

Md Nurnobi Islam

Graduate Assistant (GA)

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EDUCATION

Graduate (Ph.D.) Student (2nd year) | Ongoing

University of Cincinnati, Department of Chemistry, Ohio State, US.

M.S. in Chemistry | 2023

Shahjalal University of Science and Technology (SUST), Sylhet-3114, Bangladesh

Result: CGPA: 3.92/4.00 (Total credit 36.00), Position: 2nd

M.S. Thesis title: "**Fabrication of thin film electrodes for electrochemical applications.**"

The grade obtained in thesis: **4.00/4.00**

B.Sc. in Chemistry | 2021

Shahjalal University of Science and Technology (SUST), Sylhet-3114, Bangladesh

Result: CGPA: 3.71/4.00 (Total credit 146.50), Position : 2nd

B.Sc. Thesis title: "**Ultrasound-assisted synthesis of silica-coated TiO₂ nanoparticles and its application.**" The grade obtained in thesis: **4.00/4.00**

RESEARCH INTEREST

Electrocatalysis, PFAS Degradation, Electrocatalytic Hydrogen evolution reaction (HER), Oxygen reduction (ORR) and evolution reaction (OER), CO₂/CO reduction, Nitrate/Nitrite electroreduction (NRR), Sensor development, Fuel cell catalysis, Arsenic mitigation, Catalytic dye degradation, Electro-kinetics of various redox reactions, Drug analysis.

PUBLICATIONS

Peer-Reviewed Journals

1. Humayra Begum, **Md. Nurnobi Islam**, Sami Ben Aoun, Jamil A. Safwan, Syed Shaheen Shah, Md Abdul Aziz, Mohammad A Hasnat*, Electrocatalytic reduction of nitrate ions in neutral medium at coinage metal-modified platinum electrodes, *Environmental Science and Pollution Research* 30,34904–34914 (2023), <https://link.springer.com/article/10.1007/s11356-022-24372-z>.
2. Tahsin Ahmed Rupok, Sunandan Dey, Rashni Agarwala, **Md. Nurnobi Islam**, Bayezid Bostami, Knowledge, attitude, practice, and fear level of Bangladeshi students toward Covid-19 after a year of the pandemic situation: A web-based cross-sectional study, *PLoS One*, 27, (2023), <https://doi.org/10.1371/journal.pone.0282282>.
3. **Md. Nurnobi Islam**, Abrar Y. Abir, Jahir Ahmed, M. Faisal, Jari S. Algethami, Farid A. Harraz, Mohammad A. Hasnat*, Electrocatalytic oxygen reduction reaction at FeS₂-CNT/GCE surface in alkaline medium. *Journal of Electroanalytical Chemistry*, 941, (2023), 117568, <https://doi.org/10.1016/j.jelechem.2023.117568>.
4. **Md. Nurnobi Islam**, Jahir Ahmed, Mohd Faisal, Jari S. Algethami, Kentaro Aoki, Yuki Nagao, Farid A. Harraz, Mohammad A. Hasnat*, Efficient Electrocatalytic Hydrogen Evolution Reaction on CuO Immobilized Stainless-Steel Electrode Prepared by the SILAR Method, *ChemistrySelect*, 8, 28 (2023), 202301077, <https://doi.org/10.1002/slct.202301077>.

