Ahmad Abu Hajer*, Andrew Kasick, Samgopiraj Velraj, Damilola Daramola and Jason Trembly, **Electrochemical Reduction of Carbon Dioxide by Means of Transition Metal Infiltrated Cathodes in Solid Oxide Electrolyzer Cells,** AIChE Annual Meeting, Boston, Massachusetts (November 2021), Oral
26. Garrett Pindine*, Babatunde I. Ojoawo, Jason Trembly and Damilola Daramola†, **Thermodynamic Modeling of Phosphorus Recovery from Wastewater for Process Optimization,** 239th Electrochemical Society Virtual Meeting (May 2021), Oral
27. Babatunde I. Ojoawo*, Garrett Pindine, Jason Trembly and Damilola Daramola†, **Electrochemical Animal Waste Remediation: Multi-Factor Effect Analyses on Nutrient Reduction and Struvite Deposition,** 239th ECS Virtual Meeting (May 2021), Oral
28. Damilola Daramola* and Jason Trembly**, Modular Electrochemical Treatment of Concentrated Animal Feeding Operations Waste for Simultaneous Nutrient Reduction and Recovery**, AIChE Virtual Annual Meeting (November 2020), Oral
29. Samgopiraj Velraj*, Ahmad Abu Hajer, Andrew Kasick, Damilola Daramola and Jason Trembly, **Simultaneous Carbon Utilization and Alkane Conversion Using Solid Oxide Electrolytic Technology**, AIChE Virtual Annual Meeting (November 2020), Oral
30. Andrew Kasick*, Ahmad Abu Hajer, Damilola Daramola, Samgopiraj Velraj and Jason Trembly, **Advances in the Use of Electrochemical Oxidative Dehydrogenation to Convert Natural Gas Liquids to Value Added Chemicals**, AIChE Virtual Annual Meeting (November 2020), Oral
31. Jason Trembly*, Yahya Al Majali and Damilola Daramola**, Construction Composite Materials as Sustainable End-Use for Coal Extraction Waste**, AIChE Virtual Annual Meeting (November 2020), Oral
32. Damilola Daramola*, Samgopiraj Velraj and Jason Trembly, **Electrochemical Oxidative Dehydrogenation (e-ODH) As a Process Intensification Platform in Shale Gas Upgrading,** AIChE Annual Meeting, Orlando, Florida (November 2019), Oral
33. Damilola A. Daramola*, **REPRODUCE – Remediation and Production Using Computational and Electrochemical Approaches,** AIChE Annual Meeting, Orlando, Florida (November 2019), Poster
34. Jason Trembly*, Samgopiraj Velraj and Damilola Daramola, **Modular Electrocatalytic Processing for Simultaneous Carbon Utilization and Alkane Conversion,** AIChE Annual Meeting, Orlando, Florida (November 2019), Oral
35. Zineb Belarbi*, Damilola Daramola and Jason Trembly, **Electrochemical Processing to Capture Phosphorus from Concentrated Animal Feeding Operations Waste: Experimental and**

Process Simulation Investigations, AIChE Annual Meeting, Orlando, Florida (November 2019), Oral

