

# Long Luo

The Carl R. Johnson Associate Professor of Chemistry

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## Education

- 2011 – 2014      **University of Utah**, Salt Lake City, UT  
Ph.D. Analytical Chemistry, GPA: **3.99/4.0**  
Thesis title: “Electrolyte negative differential resistance, nanoparticle dynamics in nanopores, and nanobubble generation at nanoelectrodes.”  
Advisor: Prof. Henry S. White
- 2005 – 2009      **Beijing University of Aeronautics and Astronautics (BUAA)**, China  
B.S. Applied Chemistry, minor in English (GPA: **3.84/4.0**; Rank **1<sup>st</sup>**)  
Thesis title: “Electrochemical detection of parts-per-billion copper ion based on the self-cleavage of specific DNAs”  
Advisor: Prof. Lidong Li

## Professional Experience

- 2022 – Present    **The Carl R. Johnson Early Career Endowed Professor**
- 2023 – Present    **Associate Professor**, Department of Chemistry, Wayne State University
- 2017 – 2023      **Assistant Professor**, Department of Chemistry, Wayne State University
- 2014 – 2017      **Postdoctoral Research Fellow**, Department of Chemistry, the University of Texas at Austin (PI: Prof. Richard M. Crooks)

## Honors and Awards

- The Royce W. Murray Young Investigator Award, the Society of Electroanalytical Chemistry, **2024**
- Alfred P. Sloan Research Fellow in Chemistry, **2023**
- *Chem Comm* 2022 Emerging Investigators, **2022**
- *Anal. Bioanal. Chem.* 2023 Young Investigators in (Bio-)Analytical Chemistry, **2022**
- Inaugural Carl Johnson Early Career Professorship, **2022**
- *Nanoscale* 2022 Emerging Investigators, **2021**
- NIH Maximizing Investigators' Research Award (MIRA), **2021**
- Wayne State University Academy of Scholars Junior Faculty Award, **2020-21**
- NSF CAREER Award, **2020**
- The *Langmuir* inaugural Early Career Advisory Board Member
- Young Professional & Early Career Travel Award, The Electrochemical Society, **2019**
- Taylor Young Investigator Travel Award, the Midwestern Universities Analytical Chemistry Conference (MUACC), **2018, 2021**
- Ebbing Faculty Development Award, Wayne State University, **2017, 2021**
- Dow Chemical First-Year Scholarship, University of Utah, **2012**
- Nanotechnology Training Program Fellowship, University of Utah, **2011**
- National Scholarship, BUAA, **2008**
- The First-Class Scholarship, BUAA, **2006-07**
- Kwang-Hua Scholarship, BUAA, **2006**

## Research Interests

Electrochemistry, Catalysis, Photocatalysis, Material and organic synthesis, Chemical and biosensing.

## Publications († Undergraduate researcher, \* Corresponding author)

### a) Manuscripts under review.

1. Li, S.; Peng, Y.; Geng, X.; Zhang, L.; Luo, L.\* Hydrogen Reduction Reaction Activities of Pt Grain Boundaries in Acidic and Alkaline Media, **2023**, submitted.
2. Streater, D.; Wang, D.; Fiankor, C.; Kennehan, E.; Hu, W.; Liu, D.; Kohlstedt, K.; Luo, L.; Zhang, J.; Huang, J., Exercising Control Over CO<sub>2</sub> Photoreduction Through Imine Reversal in Covalent Organic Frameworks, **2023**, submitted.
3. Ranaweera, R.; Wijesinghe, S.; Weerathna, U.; Chowdhury, A.;† Kajjam, A. B.; Wang, B.; Dittrich, T. M.; Allen, M. J.; Luo, L.\* Recycling Gadolinium from Hospital Effluent via Electrochemical Aerosol Formation, *ACS ES&T Engineering* **2023**, submitted.
4. Rodrigo, S.; Hazra, A.; Mahajan, J. P.; Nguyen, H. M.; \* Luo, L.\* Overcoming the Potential Window-Limited Functional Group Compatibility by Alternating Current Electrolysis, *J. Am. Chem. Soc.* **2023**, under revision.
5. Sheng, H.; Geng, X.; Liu, C.; \* Luo, L.\* How Can Machine Learning Better Serve Electrochemical Researchers? *Joule*, **2023**, under revision.

### (b) Accepted and published.

6. Geng, X.; Liu, D.; Hewa-Rahinduwage, C. C.; Brock, S. L.\* Luo, L.\* Electrochemical Gelation of Metal Chalcogenide Quantum Dots: Applications in Gas Sensing and Photocatalysis, *Acc. Chem. Res.*, **2023**, just accepted, DOI: 10.1021/acs.accounts.3c00042.
7. Behera, N.; Gunasekera, D.; Mahajan, J. P.; Frimpong, J.; Liu, Z.; Luo, L.\* Electrochemical Hydrogen Isotope Exchange of Amines Controlled by Alternating Current Frequency, *Faraday Discuss.*, **2023**, just accepted, DOI: 10.1039/D3FD00044C.
8. Liu, D.; Nyakuchena, J.; Maity, R.; Geng, X.; Mahajan, J.; Hewa-Rahinduwage, C.C.; Peng, Y.; Huang, J.\*; Luo, L.\* Quantum dot gels as efficient and unique photocatalysts for organic synthesis, *Chem. Comm.* **2022**, 58, 11260-11263 (*Invited contribution to the 2022 Emerging Investigators collection*).
9. Geng, X.; Li, S.; Mei, Z.; Li, D.; Zhang, L.\*; Luo, L.\* Ultrafast Metal Oxide Reduction Kinetics at the Pd/PdO<sub>2</sub> Interface Enables One-Second Detection of Hydrogen Gas Under Ambient Conditions, *Nano Research*, **2023**, 16, 1149–1157.
10. Ranaweera, R.; An, S.; Cao, Y.; Luo, L.\* Highly Efficient Preconcentration Using Anodically Generated Shrinking Gas Bubbles for Per- and Polyfluoroalkyl Substances (PFAS) Detection, *Anal. Bioanal. Chem.*, **2022**, Just accepted DOI:10.1007/s00216-022-04175-4. (*Invited contribution to the 2023 Young Investigators collection, selected as a Paper in Forefront by Editors*)
11. Geng, X.; Li, S.; Heo, J.; Peng, Y.; Hu, W.; Liu, Y.; Huang, J.; Ren, Y.; Li, D.\*; Zhang, L.\*; Luo, L.\* Grain-Boundary-Rich Noble Metal Nanoparticle Assemblies: Synthesis, Characterization, and Reactivity, *Adv. Funct. Mater.*, **2022**, 32, 2204169.
12. Gunasekara, D.; Mahajan, J. P.; Wanzi, Y.; Rodrigo, S.; Liu, W.; Tan, T.; Luo, L.\* Controlling One- or Two-Electron Oxidation for Selective Amine Functionalization by Alternating Current Frequency, *J. Am. Chem. Soc.* **2022**, 144, 22, 9874–9882.
13. Hewa-Rahinduwage, C.; Silva, K. L.; Geng, X.; Brock, S. L.\*; Luo, L.\* Electrochemical Gelation of Quantum Dots Using Non-Noble Metal Electrodes at High Oxidation Potentials, *Nanoscale*, **2021**, 13, 20625 - 20636. (*Invited contribution to the 2022 Emerging Investigators collection*)
14. Geng, X.; Liu, X.; Mawella-Vithanage, L.; Hewa-Rahinduwage, C.; Zhang, L.; Brock, S. L.; Tan, T.\*; Luo, L.\* Photoexcited NO<sub>2</sub> Enables Accelerated Response and Recovery in Light-activated NO<sub>2</sub> Gas Sensing, *ACS Sens.* **2021**, 6, 12, 4389–4397 (*Featured on the supplementary cover.*)
15. Yang, Z.; Zhang, S.; Zhao, H.; Li, A.; Luo, L.\*; Guo, L.\* Sub-Nano FeO<sub>x</sub> Clusters Anchored in an Ultrathin Amorphous Al<sub>2</sub>O<sub>3</sub> Nanosheet for Styrene Epoxidation, *ACS Catal.* **2021**, 11, 11542–11550.

16. Geng, X.; Li, S.; Mawella-Vithanage, L.; Ma, T.; Kilani, M.; Wang, B.; Ma, L.; Hewa-Rahinduwage, C.; Shafikova, A.; Nikolla, E.; Mao, G.; Brock, S. L.\*; Zhang, L.\*; Luo, L.\* Atomically dispersed Pb ionic sites in PbCdSe quantum dot gels enhance room-temperature NO<sub>2</sub> sensing, *Nat. Commun.* **2021**, *12*, 4895.
17. Zheng, H.; Li, H.; Luo, L.; Zhao, Z.; Henkelman, G.\* Factors that Influence Hydrogen Binding at Metal-Atop Sites, *J. Chem. Phys.* **2021**, *155* (2), 024703. (*Selected as an Editor's Pick*)
18. Hewa-Rahinduwage, C.; Silva, K. L.; Brock, S. L.\*; Luo, L.\* Quantum Dot Gelation Driven by Electrochemically Generated Metal-ion Crosslinkers, *Chem. Mater.* **2021**, *33*, 12, 4522–4528
19. Rodrigo, S.; Gunasekera, D.; Mahajan, J. P.; Luo, L.\* Alternating Current Electrolysis for Organic Synthesis, *Curr. Opin. Electrochem.* **2021**, *28*, 100712. (*Invited Review Article*)
20. An, S.; Ranaweera, R.; Luo, L.\* Harnessing Bubble Behaviors for New Analytical Strategies. *Analyst* **2020**, *145*, 7782-7795. (*Invited Minireview Article*)
21. Isuri Weeraratne, A. D. K.; Hewa-Rahinduwage, C. C.; Luo, L.\*; Verani, C. N.\* Electrochemical Quantification of Corrosion Mitigation on Iron Surfaces with Gallium (III) and Zinc (II) Metallosurfactants, *Langmuir* **2020**, *36*, 47, 14173–14180.
22. Rodrigo, S.; Um, C.; Gunasekera, D.; Mixdorf, J.; Nguyen, H. M.\*; Luo, L.\* Alternating Current Electrolysis for Organic Electrosynthesis: Trifluoromethylation of (Hetero)arenes. *Org. Lett.* **2020**, *22*, 17, 6719–6723. (*Featured on the supplementary cover.*)
23. Hewa-Rahinduwage, C.; Geng, X.; Silva, K. L.; Niu, X.; Zhang, L.\*; Brock, S. L.\*; Luo, L.\* Reversible Electrochemical Gelation of Metal Chalcogenide Quantum Dots, *J. Am. Chem. Soc.* **2020**, *142*, 28, 12207–12215 (*Highlighted by X-MOL; Featured on the supplementary cover.*)
24. Yu, F.; Dickson, J. L.; Loka, R. S.; Xu, H.; Schaugaard, R. N.; Schlegel, H. B.; Luo, L.\*; Nguyen, H. M.\* Diastereoselective sp<sup>3</sup> C-O Bond Formation via Visible Light-Induced, Copper-Catalyzed Cross Couplings of Anomeric Alkyl Bromides with Aliphatic Alcohols. *ACS Catal.* **2020**, *10* (11), 5990-6001.
25. Ranaweera, R.; Luo, L.\* Electrochemistry of Nanobubbles, *Curr. Opin. Electrochem.* **2020**, *22*, 102-109. (*Invited Review Article*)
26. Zhao, X.; Ranaweera, R.; Mixdorf, J. C.; Nguyen, H. M.; Luo, L.\* Lowering Interfacial Dissolved Gas Concentration for Highly Efficient Hydrazine Oxidation at Platinum by Fluorosurfactant Modulation, *ChemElectroChem* **2020**, *7*, 55-58. (*Featured on the cover picture; Invited contribution to Richard M. Crooks Festschrift*)
27. Isuri Weeraratne, A. D. K.; Hewa-Rahinduwage, C. C.; Gonawala, S.; Luo, L.\*; Verani, C. N.\* Molecular Films of Zn<sup>II</sup>- and Ga<sup>III</sup>-based Metallosurfactants for Mitigation of Aluminum Pitting Corrosion, *Chem.: Eur. J.* **2019**, *25*, 14048–14053.
28. Cao, Y.; Lee, C.; Davis, E. T. J.; Si, W.; Wang, F.; Trimpin, S.; Luo, L.\* 1000-Fold Preconcentration of Per- and Polyfluorinated Alkyl Substances (PFAS) within 10 min via Electrochemical Aerosol Formation. *Anal. Chem.* **2019**, *91*, 14352-14358. (*Featured on the supplementary cover*)
29. Ranaweera, R.; Ghafari, C.;<sup>†</sup> Luo, L.\* Bubble-Nucleation-Based Method for the Selective and Sensitive Electrochemical Detection of Surfactants. *Anal. Chem.* **2019**, *91*, 7744-7748. (*Highlighted by C&EN News, Nature Nanotechnology, and X-MOL; Featured on the supplementary cover*)
30. Zhao, X.; Ren, H.; Luo, L.\* Gas Bubbles in Electrochemical Gas Evolving Reactions, *Langmuir* **2019**, *35*, 16, 5392-5408. (*Invited Feature Article*)
31. Gunasekera, D.; Kilani, M.; Yu, X.; Chen, Q.; Mao, G.; Luo, L.\* A Simple Mass Transfer-Based Method for Electrosynthesis of Uniform Tetrathiafulvalene Bromide Micro/Nanowires with High Aspect Ratio and Controlled Density. *J. Electrochem. Soc.*, **2019**, *166*, H63-H69.
32. Zhao, X.; Ranaweera, R.; Luo, L.\* Highly Efficient Hydrogen Evolution of Platinum via Tuning Interfacial Dissolved-Gas Concentration, *Chem. Commun.*, **2019**, *55*, 1378-1381. (*Featured on the back cover*)
33. Chen, Q.; Ranaweera, T.R.; Luo, L.\* Hydrogen Bubble Formation at Hydrogen-Insertion Electrodes, *J. Phys. Chem. C*, **2018**, *122*, 15421–15426.
34. Chen, Q.; Luo, L.\* Correlation between Gas Bubble Formation and Hydrogen Evolution Reaction Kinetics at Nanoelectrodes, *Langmuir*, **2018**, *34*, 4554–4559.

**Before joining Wayne State University**

35. Lapp, A.S.; Duan, Z.; Marcella, N.; Luo, L.; Genc, A.; Ringnald, J.; Frenkel, A. I.; Henkelman, G.; Crooks, R.M. Experimental and Theoretical Structural Investigation of AuPt Nanoparticles Synthesized using a Direct Electrochemical Method, *J. Am. Chem. Soc.*, **2018**, *140*, 6249–6259.
36. Huang, K.; Clausmeyer, J.; Luo, L.; Jarvis, K.; Crooks, R. M. Shape-Controlled Electrodeposition of Single Pt Nanocrystals onto Carbon Nanoelectrodes, *Faraday Discuss.*, **2018**, *210*, 267–280.
37. He, W.; Luo, L.; Liu, Q.; Chen, Z. Colorimetric Sensor Array for Discrimination of Heavy Metal Ions in Aqueous Solution Based on Three Kinds of Thiols as Receptors, *Anal. Chem.* **2018**, *90*, 4770–4775.
38. Li, H.; Luo, L.; Kunal, P.; Bonifacio, C. S.; Duan, Z.; Yang, J. C.; Humphrey, S. M.; Crooks, R.M.; Henkelman, G. Oxygen Reduction Reaction on Classically Immiscible Bimetallics: A Case Study of RhAu, *J. Phys. Chem. C*, **2018**, *122*, 5, 2712–2716.
39. Luo, L.; Timoshenko, J.; Lapp, A.; Frenkel, A.; Crooks, R. M. Structural characterization of Rh and RhAu dendrimer-encapsulated nanoparticles, *Langmuir*, **2017**, *33*, 12434–12442.
40. Luo, L.; Duan, Z.; Li, H.; Kim, J.; Henkelman, G.; Crooks, R. M. Tunability of the Adsorbate Binding on Bimetallic Alloy Nanoparticles for the Optimization of Catalytic Hydrogenation, *J. Am. Chem. Soc.*, **2017**, *139*, 5538–5546.
41. Li, X.; Luo, L.; Crooks, R. M. Faradaic Ion Concentration Polarization on a Paper Fluidic Platform. *Anal. Chem.*, **2017**, *89*, 4294–4300
42. Lan, W.; Martin, E.; Luo, L.; Perera, R.; Wu, X.; Martin, C.; White, H.S. Voltage Rectified Current and Fluid Flow in Conical Nanopores, *Acc. Chem. Res.*, **2016**, *49*, 2605–2613.
43. Luo, L.; Zhang, L.; Duan, Z.; Henkelman, G.; Crooks, R. M. Efficient CO Oxidation using Dendrimer-Encapsulated Pt Nanoparticles Activated with <2% Cu Surface Atoms, *ACS Nano*, **2016**, *10*, 8760–8769.
44. German, S.R.; Edwards, M. A.; Chen, Q.; Luo, L.; White, H. S. Electrochemistry of Single Nanobubbles. Estimating the Critical Size of Bubble-Forming Nuclei for Gas-Evolving Electrode Reactions, *Faraday Discuss.*, **2016**, *193*, 223–240.
45. Cunningham, J. C.; Kogan, M. R.; Tsai, Y. J.; Luo, L.; Richards, I.; Crooks, R. M. Paper-based Electrochemical Detection of Silver Nanoparticle Labels by Galvanic Exchange, *ACS Sens.*, **2016**, *1*, 40–47. (**Featured on the front cover, Top 10 most read paper in 2016**)
46. Li, X.; Luo, L.; Crooks, R. M. Low-Voltage Paper Isotachopheresis Device for DNA Focusing, *Lab Chip*, **2015**, *15*, 4090–4098. (**The first two authors contributed equally.**)
47. Luo, L.; Zhang, L.; Henkelman, G.; Crooks, R. M. Unusual Activity Trend for CO Oxidation on Pd<sub>x</sub>Au<sub>140-x</sub>@Pt Core@Shell Nanoparticle Electrocatalysts, *J. Phys. Chem. Lett.*, **2015**, *6*, 2562–2568.
48. Chen, Q.; Luo, L.; White, H. S. Electrochemical Generation of a Hydrogen Bubble at a Recessed Platinum Nanopore Electrode, *Langmuir*, **2015**, *31*, 4573–4581.
49. Luo, L.; Li, X.; Crooks, R. M. Low-Voltage Origami-Paper-Based Electrophoretic Device for Rapid Protein Separation, *Anal. Chem.*, **2014**, *86*, 12390–12397.
50. Luo, L.; German, S.; Lan, W. J.; Mega, T. L.; White, H. S. Resistive Pulse Analysis of Nanoparticles, invited review by *Annu. Rev. Anal. Chem.*, **2014**, *7*, 513–535.
51. Chen, Q.; Luo, L.; Faraji, H.;<sup>†</sup> Feldberg, S.W.; White, H.S. Electrochemical Measurements of Single H<sub>2</sub> Nanobubble Nucleation and Stability at Pt Nanoelectrodes, *J. Phys. Chem. Lett.*, **2014**, *5*, 3539–3544.
52. Luo, L.; Holden, D. A.; White, H. S. Negative Differential Electrolyte Resistance in a Solid-State Nanopore Resulting from Electroosmotic Flow Bistability, *ACS Nano*, **2014**, *8*, 3023–3030. (**Featured on the book cover of Nanoelectrochemistry edited by Michael Mirkin and Shigeru Amemiya.**)
53. Luo, L.; Johnson, R. P.; White, H. S. Numerical Modeling of the Bistability of Electrolyte Transport in Conical Nanopores. *Proceeding of the 2013 COMSOL Conference*, **2013**. (**Top 10 Abstracts recommended by the Program Committee**)
54. Luo, L.; White, H. S. Electrogenation of Single Nanobubbles at Sub-50-nm-Radius Platinum Nanodisk Electrodes. *Langmuir*, **2013**, *29*, 11169–11175.

55. German, S.R.; Luo, L.; White, H. S.; Mega, T. L. Controlling Nanoparticle Dynamics in Conical Nanopores, *J. Phys. Chem. C*, **2013**, *117*, 703–711.
56. Luo, L.; Holden, D.A.; Lan, W. J.; White, H. S. Tunable Negative Differential Electrolyte Resistance in a Conical Nanopore in Glass. *ACS Nano*, **2012**, *6*, 6507–6514.
57. Li, L.; Luo, L.; † Mu, X.; † Sun, T.; Guo, L. A Reagentless Signal-on Architecture for Electronic, Real-time Copper Sensors Based on Self-cleavage of DNAzymes, *Anal. Methods*, **2010**, *2*, 627–630.

## Patents

1. **L. Luo**; X. Geng, Nanoparticle Assembly for Catalytic Hydrogen Sensing, **2021** U.S. Provisional Patent Application No. 63/278,451, filed Nov.11, 2021
2. **L. Luo**; R. Ranaweera, Bubble-Nucleation Based Electrochemical Methods for the Enrichment and Detection of Surfactants in Aqueous Solutions. **2020** U.S. Provisional Patent Application No. 62/960,523, filed Jan 13, 2020, Pub. No. US20210215631A1 published Jul 15, 2021
3. **L. Luo**; H. M. Nguyen; Alternating Current Electrochemistry for Use in Organic Synthesis. **2020** U.S. Provisional Patent Application No. 62/957,092, filed Jan 3, 2020, Pub. No. US20210207274A1 published Jul 8, 2021, Patent No. US 11,499,238 B2, Date of Patent: Nov 15, 2022
4. R. M. Crooks; I. Richards; J. Cunningham; M. Kogan; Y.-J. Tsai; **L. Luo** "Methods and Systems for the Detection of Analytes" U.S. Provisional Patent Application 62/144,902, Patent Application PCT/US16/26665, Int. Pub. No. WO 2016/164738 A1 published Oct 13, 2016.

## Research Grants and External Support

### External (total: \$4,458,929)

1. United States Army Corps of Engineers (W912HZ-22-2-0002): Developing a Low-Cost Device for On-Site Detection of Per - and Polyfluoroalkyl Substances (PFAS) in Drinking Water  
Total Award: \$ 229,405      Role: Lead PI      Period:12/03/2021-12/02/2022  
(\$118,636 to Luo, co-PI: Yong Xu)
2. United States Army Corps of Engineers (W912HZ-23-2-0038): Developing a Low-Cost Device for On-Site Detection of Per - and Polyfluoroalkyl Substances (PFAS) in Drinking Water  
Total Award: \$ 259,825.79      Role: Lead PI      Period:10/01/2023-09/30/2024  
(\$129,913 to Luo, co-PI: Yong Xu)
3. United States Army Corps of Engineers (W912HZ-21-2-0048): Rare-Earths from US Extractions (REUSE).  
Total Award: \$3,130,353      Role: Senior collaborator      Period:09/30/2021-09/29/2023  
(\$ 169,807 to Luo, PIs: Matthew Allen and Timothy Dittrich)
4. Department of Energy (Award # 78705): Design of Structural Inhomogeneities to Control Functional Properties.  
Total Award: \$3,600,000      Role: co-PI (Thrust Leader)      Period: 12/01/2021-8/31/2024  
(\$501,178 to Luo, co-PIs: Peter Sushko, Yingge Du, Dongsheng Li, Micah Prange, and Kelsey Stoerzinger)
5. National Institute of Health, the Maximizing Investigators' Research Award (MIRA -1R35 GM142590-01): Alternating Current Electrolysis for Organic Synthesis  
Total Award: \$1,786,344      Role: Sole PI      Period: 07/01/2021-06/30/2026
6. A. O. Smith Corp., Research Seed Funds  
Total Award: \$5,000      Role: Sole PI      Period: 03/01/2021-05/31/2021
7. National Science Foundation (CHE-1943737) CAREER: CAS: Developing Gas Bubbles as a New Tool for Surface-Active Agent Analysis

- Total Award: \$650,000      Role: Sole PI      Period: 02/01/2020-01/31/2025
8. National Science Foundation (CHE- 2303622) MRI: Helium Recovery Equipment for a Regional NMR and EPR Laboratory at Wayne State University  
Total Award: \$219,353      Role: co-PI      Period: 04/2023-03/2026
9. Alfred P. Sloan Foundation, Sloan Research Fellowship: Exploring New Interdisciplinary Frontiers in Electrochemistry  
Total Award: \$75,000      Role: Sole PI      Period: 09/2023-08/2025
10. National Science Foundation (CHE- 2247057), GOALI: Developing New Hydrogen Isotope Exchange Strategies for Isotope Labelling of Pharmaceuticals  
Total Award: \$ 400,008      Role: Lead PI      Period: 08/01/2023-07/31/2026  
(\$400,008 to Luo, co-PI: Jingwei Li, Merck & Co)
11. National Institute of Health, Administrative Supplement Request for An Ultra-High Performance Liquid Chromatography-Mass Spectrometer (3R35GM142590-03W1)  
Total Award: \$ 203,690      Role: Sole PI      Period: 09/01/2023-08/30/2024
12. National Science Foundation (CHE-2002158) NSF Center for Synthetic Organic Electrochemistry  
Total Award: \$20,000,000      Role: Investigator      Period: 09/01/2023-08/31/2024  
(\$200,000 to Luo, Lead PI: Shelley Minteer)

**Internal (total:\$233,500)**

13. Wayne State University, Faculty Competition for Postdoctoral Fellows  
Total Award: \$60,000      Role: PI      Period: 09/01/2022-08/31/2024
14. Wayne State University, the Carl R. Johnson Early Career Professorship  
Total Award: \$100,000      Role: Professorship holder      Period: 2022-2025
15. Wayne State University, Ebbing Faculty Development Award, A Metal-Free and Catalyst-Free Approach to Achieving the Chemical Reactivity of Photoredox Catalysis  
Total Award: \$2,300      Role: PI      Period: 2021
16. Wayne State University, Faculty Competition for Postdoctoral Fellows  
Total Award: \$60,000      Role: PI      Period: 01/04/2021-01/03/2023
17. Wayne State University, University Research Grant, Bubble Nucleation-based Electrochemical Detection (BED) Method for Determination of Per- and Polyfluoroalkyl Substances (PFAS) in Water  
Total Award: \$10,000      Role: PI      Period: 07/01/2019-06/30/2020
18. Wayne State University, Ebbing Faculty Development Award, Development of Low-Cost High-Sensitivity Paper-Based Biosensors for Point-of-Care Testing  
Total Award: \$1,200      Role: PI      Period: 2017

## Invited Seminars at Universities and Research Institutes

1. Department of Chemistry, Colorado State University, Fort Collins, CO, Feb 7, **2024**.
2. Department of Chemistry and Biochemistry, George Mason University, Fairfax, VA, Sep 29, **2023**.
3. Department of Chemistry and Biochemistry, University of Arizona, Tuscon, AZ, Apr 6, **2023**.
4. The NSF Center for Integrated Catalysis, University of California Los Angeles, Mar 7, **2023**.
5. Brewing Chemistry Lecture series, ACS Detroit local section, Feb 21, **2023**.

6. The Center for Advanced Toward Sustainable Urban Systems (CATSUS), California State University, Los Angeles, CA, Feb 10, **2023**.
7. Department of Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC, Feb 6, **2023**.
8. Department of Chemistry, University of Virginia, Charlottesville, VA, Feb 3, **2023**.
9. Department of Chemistry, Capital Normal University, Beijing, China, Nov 17, **2022** (postponed).
10. Department of Chemistry, University of Utah, Salt Lake City, UT, Nov 14, **2022**.
11. Department of Chemistry, Washington University in St. Louis, MO, Oct 20, **2022** (postponed).
12. Department of Chemistry, University of Michigan, Ann Arbor, MI, Oct 6, **2022**.
13. Department of Chemistry, University of California, Davis, CA, May 3, **2022**
14. Department of Chemistry and Biochemistry, Utah State University, Logan, UT, Apr 22, **2022**
15. Department of Chemistry and Biochemistry, University of Alabama, Tuscaloosa, AL, Apr.14. **2022**.
16. Department of Chemistry, University at Albany - State University of New York, NY, Apr 12, **2022**.
17. Department of Chemistry, **Frontiers Seminar Series**, Wayne State University, Detroit, Apr 11, **2022**.
18. Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX, Apr 5, **2022**.
19. Department of Chemistry, the University of Texas at Austin, Austin, TX, Mar 31, **2022**.
20. Department of Chemistry, Texas A&M University, College Station, TX, Mar 29, **2022**.
21. Department of Chemistry, University of Houston, Houston, TX, Mar 1, **2022**.
22. Department of Chemistry, University of Virginia, Charlottesville, VA, Feb 18, **2022**.
23. Department of Chemistry, University of Washington, Seattle, WA, Feb 7, **2022**.
24. Department of Chemistry, The Ohio State University, Columbus, OH, Jan 31, **2022**.
25. Department of Chemistry and Biochemistry, University of California Santa Barbara, CA, Jan 11, **2022**
26. Department of Chemistry, the University of Illinois at Urbana-Champaign, IL, Dec 10, **2021**.
27. National Science Foundation, Center for Synthetic Organic Electrochemistry, University of Utah, Salt Lake City, UT, Dec 9, **2021**.
28. Department of Chemical Engineering, University of California, Santa Barbara, CA, Dec 6, **2021**.
29. Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, Nov 23, **2021**
30. Department of Chemistry, Indiana University Bloomington, IN, Nov 18, **2021**.
31. Department of Chemistry, Iowa State University, Ames, IA, Nov 5, **2021**.
32. Department of Chemistry, Michigan State University, East Lansing, MI, Oct 22, **2021**.
33. Department of Chemistry and Biochemistry, the University of Arkansas, Fayetteville, AR, Oct 8, **2021**.
34. Department of Chemistry, University of the Pacific, Stockton, CA, Oct 5, **2021**.
35. Department of Chemistry, University of Cincinnati, Cincinnati, OH, Sep 17, **2021**.
36. Department of Chemistry & Biochemistry, University of California, Los Angeles, CA, Mar. **2021**.
37. Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL, Feb. **2021**
38. Department of Chemistry, University of California, Irvine, CA, Oct. **2020**
39. Department of Chemistry and Biochemistry, California State University, Fullerton, CA, Oct. **2020**.
40. Department of Chemistry and Biochemistry, California State University, Long Beach, CA, Sep. **2020**.
41. Department of Chemistry and Biochemistry, San Diego State University, San Diego, CA Sep. **2020**
42. Department of Chemistry, University of Massachusetts, Lowell, MA, Sep. **2020**
43. Chemistry Department, Millikin University, Decatur, IL Feb. **2020**
44. Department of Chemistry and Biochemistry, **Dwain L Ford Guest Lecture Series**, Andrews University, Berrien Springs, MI Feb. **2020**.
45. Department of Chemical Engineering and Materials Science, Wayne State University, Detroit, MI,

- Jan. **2020**.
46. Department of Chemistry and Biochemistry, California State University, Chico, CA, Oct. **2019**.
  47. Department of Chemistry, Oakland University, Auburn Hills, MI, Feb. **2019**.
  48. Chemistry Department, Eastern Michigan University, Ypsilant, MI, Feb. **2019**.
  49. Department of Chemistry, Ball State University, Muncie, IN, Nov. **2018**.
  50. BASF Ovonic Battery site, Rochester Hills, MI, Feb. **2018**.
  51. Beijing Jiaotong University, Beijing, China, Dec. **2017**.
  52. Institute of Chemistry, Chinese Academy of Sciences, Beijing, China, Dec. **2017**.
  53. Department of Chemistry & Biochemistry, University of California, Los Angeles, CA, Jan. **2017**.
  54. Department of Chemistry, University of Georgia, Athens, GA, Jan. **2017**.
  55. Department of Chemistry, Wayne State University, Detroit, MI, Dec. **2016**.
  56. Department of Chemistry & Biochemistry, Kent State University, Kent, OH, Dec. **2016**.
  57. Department of Chemistry & Biochemistry, Boise State University, Boise, ID, Nov. **2016**.
  58. Department of Chemistry, Saint Louis University, St. Louis, MO, Nov. **2016**.
  59. Chemistry Department, University of North Carolina-Chapel Hill, Chapel Hill, NC, Nov. **2016**.
  60. Department of Chemistry, University of Cincinnati, Cincinnati, OH, Nov. **2016**.
  61. Department of Chemistry and Biochemistry, California State University, Los Angeles, CA, Feb. **2016**.
  62. Chemical Engineering and Materials Science Department, the University of Minnesota, Minneapolis, MN, Feb. **2016**.
  63. Department of Chemistry, Marquette University, Milwaukee, WI, Jan. **2016**.
  64. Department of Chemistry and Chemical Biology, University of California, Merced, CA, Dec. **2015**.
  65. School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA, Nov. **2015**.

## Conference and Workshop Presentations

1. **Luo, L.**, Electrochemical Hydrogen Isotope Exchange of Amines Controlled by Alternating Current Frequency, Electroynthesis Faraday Discussion, July **2023**, Edinburgh, United Kingdom (oral).
2. **Luo, L.**, Rational Design of Alternating Current Electrolysis (ACE) for Organic Synthesis, the 27th ACS Green Chemistry and Engineering Conference, June **2023**, Long Beach, CA (invited oral).
3. **Luo, L.**, Grain-boundary-rich Pt nanoparticle assembly enables room-temperature catalytic hydrogen sensing, Michigan Catalysis Society Symposium, May **2023**, Ann Arbor, MI (oral).
4. **Luo, L.**, Grain Boundary Rich Nobel Metal Nanoparticle Assemblies: Synthesis, Characterization, and Reactivity, MRS Spring Meeting and Exhibit, April **2023**, San Francisco, CA (invited oral).
5. **Luo, L.**, Quantum Dot Gel as a Highly Sensitivity and Tunable Platform for Gas Sensing, ACS Spring 2023 Meeting & Exposition, Mar. **2023**, Indianapolis, IN (Oral).
6. **Luo, L.**, Grain-boundary-rich Pt nanoparticle assembly enables room-temperature catalytic hydrogen sensing, ACS Spring 2023 Meeting & Exposition, Mar. **2023**, Indianapolis, IN (Oral).
7. **Luo, L.**, 1000-Fold Preconcentration of Per- and Polyfluorinated Alkyl Substances (PFAS) via Electrochemical Bubble-Bursting Aerosol Formation, ACS Spring 2023 Meeting & Exposition, Mar. **2023**, Indianapolis, IN. (invited oral)
8. **Luo, L.**, Bubble-based strategies for PFAS preconcentration and detection, Pittcon, Mar. **2023**, Philadelphia, PA, (invited oral)
9. **Luo, L.**, Understanding and Predicting the Reaction Selectivity in Alternating Current Electrolysis (ACE) by Electroanalytical Tools, Pittcon, Mar. **2023**, Philadelphia, PA, (invited oral)
10. **Luo, L.**, 1000-Fold Preconcentration of Per- and Polyfluorinated Alkyl Substances (PFAS) via Electrochemical Aerosol Formation, ANACHEM, Nov. **2022**, Livonia, MI. (invited oral)
11. **Luo, L.**, Developing High-Performance Hydrogen Sensors Guided by Catalyst Design Principles. Midwest Universities Analytical Chemistry Conference, Oct. **2021**, Columbus, OH. (Oral)



12. **Luo, L.**, Electrochemical Assembly of Quantum Dots, Nanopore Weekly Meeting, July **2021** (invited oral)
13. **Luo, L.**, Reversible Electrochemical Gelation of Metal Chalcogenide Quantum Dots, ACS Spring 2021 Virtual Meeting & Exposition, Mar. **2021** (Oral)
14. **Luo, L.**; Ranaweera, R.; Cao, Y. Bubble-based electrochemical methods for preconcentration and detection of per- and polyfluoroalkyl substances (PFAS) in water, Pittcon, Mar. **2021** (Invited oral)
15. **Luo, L.**; Rodrigo, S.; Um, C.; Gunasekera, D.; Mixdorf, J.; Nguyen, H. M. Mimicking Photoredox Catalysis using Electrochemistry for Organic Synthesis, ACS Fall 2020 Virtual Meeting & Exposition, Aug. **2020** (Oral)
16. **Luo, L.**; Ranaweera, R.; Cao, Y. Bubble-based electrochemical methods for detection of per- and polyfluoroalkyl substances (PFAS) in water, ACS Fall 2020 Virtual Meeting & Exposition, Aug. **2020** (Oral)
17. **Luo, L.**, Hewa-Rahinduwage, C.; Geng, X.; Silva, K. L.; Niu, X.; Zhang, L.; Brock, S. L. Reversible Electrochemical Gelation of Metal Chalcogenide Quantum Dots, ACS Fall 2020 Virtual Meeting & Exposition, Aug. **2020** (Oral)
18. **Luo, L.**; Rodrigo, S.; Um, C.; Gunasekera, D.; Mixdorf, J.; Nguyen, H. M. Mimicking Photoredox Catalysis using Electrochemistry for Organic Synthesis, Gordon Research Conference, **2020** Ventura, CA. (Poster)
19. **Luo, L.**, the November meeting of the Detroit Section of the Electrochemical Society, Nov. **2019**, Livonia, MI. (Invited oral)
20. **Luo, L.** the 2019 Telluride Workshop on Computational Materials Chemistry, Jul. **2019**, Telluride, CO. (Invited oral)
21. **Luo, L.**; Zhao, X.; Ranaweera, R. Highly Efficient Hydrogen Evolution of Platinum via Tuning Interfacial Dissolved-Gas Concentration, the 235<sup>th</sup> ECS meeting, May **2019**, Dallas, TX. (Oral)
22. **Luo, L.**; Ranaweera, R. Bubble Nucleation-Based Electrochemical Sensor for Detection of Per- and Polyfluoroalkyl Substances (PFAS) in Water, the 235<sup>th</sup> ECS meeting, May **2019**, Dallas, TX. (Oral)
23. **Luo, L.** Controlling Concentration Overpotentials for High Efficiency Gas Evolution Reactions, 40th Annual Spring Symposium of the Michigan Catalysis Society, May **2019**, Dearborn, MI. (Oral)
24. **Luo, L.**; Ranaweera, R. Bubble Nucleation-Based Electrochemical Sensor for Detection of Per- and Polyfluoroalkyl Substances (PFAS) in Water, Pittcon Conference & Expo, Mar. **2019**, Philadelphia, PA. (Oral)
25. **Luo, L.**; Ranaweera, R. Bubble Nucleation-based Electrochemical Detection of Per- and Polyfluoroalkyl Substances (PFASs) in Water, Midwest Universities Analytical Chemistry Conference, Nov. **2018**, East Lansing, MI. (Oral)
26. **Luo, L.**; Ranaweera, R. Nanobubble Nucleation-based Electrochemical Sensor for Environmental Monitoring, 70th Southeastern Regional Meeting, Nov. **2018**, Augusta, GA. (Invited oral)
27. **Luo, L.** Exploring New Frontiers in Electroanalytical and Electrocatalytic Sciences, BASF/Wayne State University Science Event, Oct. **2018**, Wyandotte, MI. (Invited poster)
28. **Luo, L.**; Gunasekera, D.; Kilani, M.; Yu, X.; Mao, G. Controlled Electrodeposition of Tetrathiafulvalene Bromide (TTFBr) Nanowires for Gas Sensing, 256th ACS National Meeting & Exposition, Aug. **2018**, Boston, MA. (Oral)
29. **Luo, L.**; Chen, Q. New Insights into Electrochemical Nucleation Processes, Electrochemistry Gordon Research Conference, **2018** Ventura, CA. (Poster)
30. **Luo, L.**; Kim, J.; Duan, Z.; Li, H.; Henkelman, G.; Crooks, R. M. A Comparative Study of Dendrimer-Encapsulated PtAu and PdAu Alloy Nanoparticles for Allyl Alcohol Hydrogenation, Center for Electrochemistry (CEC) Annual Workshop on Electrochemistry, **2016** Austin, TX. (Poster)
31. **Luo, L.**; Zhang, L.; Duan, Z.; Kim, J.; Li, H.; Henkelman, G.; Crooks, R. M. Theoretical and Experimental Approach for Correlating Nanoparticle Structure and Catalytic Activity, Electrochemistry Gordon Research Conference, **2016** Ventura, CA. (Poster)
32. **Luo, L.**; Li, X.; Crooks, R. M. Low Voltage Origami Paper-Based Electrophoretic Devices (oPEpDs) for Rapid Protein Separation Applications, Pittcon Conference & Expo, **2015** New Orleans, LA. (Oral)

33. **Luo, L.**; Li, X.; Crooks, R. M. Low Voltage Paper-based Electrophoretic Devices, Center for Electrochemistry (CEC) Annual Workshop on Electrochemistry, **2015** Austin, TX. (Poster)
34. **Luo, L.**; Johnson, R. P.; White, H.S. Numerical Modeling of the Bistability of Electrolyte Transport in Conical Nanopores, COMSOL Conference, Oct. **2013**, Boston, MA. (Oral & Poster)
35. **Luo, L.**; Holden, D. A.; White, H. S. Electrolyte Negative Differential Resistance (NDR) in Glass Nanopores and its Sensing Applications, the 87th ACS 2013 Colloid & Surface Science Symposium, Jun. **2013**, Riverside, CA. (Oral)
36. The Second Nanobubbles and Biological Systems Conference, April **2013**, Tacoma, WA. (Invited attendee)
37. NanoUtah 2012 Conference & Expo, Oct. **2012**, Salt Lake City, UT.

## Reviewer for Journals (40+)

*Journal of the American Chemical Society, Journal of Physical Chemistry Letters, Langmuir, ACS Applied Materials & Interfaces, RSC Advances, Journal of Electroanalytical Chemistry, Sensors & Actuators: B. Chemical, Electrochemistry Communications, The Journal of Physical Chemistry, Analytical Chemistry, Nature Catalysis, Chemical Communications, ACS Nano, Chemical Science, Electroanalysis, Nature Communications, Small, Analyst, Journal of Materials Chemistry A., Chemistry of Materials, Joule, Journal of The Electrochemical Society, Electrochimica Acta, Applied Catalysis B: Environmental, ChemElectroChem, Scientific Reports, Medical Devices & Sensors, The Innovation, Nano Research, Synlett, Applied Energy, Materials Advances, Organic Letters, Nano Select, Nature Synthesis, Nano Letters, ACS Applied Nano Materials, Angewandte Chemie, JACS Au, ACS Measurement Science Au, Energy&Fuels, Advanced Energy Materials, ACS Energy Letters, Nature Materials, Advanced Synthesis & Catalysis.*

## Reviewer for Funding Agencies

- The Department of Defense, Strategic Environmental Research and Development Program
- The U.S. Department of Energy
- National Science Foundation
- Czech Science Foundation
- ACS Petroleum Research Fund
- The Netherlands Organisation for Scientific Research (NWO, the Dutch Research Council)
- The Center for the Advancement of Science in Space, International Space Station U.S. National Laboratory
- Research Corporation for Science Advancement

## Courses Taught

CHM 3120 Analytical Chemistry, Fall 2022, Fall 2023  
CHM 7740 Instructor for the topic of Publication Ethics & Authorship Allocation, Fall 2021, Fall 2022  
CHM 5900 Biomedical Research as Discovery, Winter 2021  
CHM 2280 General Chemistry II, Fall 2020  
CHM 7120 Electroanalytical Chemistry, Fall 2017, Fall 2018, Winter 2022  
CHM 5570 Instrumental Analytical Chemistry Laboratory, Winter 2018, Winter 2019, Winter 2020  
CHM 7142 Data Analysis, Fall 2019

## Departmental and University Service

- Analytical Division Head, 2023
- Election Committee Member, Wayne State University Association of Chinese Faculty and Staff, 2022
- ReBUILDetroit Faculty Pilot Award Review Panel, 2022
- Member, Wayne State University Chemical Safety Committee, 2021-present
- Member, Departmental Teaching Assignments Committee, 2021-2022, 2022-2023
- Member, Departmental Green Chemistry Committee, 2020-202, 2021-2022, 2022-2023

- Member, Departmental Gopal Symposium Committee, 2020-present
- Session leader and presenter, STEM Day, Mar. 2020
- Presenter, Advanced Placement Day, 2019
- Member, Departmental Graduate Recruiting Committee, 2019-2020, 2020-2021, 2021-2022
- Member, Departmental By-laws Committee, 2019
- Member, Master of Arts in Chemistry Program Special Committee, Nov. 2018
- Judge for the C.P. Lee Endowed Graduate Student Research Presentation Day, Oct. 2018
- Member, Graduate Admission Committee, 2017-2018, 2018-2019, 2019-2020, 2022-2023, 2023-2024
- Member, Departmental Safety Committee, 2018-2019, 2021-2022
- Judge for the College of Arts and Sciences Undergraduate Research Fair, Mar. 2018
- Reviewer for the Undergraduate Research Opportunities Program (UROP)-Barber Undergraduate Research Award, Aug. 2018

## Professional Society Membership

- The Michigan Chapter of the North American Catalysis Society (2022-present)
- Society of Electroanalytical Chemistry (Mar. 2019-present)
- International Society of Electrochemistry (Jan. 2019-present)
- The Electrochemical Society (Jan. 2019-present)
- American Chemical Society (May 2018-present)

## Other Professional Activities

- Mentor, ACS SEED project, summer 2023
- Session chair, Rare Earth and Lithium Session II, 2023 MRS Spring Meeting and Exhibit, 2023.
- Member, Board of Directors for the Society for Electroanalytical Chemistry, 2023-2028
- Organizer of "Electrochemistry of Bubbles" Symposium at ACS Spring National Meeting, 2023.
- Organizer and founder of "Advances in Gas Sensing" Symposium at ACS Spring National Meeting, 2023.
- Secretary, The Michigan Chapter of the North American Catalysis Society, 2022
- Session Presider, Advances in Electrochemistry, ACS Fall 2022 Meeting & Exposition, Chicago
- Session Presider, Advances in Electrochemistry, ACS Spring 2021 Virtual Meeting & Exposition
- Faculty Advisor, The Electrochemical Society Detroit Student Chapter, 2020-now
- Session Chair, the ANACHEM/SAS Symposium 2019, Livonia, MI, 2019
- Member-at-Large, The Detroit Section of the Electrochemical Society, 2019-2021
- Session Chair, the ANACHEM/SAS Symposium, Livonia, MI, 2018, 2021
- Scientific consultant, **Revalerio Corporation**, Tacoma, WA, 2015.
- Founder and presenter, **Bubble T SciShow**

## Current Group Members

### Postdocs

1. Dr. Rajendra Maity (2022-present)
2. Dr. Atanu Hazra (2022-present)
3. Dr. Nibedita Behera (2022-present)
4. Dr. Chanaka Navarathna (2023-present)
5. Dr. Diptangshu Datta Mal (2023-present)
6. Dr. Sulekha (2023-present)

### Graduate Students

Ms. Sachini Dilrukshi Rodrigo Nambukara Wasam Payagala Welivitage Don (2018-present)

**Organic Chemistry Top Graduate Students Award 2023**

**Summer Dissertation Award 2023**

**David F. Boltz Award in Analytical Chemistry 2023**

**Graduate Student Professional Travel Award 2019, 2022**  
**Thomas C. Rumble University Graduate Fellowships 2021**

Ms. Daohua (Trista) Liu (2019-present)  
**Thomas C. Rumble University Graduate Fellowships 2023-2024**  
**Graduate Student Professional Travel Award 2022**

Mr. Blake Stringer (2022-present)

Mr. Ransford Appianin Boateng (2022-present)  
**Departmental Citation for Excellence in Teaching 2022-2023**

Ms. Sumudu Nimasha (2022-present)  
**Departmental Citation for Excellence in Teaching 2022-2023**

Ms. Sethma Dinushi Wijesinghe (2022-present)

Ms. Udeshika Kangane Arachchige (2023-present)

Ms. Janya Lumbini (2023-present)

Undergraduate and High School Students

Ms. Christa Kovaci (2023-present)

## Alumni

Former Postdocs

1. Dr. Qianjin Chen (2017)  
**Current position:** Professor, Donghua University
2. Dr. Xu Zhao (2018-2019)  
**Current position:** Associate Professor, Huazhong University of Science & Technology
3. Dr. Jyoti P. Mahajan (2020-2022)  
**Current position:** Postdoc, The University of North Carolina at Chapel Hill
4. Dr. Bingwen Wang (2022)  
**Current position:** Polymer Scientist III, BASF (Southfield, MI)
5. Dr. Xin Geng (2019-2022)  
**Current position:** Postdoc, Max Planck Institutes
6. Dr. Yi Peng (2021-2022)  
**Current position:** Princeton NuEnergy

Former Graduate Students

1. MS Yanick Wanzi; M.A. May 2021  
**Current position:** Good manufacturing practices (GMP) operator 1, Aldevron, L.L.C., (Fargo, North Dakota)
2. Dr. Chathurange Chinthana Hewa Rahinduwage; Ph.D. Dec. 2021  
**Dissertation:** "ELECTROCHEMICAL GELATION OF METAL CHALCOGENIDE QUANTUM DOTS".  
**Significant awards and honors:**  
 Departmental Citation for Excellence in Teaching 2018-2019  
 Summer Dissertation Award 2021  
 Thomas C. Rumble University Graduate Fellowships 2021  
 David F. Boltz Award in Analytical Chemistry 2021  
**Current position:** Senior Scientist, Boehringer Ingelheim
3. Dr. Ruchiranga Ranaweera; Ph.D. June 2022  
**Dissertation:** "ELECTROCHEMISTRY OF BUBBLES: DEVELOPING NEW SENSORS, PROMOTING GAS EVOLUTION REACTIONS, AND EXTRACTION OF RARE EARTH

## ELEMENTS”

**Significant awards and honors:**

Graduate Student Professional Travel Award 2019-2020  
Competitive GRA Award from the Graduate School 2020-2021  
Thomas C. Rumble University Graduate Fellowship 2020-2021  
David F. Boltz Award in Analytical Chemistry 2020-2021  
Departmental Citation for Excellence in Teaching 2019-2020

**Current position:** Intel (Oregon)

4. Dr. Henadeera Appuhamilage Dona Disni Gunasekera; Ph.D. March 2023  
Dissertation: “ALTERNATING CURRENT ELECTROLYSIS FOR AMINE FUNCTIONALIZATION AND HYDROGEN ISOTOPE EXCHANGE”

**Significant awards and honors:**

Thomas C. Rumble University Graduate Fellowships 2019  
Departmental Citation for Excellence in Teaching 2018-2019  
David F. Boltz Memorial Award in Analytical Chemistry 2022  
Graduate Student Professional Travel Award, 2022

**Current position:** Postdoc, Texas A&M University

Visiting Students and Scholars

1. Mr. Yue Cao (2018-2019), Shandong University of Technology
2. Dr. Shizhong An (2019-2020), Associate Professor, Henan University of Science and Technology

Research associates

Ms. Udeshika Weerathna (2022), Analytical Chemist, Piramal Pharma Solutions (Riverview, MI)

Undergraduate and High School Students

Ms. Carina Ghafari (2018 summer); Ms. Kelly Shaye Patero (2017-2020); Mr. Srihari Ganesh (2018 summer); Ms. Sahar Almatrahi (2020-2022); Ms. Sarah Alhader(2020-2022); Aneesa Chowdhury (2022-2023); Travis Lenhausen (2022 summer), Siham Azom (2023 summer), Grace Sun (2023 summer), Arriea Bonds (2023 summer, ACS SEED Project)