

Mohamed H. Hassan

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Professional appointments

Assistant Professor of Chemistry , Department of Natural Sciences Texas A&M University-San Antonio	09/2025-Present
Chemistry Program Coordinator , Department of Natural Sciences Texas A&M University-San Antonio	01/2026-Present
University of Pennsylvania , Department of Materials Science & Engineering Postdoctoral Research Fellow	2023-2025

Education

Ph.D., Inorganic Chemistry , Clarkson University, Potsdam, NY.	2023
M.Sc., Inorganic Chemistry , Alexandria University, Egypt.	2012
B.Sc., Chemistry & Biochemistry , Alexandria University, Egypt.	2006

Awards and Honors

• Marquis Who's Who in America "Honored Listee"	12/2024
• Outstanding Graduate Student Award (CU)	04/2023
• Clarkson Technology Showcase (3 rd Place)	10/2022
• Sustainable Nanotechnology Organization student award	09/2022
• CU President's innovation Challenge (Grand prize)	04/2022
• Phalanx Commendable Leadership Award (Inducted member)	04/2022
• Clarkson Technology Showcase Competition	11/2021
• ECS Outstanding Student Chapter award	10/2021
• IEEE ICDH 2021 Award	09/2021
• The Electrochemical Society ECS travel grant award	08/2021
• 2021 EAS Graduate Student Research Award	06/2021
• ACS Division of Environmental Chemistry Certificate of Merit	04/2021
• CU President's innovation Challenge (First place, Prototype category)	04/2021
• CU President's innovation Challenge (First place, Showcase category)	04/2020
• Clarkson Ignite fellowship	03/2019
• Teaching Assistant Award (Zewail city of science & technology)	03/2015

Publications ([Google Scholar](#))

26. William R Fullerton, Haoruo Liu, David N Agyeman-Budu, Jintao Fu, **Mohamed H Hassan**, Mark C Staub, Eric Detsi, Johanna Nelson Weker, Christopher Y Li. A Comb-Chain Cross-Linker-Based Network Solid Polymer Electrolyte for All-Solid-State Sodium-Metal Batteries. *ACS Appl. Energy Mater.* **2025**, 8, 18, 13959–13969

25. Mohamed H. Hassan, Jintao Fu, Jiabin Liu, Eric Detsi. Mitigating the P2–O2 phase transition complications in P2-Na_x[Ni_{1/3}Mn_{2/3}]O₂ Na-ion battery cathodes: To dope or not to dope, that is the question. *Materials Horizons* **2025**, Advance Article.

24. Ahmed S. Helal, Miryana Hémadi, John S. Lomas, Souad Ammar, Ali Abdelhafiz, Said M. El-Sheikh, Sheta M. Sheta, Mitchell Galanek, **Mohamed H. Hassan**, Jeng-Kuei Chang, Ju Li. Uranium removal from environmental water and nuclear waste: Nanomaterial solutions and their environmental sustainability. *Chemical Engineering Journal* **2025**, 507, 160298.

23. Jintao Fu, **Mohamed H. Hassan**, Jiabin Liu, Hyeonjun Koh, Alexander K. Ng, Chiara Bruzzi, John S. Corsi, Eric Detsi. Environmentally responsible synthesis of high-performance P2-Na_{2/3}[Ni_{1/3}Mn_{2/3}]O₂ sodium-ion battery cathodes. *J. Mater. Chem. A* **2024**, 12, 26857-26865.

22. Mohamed H. Hassan, Reem Khan, Daniel Andreescu, Shreetu Shrestha, Mircea Cotlet, Silvana Andreescu. Atomically Precise Hexanuclear Ce(IV) Clusters as Functional Fluorescent Nanosensors for Rapid One-Step Detection of PFAS. *Adv. Funct. Mater.* **2024**, 2403364.

21. Hyeonjun Koh, **Mohamed H. Hassan**, Stella Lin, Lin Wang, Eric A. Stach, Eric Detsi. Liquid Na-K alloy is not viable anode material for High-Performance Na-Ion batteries. *Chemical Engineering Journal* **2024**, 490, 151578.

20. Ali Othman, Akshay Gowda, Daniel Andreescu, **Mohamed H. Hassan**, S. V. Babu, Jihoon Seo, Silvana Andreescu. Two decades of ceria nanoparticles research: structure, properties and emerging applications. *Materials Horizons* **2024**, 11, 3213-3266.
19. **Mohamed H. Hassan**, Silvana Andreescu. Tuning the Fluorometric Sensing of Phosphate on UiO-66-NH₂(Zr, Ce, Hf) Metal Nodes. *Inorganic Chemistry* **2023**, 62, 20970–20979. **(Front cover)**
18. **Mohamed H. Hassan**, Rana R. Haikal, Mohamed H. Alkordi. Synergistic compounding of carbon nanotubes and metal-organic frameworks for oxygen-evolving electrocatalysis. *Materials Advances* **2022**, 3, 7212-7218. **(Front cover)**
17. Reem Khan, Daniel Andreescu, **Mohamed H. Hassan**, Jingyun Ye, Silvana Andreescu. Nanoelectrochemistry Reveals Selective Interactions of Perfluoroalkyl Substances (PFASs) with Silver Nanoparticles. *Angew. Chem. Int. Ed.* **2022**, e202209164. **(Front cover)**
16. **Mohamed H. Hassan**, Reem Khan, Silvana Andreescu. Advances in Electrochemical Detection Methods for Measuring Contaminants of Emerging Concerns. *Electrochem Sci. Adv.* **2021**, 2, e2100184.
15. **Mohamed H. Hassan**, Robert Stanton, Jeremy Secora, Dhara Trivedi, Silvana Andreescu. Ultrafast Removal of Phosphate from Eutrophic Waters Using a Cerium-Based Metal–Organic Framework. *ACS Appl. Mater. Interfaces* **2020**, 12, 52788–52796.
14. Gehan Ahmed, Safa Khalil W. ElHotaby, Lamyaa Abbas, Abdel Razik Farrag, Wafaa Abdel Aal, Hadeer Sherif, Engy Abdel-Rahman, Saber Saber, Mahmoud Hassan, **Mohamed H. Hassan**, Maha Balgoun, SafaaQusti, Mamdooh Kotb, Sameh S. Ali. ATR-IR and EPR spectroscopy for following the membrane restoration of isolated cortical synaptosomes in aluminium-induced Alzheimer's disease – Like rat model. *Chemistry and Physics of Lipids*. **2020**, 231, 104931.
13. **Mohamed H. Hassan**, Daniel Andreescu, Silvana Andreescu. Cerium Oxide Nanoparticles Stabilized within Metal–Organic Frameworks for the Degradation of Nerve Agents. *ACS Appl. Nano Mater.* **2020**, 3, 3288-3294.
12. Rana R. Haikal, **Mohamed H. Hassan**, Mohamed H. Alkordi. Microporous Solids en Route to Heterogeneous Electrocatalysis: The Oxygen Reduction Reaction. *Energy Technology* **2019**, 1900964.
11. Gehan AR Ahmed, Safaa KH Khalil, Lamyaa Abbas, Hadeer HA Sherif, Engy A Abdel-Rahman, Saber H Saber, Mahmoud Hassan, **Mohamed H Hassan**, Sameh S Ali. ATR-IR and EPR spectroscopy for detecting the alterations in cortical synaptosomes induced by aluminum stress. *Spectrochim. Acta A*. **2020**, 228, 117535.
10. **Mohamed H. Hassan**, Mohamed H. Alkordi, and Abdou Hassanien. Probing the conductivity of metal-organic framework-graphene nanocomposite. *Materials Letters* **2019**, 246, 13-16.
9. **Mohamed H. Hassan**, Rana R. Haikal, Tawheed Hashem, Julia Rinck, Franz Koeniger, Peter Thissen, Stefan Heißler, Christof Wöll, and Mohamed H. Alkordi. Electrically conductive, monolithic metal-organic framework-graphene (MOF@G) composite coatings. *ACS Appl. Mater. Interfaces* **2019**, 11, 6442-6447.
8. **Mohamed H. Hassan**, A. B. Soliman, W. A. Elmehelemey, A. A. Abugable, S. G. Karakalos, M. Elbahri, A. Hassanien and M. H. Alkordi. A Ni-loaded, metal–organic framework–graphene composite as a precursor for in situ electrochemical deposition of a highly active and durable water oxidation nanocatalyst. *Chemical Communications*, **2019**, 55, 31-34. **(Inside front cover)**
7. **Mohamed H. Hassan**, Omar El-Basha, Rana R. Haikal, Ahmed H. Ibrahim, and Mohamed H. Alkordi. Metallic Nanoparticles Assimilation within Metal–Organic Framework Monolith. *ACS Appl. Mater. Interfaces* **2018**, 10, 32942-32945.
6. Shruti Suriyakumar, A. Manuel Stephan, N. Angulakshmi, **Mohamed H. Hassan**, and Mohamed H. Alkordi. Metal-Organic Framework@SiO₂ as permselective separator for lithium sulfur batteries. *J. Mater. Chem. A* **2018**, 6, 14623-14632. **(Back cover)**
5. Worood A. El-Mehalmey, Ahmed H. Ibrahim, Arwa A. Abugable, **Mohamed H. Hassan**, Rana R. Haikal, Stavros G. Karakalos, Omar Zaki and Mohamed H. Alkordi. Metal-Organic framework@silica as stationary phase sorbent for rapid and cost-effective removal of hexavalent chromium. *J. Mater. Chem. A* **2018**, 6, 2742-2751.
4. Ahmed B. Soliman, **Mohamed H. Hassan**, Tran Ngoc Huan, Arwa A. Abugable, Worood A. Elmehelemey, Stavros G. Karakalos, Manuel Tsotsalas, Marita Heinle, Mady Elbahri, Marc Fontecave, and Mohamed H. Alkordi. Pt Immobilization within a Tailored Porous-Organic Polymer–Graphene Composite: Opportunities in the Hydrogen Evolving Reaction. *ACS Catalysis* **2017**, 7, 7847-7854.
3. Ahmed B. Soliman, **Mohamed H. Hassan**, Arwa A. Abougable, Stavros G. Karakalos, and Mohamed H. Alkordi. Post-synthetic immobilization of Ni ions in porous-organic polymer-graphene composite for the non-noble metal electrocatalytic water oxidation. *ChemCatChem* **2017**, 9, 2946-2951. **(Front cover)**
2. Ahmed B. Soliman, Rana R. Haikal, Arwa A. Abugable, **Mohamed H. Hassan**, Stavros G. Karakalos, Perry J Pellechia, Hamdy H. Hassan, Magdi Habeeb Yacoub, and Mohamed H. Alkordi. Tailoring the oxygen reduction activity of hemoglobin through immobilization within microporous organic polymer-graphene composite. *ACS Appl. Mater. Interfaces* **2017**, 9, 27918-27926. **(Front cover)**
1. Nemat Z Yassin; Siham M El-shenawy; Rehab F Abdel-rahman; Mostafa Yakoot; **Mohamed Hassan**; Sherine Helmy. Effect of a topical copper indomethacin gel on inflammatory parameters in a rat model of osteoarthritis. *Drug Design, Development and Therapy* **2015**, 9, 1491-1498.

Patents

Mohamed H. Hassan and Emanuela Silvana Andreescu. Compositions and Methods for Producing Electrically Conductive Coordination Polymers and Uses Thereof, US Patent application. No US20240018310A1 **2024**

Teaching Experience

Texas A&M University-San Antonio

- **CHEM 1311**, General Chemistry 1 Fall 2025
- **CHEM 1111**, General Chemistry Lab. Fall 2025, Spring 2026
- **CHEM 4390**, Inorganic Chemistry Spring 2026
- **CHEM 4190**, Inorganic Chemistry Lab. Spring 2026

Clarkson University

- Applications of Synchrotron and electron techniques (TA, course coordinator) Fall 2022
- **CM 221**, Molecular Spectroscopy (Co-instructor) Fall 2021
- **CM 406-506**, Biomedical Analysis and Instrumentation (Co-instructor) Spring 2021
- CU Horizon spring program for high school students (Instructor) Summer 2021
- CU Horizon summer program for high school students (Instructor) Summer 2022
- CU Project Challenge program for high school students (Instructor) Spring 2021

Zewail City of Science and Technology (TA & RA)

- **CHEM 101, 102, 202**, General Chemistry Course & Lab. 2013-2018
- **MATSCI 303, 480, 301**, Materials Science and Engineering 2015-2018

Selected Talks & Presentations

- ECS 245th meeting 06/2024
- NYS Center of Excellence's first annual meeting (Poster) 03/2023
- ACS Fall 2022 meeting 08/2022
- ACS Fall 2021 meeting 08/2021
- ACS Spring 2021 meeting 04/2021
- Pittcon Conference and Expo 03/2021
- 11th Annual ACS NNY Local Section symposium (Judge in the poster session) 04/2021
- Sustainable Nanotechnology Organization's 9th Conference 11/2020
- ACS Spring 2020 National Meeting-Environmental Chemistry 03/2020
- CAMP Annual Technical Meeting (Poster) 05/2019
- 3rd annual Research and Projects Showcase (Clarkson University, Judge) 04/2019
- BioVision Alexandria Conference (Poster) 04/2010
- TWAS-ARO 5th annual meeting 12/2009

Leadership & Service

- Chemistry Program Coordinator, TAMUSA 01/2026-Present
- Distinguished Student Award Committee Chair, TAMUSA 09/2025-Present
- Students Travel Award Committee Chair, TAMUSA 09/2025-Present
- ECS Students' Chapter President at Clarkson University 2020-2023

Professional Activities

- NSF Innovation Corps Program (I-Corps), Entrepreneurial Lead 07-09/2022
- Organized seminar series at the Shipley Distinguished Lectureship 2021 & 2022
- Organized the common practice in PFAS detection and removal workshop at CU 06-2022
- Organized Upstate New York's high school science communication workshops 2021 & 2022

Internships

Massachusetts Institute of Technology, Dept. of Chemistry 10-12/2019

Visiting graduate student

Rensselaer Polytechnic Institute, MSE 05-08/2014

Visiting research assistant

Albany College of Pharmacy and Health Science 02-05/2014

Visiting research assistant

International Pharmaceutical Student's Federation Internship 02/2014