36. Damilola A. Daramola* and Gerardine G. Botte**, Investigation of Ammonia Oxidation on the Platinum Surface for Hydrogen Generation** Annual AIChE Meeting, Pittsburgh, Pennsylvania (October 2012), Oral
37. Damilola A. Daramola*, Brian L. Hassler, Gerardine G. Botte, **On the adsorption of thiol molecules on a Nickel Catalyst: A theoretical approach,** Annual AIChE Meeting, Pittsburgh, Pennsylvania (October 2012), Oral
38. Damilola A. Daramola*, Brian Hassler and Gerardine G. Botte, **The Effect of surface modification on the properties of a Nickel catalyst: A Theoretical Study,** 222nd ECS Meeting, Hawaii (October 2012), Oral
39. Brian Hassler, Damilola A. Daramola*, Alex Miller and Gerardine G. Botte, **Effect of Nickel Surface Structure on Urea Electrolysis: An Experimental Study,** 222nd ECS Meeting, Hawaii (October 2012), Oral
40. Ali Estejab, Damilola A. Daramola* and Gerardine G. Botte**, A Semi-Empirical Model of Ammonia electrolysis in comparison to water electrolysis,** 222nd ECS Meeting, Hawaii (October 2012), Poster
41. Damilola A. Daramola* and Gerardine G. Botte**, Theoretical Characterization of Ammonia Oxidation Intermediates and Products on Platinum Clusters,** 222nd ECS Meeting, Hawaii (October 2012), Poster
42. Damilola A. Daramola* and Gerardine G. Botte**, On the Theoretical Characterization of Nickel (II) Hydroxide for Hydrogen production from Urea,** 220th ECS Meeting, Boston, Massachusetts (October 2011) (Presenting Author; Poster)
43. Lingchong Mai*, Damilola A. Daramola and Gerardine Botte**, A Computational Study on the Effect of Water Molecules on Uncatalyzed Ammonia Oxidation,** 220th ECS Meeting, Boston, Massachusetts (October 2011) (Contributing Author; Poster)
44. Damilola A. Daramola* and Gerardine G. Botte**, Computational Study of Ammonia Oxidation on Platinum Clusters,** 220th ECS Meeting, Boston, Massachusetts (October 2011) (Presenting Author; Oral)
45. Damilola A. Daramola* and Gerardine G. Botte**, Ammonia Oxidation on Platinum anodes: A DFT study of two mechanisms,** 218th ECS Meeting, Las Vegas, Nevada (October 2010), Oral
46. Damilola A. Daramola* and Gerardine G. Botte**, Electric Field Effects on the adsorption of NH_3 on Platinum for Electrochemical Oxidation,** 218th ECS Meeting, Las Vegas, Nevada (October 2010), Poster
47. Damilola A. Daramola* and Gerardine G. Botte**, Theoretical Raman Spectra of Monoclinic Zirconia for SOFC Studies,** MSSC 2010: Ab initio Modelling in Solid State Chemistry Workshop, London UK (September 2010), Poster
48. Damilola A. Daramola*, Madhivanan Muthuvel and Gerardine Botte**, Theoretical Raman Spectra of Monoclinic Zirconia for SOFC Studies,** 215th ECS Meeting, San Francisco, California (May 2009), Oral
49. Damilola A. Daramola*, Allison Dugovics and Gerardine G. Botte, **Theoretical Study of the Kinetics of Ammonia Oxidation on Platinum Anodes,** 215th ECS Meeting, San Francisco, California (May 2009), Poster
50. Damilola A. Daramola*, Madhivanan Muthuvel, Andres Marquez and Gerardine Botte, **Computational and Experimental Analysis of Solid Oxide Fuel Cell Anodes in the presence of H_2S,** 212th ECS Meeting, Washington DC (October 2007), Oral

51. Damilola Daramola*, Madhivanan Muthuvel, Andres Marquez and Gerardine Botte, **Theoretical Study of Solid Oxide Fuel Cell Anodes in the presence of H_2S,** 211th ECS Meeting, Chicago, Illinois (May 2007), Poster
52. Damilola Daramola*, Madhivanan Muthuvel, Andres Marquez and Gerardine Botte, **Theoretical Investigations of Solid Oxide Fuel Cells Anode Materials,** Eastern Regional Chemical & Materials Engineering Graduate Symposium, Lexington, Kentucky (October 2006), Poster

TEACHING/ADVISING EXPERIENCE

Courses Taught at Northeastern University Jul. '23 to present

1. CHME 4530 – Chemical Engineering Kinetics (Spring 2024, *Fall 2024*)

Courses Taught at Ohio University Aug. '20 to Jun. '23

1. ET 2300 – Principles of Engineering Materials (Fall 2020, Spring 2021, Fall 2022)
2. ChE 4530 – Alternative Fuels and Renewable Energy (Fall 2021, Fall 2023)
3. ChE 3800 – Chemical Engineering Modeling (Spring 2022, Spring 2023)
4. ChE 6000 – Chemical Engineering Seminar Series (Spring 2022, Fall 2022)
5. ChE 4120 – Chemical Engineering Unit Operations (Spring 2023)

Doctoral Students Supervised

1. Babatunde Ojoawo, Ohio University, Graduated Spring 2024
2. Ardavan Zanganeh, Ohio University and Northeastern University, 2022 – 2027 (Expected)
3. Qudus Rafiu, Northeastern University, 2023 – 2028 (Expected)
4. Jessica Chukwuka, Northeastern University, 2023 – 2026 (Expected)
5. Sana Heydarian, Northeastern University, 2023 – 2026 (Expected)
6. Lawrence Ajayi, Northeastern University, 2023 – 2026 (Expected)

Masters Student Supervised

1. Jessica Chukwuka, Ohio University, Graduated Summer 2023
2. Sana Heydarian, Ohio University, Graduated Summer 2023
3. Lawrence Ajayi, Ohio University, Graduated Summer 2023
4. Abdullah AL Harthy, Ohio University, Graduated Spring 2024

Undergraduate Students Supervised for Research Experience (Paid)

1. Garrett Pindine (Ohio University): 2020 – 2021, currently a graduate student at Carnegie Mellon University
2. Francesca Carney (Ohio University): 2021 – 2022, currently an employee at Honeywell
3. Sophia Almanza (Ohio University): 2021 – 2023, currently an employee at Timken
4. Kristen Jamora (Ohio University): 2022 – 2023, currently 4th year undergraduate student
5. Abdullah Al Harthy (Ohio University): Fall Semester 2022

Undergraduate Students Supervised for Course Credit (Unpaid)

1. Sophia Almanza, Ohio University, Summer Semester 2022 (Dynamic Scanning Calorimetry for evaluating the curing kinetics of phenolic resin with and without filler)
2. Kristen Jamora, Ohio University, Summer Semester 2022 (Thermogravimetric Analyses of Coal-Phenolic Mixtures to evaluate thermal properties)
3. Grant McClure, Ohio University, Summer Semester 2022 (Thermogravimetric Analyses of Uncontrolled and Controlled Recovery of Solids from Wastewater)
4. Francesca Carney, Ohio University, Fall Semester 2021 (Uncertainty Analyses in Chemical Wastewater Resource Recovery)
5. Sean Clody, Ohio University, Fall Semester 2021 (Evaluation of Acid Mine Drainage Water and Precipitates as Rare Earth Element precursors)

Thesis/Dissertation Committee Member

1. Emily Mullins, Ohio University, Environmental Studies M.S. Graduate (Thesis Defense: April 23, 2021)
2. Finn Maynard, Ohio University, Environmental Studies M.S. Graduate (Thesis Defense: May 24, 2023)
3. Ahmad Abu Hajer, Ohio University, Mechanical Engineering Ph.D. Candidate
4. Andrew Kasick, Ohio University, Chemical Engineering Ph.D. Candidate

Engineering Fundamentals Department, Ohio University Aug. ’17 to May ‘20
Assistant Professor of Instruction

- Taught ET 2300 – Principles of Engineering Materials – a technical elective for all engineering majors: chemical, mechanical, civil, industrial and electrical engineering undergraduate at Ohio University
- Average course evaluations of 3.6 out of 4.0, with an average class size of 49 students per section.

The Princeton Review, Columbus OH May ’14 to Jan. ‘15
MCAT Physics Instructor

- Taught college-level algebra-based Physics to prospective medical school applicants in preparation for the MCAT.
- Administering practice quizzes (generated by The Princeton Review) and providing tips on approaches to MCAT problem-solving.

PRE-TENURE TRACK RESEARCH EXPERIENCE

Institute for Sustainable Energy and the Environment, Ohio University Mar. ‘19 to Aug ‘20
Assistant Research Professor

- **Lead investigator** on electrochemical phosphorus recovery and electrochemical oxidative dehydrogenation of ethane.

Ashland Technical Center, Ashland Chemical Inc. Aug. ‘14 to Mar. ‘15
Research Chemist Intern

- Synthesized, characterized and evaluated phenol formaldehyde resins for use in a variety of applications including friction, lamination and filtration.
- Co-developed new phenol formaldehyde resins including a rubber-based resin for alternative use in friction applications and a water-soluble urea-based resin with ultra-low levels of residual formaldehyde.

Center for Electrochemical Engineering Research, Ohio University Dec. ‘11 to Mar. ‘15
Research Scientist

- Research and development of Cavity Ring-Down Spectroscopy for detecting low concentrations and weakly absorbing species in solution.
- Developed a reaction mechanism for urea conversion and explored self-assembled monolayers to improve reaction kinetics.