5. Prottasha Kairy, **Md. Nurnobi Islam**, Mohebul Ahsan, Md A Rashed, Amjad E Alsafrani, Hadi M Marwani, Albandary Almahri, Mohammed M Rahman, Mohammad A Hasnat*, Electrocatalytic reduction of Cr (VI) on gold based electrodes in acidic medium: A systematic approach of chromium detection. *Electrochimica Acta*, 467, (2023), 142938. <https://doi.org/10.1016/j.electacta.2023.142938>.
6. **Md. Nurnobi Islam**, Mohebul Ahsan, Kentaro Aoki, Yuki Nagao, Amjad E. Alsafrani, Hadi M Marwani, Albandary Almahri, Mohammed M. Rahman, Mohammad A Hasnat*, Development of CuNi immobilized platinum surface to minimize nitrite evolution during electrocatalytic nitrate reduction in neutral medium. *Journal of Environmental Chemical Engineering*, 111149, (2023), <https://doi.org/10.1016/j.jece.2023.111149>.
7. Mohammad Imran Hossain, Atiya Bukhari, Hamad Almujiabah, Mohammad Mahtab Alam, **Md. Nurnobi Islam**, Tahmid A. Chowdhury, Suravi Islam, Madhurima Joardar, Tarit Roychowdhury, Mohammad A. Hasnat*, Validation of the efficiency of arsenic mitigation strategies and an approach to develop an efficient adsorbent in rural environment of southwestern region, Bangladesh, *Journal of Environmental Management*, 348, 15 (2023), 119381 <https://doi.org/10.1016/j.jenvman.2023.119381>.
8. Jahir Ahmed, **Md Nurnobi Islam**, M Faisal, Jari S Algethami, Md Mahmudul Hasan, IA Siddiquey, Mohammad A Hasnat*, Farid A Harraz*, Electrocatalytic investigation of H₂O₂ reduction and sensing performance using sulfide modified Au/Pt electrode in alkaline medium. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 132926 (2024), <https://doi.org/10.1016/j.colsurfa.2023.132926>.
9. Jahir Ahmed, **Md. Nurnobi Islam**, M. Faisal, Jari S. Algethami, Mohammed M. Rahman, T. Maiyalagan, Mohammad A. Hasnat*, Farid A. Harraz*, Efficient oxidation of hydrazine over electrochemically activated glassy carbon electrode surface: Kinetics and sensing performance. *Diamond and Related Materials*, 111115 (2024), <https://doi.org/10.1016/j.diamond.2024.111115>.
10. **Md Nurnobi Islam**, Md Mosaraf Hossain, Shrikant S. Maktedar, Mostafizur Rahaman, Mohammad Atiqur Rahman, Mohammad A Hasnat, Ce-doped TiO₂ fabricated glassy carbon electrode for efficient hydrogen evolution reaction in acidic medium, *Chemistry-An Asian Journal*, e202301143 (2024), [doi: 10.1002/asia.202301143](https://doi.org/10.1002/asia.202301143).
11. Md. Fahamidul Islam, Mohebul Ahsan, **Md. Nurnobi Islam**, Mohammad Imran Hossain, Newaz Mohammed Bahadur, Md. Abdul Aziz, Jehan Y. Al-Humaidi, Mohammed M. Rahman, T. Maiyalagan, Mohammad A. Hasnat*, Recent Advancements in Ascribing Several Platinum Free Electro-Catalysts Pertinent to Hydrogen Evolution from Water Reduction, *Chemistry-An Asian Journal*, e202400220 (2024), <https://doi.org/10.1002/asia.202400220>.
12. Tahsin Ahmed Rupok, Shahnaz Parvin Sweety, Mst Mahfuza Rahman, Most Tasfia Rahman, Fahmida Zaman, Muhammad Radone Ahmed, Tanvirul Islam, **Md Nurnobi Islam**, Md Masud Rana, Abdur Rahman Riaz, Md Golam Sadik, Food Safety Profile of University Food Handlers in Bangladesh: A Multicenter Cross-Sectional Study, *Food and Humanity*, 3 (2024), 100386 <https://doi.org/10.1016/j.foohum.2024.100386>.
13. **Md.Nurnobi Islam**, Zannatul Mumtarin Moushumi, MdRakibul Islam, MohamadImran Hossain, MohammadAtiqur Rahman, Mostafizur Rahaman, Ali Aldalbahi, Md.Tamez Uddin, NayanRanjan Singha, Mohammad A. Hasnat*, Activation of stannic oxide by the incorporation of ruthenium oxide nanoparticles for efficient hydrogen evolution reaction, *Electrochimica Acta*, (2024), 145114, <https://doi.org/10.1016/j.electacta.2024.145114>.

14. Mostafizur Rahaman, Md. Fahamidul Islam, Zannatul Mumtarin Moushummy, Md. Mosaraf Hossain, **Md. Nurnobi Islam**, Mahmudul Hasan, Mohammad Atiqur Rahman, Nahida Akter Tanjila, Mohammad A. Hasnat, Electrokinetics of CO₂ reduction in imidazole medium using RuO₂.SnO₂-Immobilized glassy carbon electrode, *Molecules* (2025), 30(3), 575; <https://doi.org/10.3390/molecules30030575>.
15. Motasim B. Islam, **Md Nurnobi Islam**, Jahir Ahmed, Nayan Ranjan Singha, Mohammad Afsar Uddin, Lidia Martinez, Yves Huttel, M. Faisal, Jari S. Algethami, Farid A. Harraz, Mohammad A. Hasnat*, Pd-Au bimetallic thin film on polyaniline decorated graphite substrate for efficient hydrogen evolution reaction under acidic condition, *Ionics* (2025). <https://link.springer.com/article/10.1007/s11581-025-06831-y>.
16. **Md Nurnobi Islam**, Amir Fayaz, Mohammad Imran Hossain, Md Mosaraf Hossain, Nazmul Hosen, Nayan Ranjan Singha, Shrikant S Maktedar, Mehdi Akermi, Rym Hassani, Mohammad A Hasnat*, Imidazole-assisted water splitting: a novel approach to hydrogen evolution reaction over cerium doped titanium oxide composite, *International Journal of Hydrogen Energy* (2026), 227, 154519, <https://doi.org/10.1016/j.ijhydene.2026.154519>.

Conference papers

1. **Md. Nurnobi Islam**, Mohebul Ahsan, Mohammad A. Hasnat* (2023), Metal films immobilized on H⁺ conducting solid polymer electrolyte in a membrane reactor for attaining efficient nitrite removal, *1st International Conference on Nano-bio and Advanced Materials Engineering (NAME-2023)*, 6-8 January 2023 JUST, Jashore, Bangladesh.
2. **Md. Nurnobi Islam**, Iqbal Ahmed Siddiquey* (2022), Ultrasound-assisted approach towards the synthesis of surface-coated TiO₂ nanoparticles with enhanced photostability and UV shielding ability, *1st International Conference in Physical Sciences (ICPS 2022)*, 21-23 October 2022 SUST, Sylhet, Bangladesh.

Poster presentations

1. **Md Nurnobi Islam**, Soumalya Sinha, Jianbing “Jimmy” Jiang*, Degradation of Perfluorooctanoic Acid (PFOA) using an Electrochemical Flow Cell, *Ralph & Helen Oesper Symposium 2025*, October 3, 2025, Department of Chemistry, University of Cincinnati, USA.

Accomplished Research Projects:

1. “Arsenic contamination in different regions in Bangladesh: Exploration, sensor development, and removal technology”, Funded by **SUST Research Centre**, Project ID: (PS/2022/01/01, 2021-2022).
2. “Ultrasound-assisted approach towards the synthesis of surface-coated titanium dioxide nanoparticles with enhanced photostability and UV shielding ability”, Funded by **SUST Research Centre**, Project ID: (PS/2019/02/08, 2019-2020).
3. “Assessment of arsenic pollution in Bangladesh: Regional safety evaluation and advancements in composite materials for efficient arsenic detection and removal from drinking water”, Funded by **MOST Research Grant**, Project ID: (AS/2023/01/10), 2023-2024.
4. “Electrocatalytic reduction of carbon dioxide into nontoxic chemicals using metallic electrodes”, Funded by **MOE Research Grant**, Project ID: (PS/20211727), 2022-2023.

WEBINAR AND WORKSHOPS

1. Webinar on "Illuminating the Fundamentals & Applications of Spectro-Electrochemistry Technique" by Allen J. Bard Center for Electrochemistry, The University of Texas, Austin.
2. Webinar on "Breaking barriers in Science" organized by the Department of Chemistry, Kamla Nehru Mahavidyalaya, Nagpur, in collaboration with IUPAC.
3. Workshop on 'Laboratory Basics' for university 1st-year students, Department of Chemistry, Shahjalal University of Science and Technology.

PROFESSIONAL EXPERIENCES

Graduate Teaching Assistant (GTA) | Department of Chemistry, University of Cincinnati, Ohio State, US
(August 2024 - Present)

Key responsibilities:

- Guiding students with theoretical and practical chemistry at undergrad levels
- Helping students solve problems of GenChem Lab
- Grading the lab report
- Conducting Recitations & Office Hours

Research Assistant (RA) | Electrochemistry and Catalysis Research Laboratory, Department of Chemistry, SUST. (January 2021 – July 2024), <https://www.ecrlsust.com/>

Key responsibilities:

- Conducting research, summarizing findings
- Establishing Methodology
- Drafting proposals for the research projects
- Experiment design and visualization
- Laboratory analysis and preparing reports
- Writing scientific reports for Journals.
- Guiding undergraduate students

Visiting Researcher | Department of Chemistry, National Institute of Technology (NIT), