

TEACHING EXPERIENCE

Teaching Assistant | Virginia Commonwealth University (VCU), Richmond, VA | Spring 2023 – Present

- Teaching experiment of Inorganic Chemistry (CHEM 406) tutorials for undergraduate students.
- Teaching experiment of CHEM 101 tutorials for undergraduate students.

Teaching Assistant | Mansoura University, Egypt | Sep 2015 – Sep 2021

- Teaching experiments of Kinetic Chemistry (CHEM 401) tutorials at Mansoura University, Egypt.
- Teaching experiments of Surface Chemistry (CHEM 306) tutorials for undergraduate students.
- Teaching Electrochemistry experiments (CHEM 312) tutorials for undergraduate students.
- Teaching experiments in dental Chemistry tutorials for undergraduate students.

PUBLICATIONS

1. Mahmoud M. Kaid, Lineth Perez, Shiraj Pokhrel, Hong Zhao, Shiyuan Zhou, Gui-Liang Xu, Hani M. El-Kaderi, *J. Mater. Chem. A*, 2025, 13, 38421–38435.
2. Shiraj Pokhrel, Mahmoud M. Kaid, Abhinav Palicherla, Hani M. El-Kaderi, *ACS Appl. Nano Mater.* 2025, 8, 43, 20941–20951.
3. Mohammad K. Shehab, Mahmoud M. Kaid, Shiraj Pokhrel, Omar K. Farha, Hani M. El-Kaderi, *ACS Appl. Energy Mater.*, 2025, 8, 17, 12651–12660.
4. Mahmoud M. Kaid, Ella Kaplan, Chamari Weththasingha, Ashish Nag, Nazgol Norouzi, Hani M. El-Kaderi, Katharine Moore Tibbetts, *ACS Appl. Energy Mater.*, 2025, 8, 1, 227–237.
5. Rasha Diab, Ganjaboy Boltaev, Mahmoud M. Kaid, Ahmad Fawad, Hani M El-Kaderi, Mohammad H Al-Sayah, Ali S Alnaser, Oussama M El-Kadri, *Sci Rep*, 2025, 15, 3682.
6. Mohammad G. Rabbani, Riley K. Sasse Swayamprabha Behera, Puru Jena, Jian Liu, Praveen K. Thallapally, Timur Islamoglu, Mohammad K. Shehab, Mahmoud M. Kaid, Omar K. Farha, Hani M. El-Kaderi, *Langmuir*, 2024, 40, 8024–8034.
7. Mahmoud M. Kaid, Mohammad K. Shehab, Hong Fang, Puru Jena, and Hani M. El-Kaderi, *ACS Appl. Mater. Interfaces*, 2024, 16, 2283–2295.
8. Jianping Chen, Md Robayet Ahasan, Jin-Su Oh, Jake A. Tan, Stephen Hennessey, Mahmoud M. Kaid, Hani M. El-Kaderi, Lin Zhou, Ka Un Lao, Ruigang Wang and Wei-Ning Wang, *J. Mater. Chem. A*, 2024, 12, 4601–4609.
9. Amr Awad Ibrahim, Mahmoud M. Kaid, Sara I. Ismail, Wafaa S. Abo El-Yazeed, Awad I. Ahmed, *Journal of Molecular Liquids*, 2023 (390), 123157.
10. Soliman Gamal, Doaa Kospa, Mahmoud M. Kaid, S. A. El-Hakam, Awad. I. Ahmed, Amr Awad Ibrahim, *J. Environ. Chem. Eng.*, 2023, 11(2), 109359.
11. Amr A. Ibrahim, Mahmoud M. Kaid, Shaimaa L. Ali, Salem E. Samra, S.A. El-Hakam, Awad I. Ahmed, *Inorganic Chemistry Communications*, 2023, (153), 110748.
12. Mahmoud M. Kaid, A. S. Khedr, Awad I. Ahmed, *ACS Omega*, 2022, 7 (20), 17223–17233.
13. Ahmed Alzharani, Mohammad K. Shehab, Dylan D. Rodene, Junaid U. Ahmed, Ayyob M. Bakry, Mahmoud M. Kaid, and Hani M. El-Kaderi, *Energy & Fuels*, 2022 36 (9), 4967–4977.
14. Mahmoud M. Kaid, Ossama Elbanna, S. A. El-Hakam, Hani M. El-Kaderi, Amr A. Ibrahim, *Journal of Photochemistry & Photobiology, A: Chemistry*, 2022 (430), 114001.
15. Mahmoud M. Kaid, Ahmed Gebreil, Soheir A. El-Hakam, Awad. I. Ahmed, Amr Awad Ibrahim, *RSC adv.*, 2020, 10, 15586.

CONFERENCE

1. Mahmoud M. Kaid, Hani M. El-Kaderi, 3D printing of architected sulfur cathodes with dual-site atomic catalysts for accelerated polysulfide kinetics and Li-ion transport in high areal-loading lithium–sulfur batteries, *Paper ID: 4444220, ACS Spring 2026, Atlanta, GA, USA*, March 22-26, 2026.
2. Mahmoud M. Kaid, Hani M. El-Kaderi, Unlocking the power of lithium-sulfur batteries with advanced electrocatalytic cathodes, *Paper ID: 4316875, ACS Fall 2025, Washington, DC, CA., USA*, August 17-21, 2025.
3. Mahmoud M. Kaid, Hani M. El-Kaderi, Advanced electrocatalytic cathodes for developing high-power Li-S batteries, *Paper ID: 4187992, ACS 2025, San Diego, CA., USA*, March 23-27, 2025.
4. Mahmoud M. Kaid, Hani M. El-Kaderi, Additive Manufacturing of Advanced Electrodes for Developing High-Energy-Density Batteries, *CCAM's Annual Industry Day Event, USA*, November 12, 2024.
5. Mahmoud M. Kaid, Hani M. El-Kaderi, Nanostructured materials for advanced rechargeable batteries, *ACS 2024 Central Regional Meeting, Pittsburgh, USA*, November 6-10, 2024.
6. Mahmoud M. Kaid, Hani M. El-Kaderi, Additive Manufacturing of Single Atom Electrocatalytic Cathodes for Developing High-power Li-S Batteries, *Department of Chemistry, VCU, USA*, August 26, 2024.
7. Hani M. El-Kaderi, Mahmoud M. Kaid, Porous Materials Design and Synthesis for Clean Energy Applications, *The American University in Cairo, Egypt*, Jun 9th, 2024.
8. Hani M. El-Kaderi, Mahmoud M. Kaid, Advanced Nanostructured Cathodes for High Energy Density Lithium-Sulfur Batteries, *U.S.–Egypt Science and Technology Joint Fund Symposium, Ain Shams University, Cairo, Egypt*, June 5-6th, 2024.
9. Mahmoud M. Kaid, Hani M. El-Kaderi, Powering the Future: How 3D Printing is Revolutionizing Batteries, *3 MT competition, VCU, USA*, September 24th, 2024.
10. Mahmoud M. Kaid, Hani M. El-Kaderi, Advanced Nanostructured Sulfur Cathodes for High Energy Density and Long-Life Lithium-Sulfur Batteries, *27th Annual Research Symposium, VCU, USA*, April 24, 2024.
11. Mahmoud M. Kaid, Hani M. El-Kaderi, Advanced nanostructured cathodes for high energy density and long-life lithium-sulfur batteries, *ACS 2023 Southeastern Regional Meeting, Durham, USA*, October 25-28, 2023.
12. Hani El-Kaderi, Mahmoud M. Kaid, Advanced Materials Design for High Energy Density Rechargeable Batteries, *University of South Florida, USA*, 10/12/2023 (Invited seminar, Chemistry Department).
13. Mahmoud M. Kaid, Hani M. El-Kaderi, Advanced Electrocatalytic Cathodes for Rechargeable Lithium-Sulfur Batteries, *VCU, USA*, Nov 14, 2023.
14. Mahmoud M. Kaid, Selective Reduction of Multivariate Metal-Organic Frameworks for Advanced Electrocatalytic Cathodes in High Areal Capacity and Long-Life Lithium-Sulfur Batteries, *Poster, Department of Chemistry, VCU, USA*, August 21, 2023.

WORKSHOP AND TRAINING

1. ACS Publication Summit, *International Nanotechnology Exhibition, Japan, Hybrid*, Feb. 02, 2024.
2. Research X-ray Radiation Safety Training, *VCU, USA*, 2022-2025.
3. NMR Training, *VCU, USA*, 2021-2025.
4. Hazardous Waste Management in Laboratories, *VCU, USA*, 2021-2025.
5. Fundamentals of Laboratory Safety, *VCU, USA*, 2021-2025.
6. Quality Standards in the Education Process, *Faculty and Leadership Development Project (FLDP)*, 2018.
7. Use of technology in teaching, *Faculty and Leadership Development Project (FLDP)*, 2018.
8. How to write a scientific paper, *Evaluation and Quality Assurance Unit, Egypt*, 2017.
9. Strategic Planning, *Evaluation and Quality Assurance Unit, Egypt*, 2017.

10. Scientific Research and Methods of Universities Ranking, Faculty and Leadership Development Project, 2017.
11. Scientific Research Ethics, Faculty and Leadership Development Project (FLDP), 2016.
12. 12th International Conference on Chemistry and its Role in Development, Mansoura-Sharm El-Sheikh, Egypt, 2015
13. Noble Egypt Conference, Misr University for science and technology, Egypt, 2015.
14. ICDL license, Mansoura University Development Center, Egypt, 2013.
15. Training courses in small industries, Egypt, 2013.
16. Korea-Arab youth exchange program, South Korea, June 2013.

HONORS AND FELLOWSHIPS

1. ACS Graduate Student Success Grant, USA, 2025-2026
2. Gerald and Susan Bass Scholarship in Chemistry, VCU, USA, 2025.
3. Albert T. Sneden III Scholars Award, VCU, USA, 2024.
4. U.S.-Egypt Joint mission, VCU, USA, Fall 2021-2022.
5. Ideal Student, Mansoura University, Egypt, 2012, 2013, and 2014.
6. Korea-Arab youth exchange program, South Korea, June 2013.

Professional Service & Outreach

1. ACS Virginia Local Section, Membership Engagement Coordinator, VA, USA, Dec 2024 – Present.
2. International Student and Scholar Advisory Board (ISSAB), VCU, USA, Spring 2023 – Present.
3. ACS Virginia Younger Chemists Committee, VA, USA, Jan 2023 – Present.
4. Mentoring undergraduate researchers, Fall 2019 – Present.

Technical Skills

- Electrochemical testing: cyclic voltammetry (CV), electrochemical impedance spectroscopy (EIS), galvanostatic charge/discharge (GCD), and assembly and testing of Li-S, sodium-ion, and Na-S batteries.
- Materials characterization: SEM, TEM, XRD, XPS, X-ray computed tomography (X-CT), and surface area analysis.
- Thin-film deposition: atomic layer deposition (ALD) for conformal catalytic and functional coatings.
- Additive manufacturing: 3D printing of battery electrodes; experience with motion control systems and printer integration.
- Modeling & data analysis software: Materials Studio, CrystalMaker, Origin, SolidWorks, and instrument control software.
- Laboratory practices: chemical safety, glovebox operation, air- and moisture-sensitive materials handling, and hazardous waste management.
- Languages: Arabic (native); English (bilingual oral and written fluency).

REFERENCES

- Prof. Hani M. El-Kaderi, College of Humanities and Science, Virginia Commonwealth University, USA. helkaderi@vcu.edu
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