PRE-TENURE TRACK ADMINISTRATIVE EXPERIENCE

Center for Electrochemical Engineering Research, **Ohio University** Mar. ‘15 to Mar. ‘19
Assistant Director for Technical Business Development

- Lead quantitative analyst and literature reviewer for exploratory responses to requests for proposals and funding opportunity announcements, cutting proposal response rate by 50% (from 1-month to 2-week turnaround).

- Led outreach efforts using tradeshows, cold-calling, state and federal government workshops, online webinars and social media, increasing center outreach by 200% and center partnership by 20%.
- Successfully facilitated the management of diverse proposal writing teams involving research scientists, faculty and students as well as representatives from technology transfer and sponsored research office, resulting in over 16 submitted proposals and pre-proposals ranging from $0.2M per year to $3M per year.
- Conducted targeted marketing to prospective partner's market/needs based on primary research and secondary research including site visits, annual reports, trade magazines and business reports.
- Initiated and led thorough revamp of Center's marketing tools (website and literature) to succinctly highlight core competencies and capabilities.

PROFESSIONAL AFFILIATIONS

National Society of Black Engineers (NSBE), 2004 – present
Electrochemical Society, 2006 – present
American Institute of Chemical Engineers, 2019 – present
American Chemical Society, 2020 – present

PROFESSIONAL SERVICE (*FUTURE SERVICE IS ITALICIZED*)

Conference Symposium Leadership

- *2024 AIChE Annual Meeting:*
  - *Novel Approaches to CO_2 Utilization (Chair)*
  - *Water Reuse and Recycling (co-Chair)*
- 245th Electrochemical Society Meeting:
  - Nutrients Recovery and Selective Separations (co-Chair and co-Organizer)
  - Hydrocarbon Upgrading and Electroconversion of CO_2 (co-Chair and co-Organizer)
- 2023 AIChE Annual Meeting:
  - Electrochemical Advances to Enable Efficient Oxygen, Hydrogen and Water Reactions (co-Chair)
  - Novel Approaches to CO_2 Utilization (co-Chair)
  - Water Reuse and Recycling (co-Chair)
- 2022 AIChE Annual Meeting:
  - Electrochemical Advances to Enable Efficient Oxygen, Hydrogen and Water Reactions (co-Chair)
  - Sustainable Management and Uses of Post-Consumer Materials and Waste (co-Chair)
  - Novel Approaches to CO_2 Utilization (co-Chair)
  - Minority Affairs Committee Eminent Engineers Poster Session (co-Chair)
- 2021 AIChE Annual Meeting:
  - Sustainable Management and Uses of Post-Consumer Materials and Waste (Chair)
  - Novel Approaches to CO_2 Utilization (co-Chair)

Organization Leadership

- AIChE: Minority Affairs Committee Communications Team (2022 – present), Minority Affairs Committee Treasurer (2023)
- ECS: Education Committee (2023 – 2027)
- NSBE Ohio University Chapter: Advisor (2021 – 2023), co-Advisor (2017 – 2021)
- ACS Columbus Ohio Chapter: Treasurer (2022), Treasurer-Elect (2021)
- Theta Tau Ohio University Chapter: Advisor (2022 – 2023)

Journal Reviewer

Accounts of Chemical Research, ACS Catalysis, Joule, Journal of Colloid and Interface Science, Journal of the Electrochemical Society, Resources, Conservation & Recycling, Proceedings of the National Academy of Science

Grant Reviewer

- National Science Foundation
- American Chemical Society – Petroleum Research Fund

Panelist/Facilitator

- American Institute of Chemical Engineers Annual Meeting, New Faculty Forum: **Navigating the Transitions of an Academic Career Panelist** (November 2023)
- New England Future Faculty Workshop: **People of Color in the Academia Facilitator** (August 2023, August 2024)
- American Institute of Chemical Engineers Annual Meeting, Education Division: **ChE Summer School Highlights Panelist** (November 2022)

PROFESSIONAL DEVELOPMENT

DELTA Junior Faculty Institute, Virtual	October 2 – 4, 2022
ASEE/AIChE Summer School, Colorado School of Mines	July 24 – 29, 2022
NSF ENG CAREER Workshop, Virtual	April 21 – 23, 2021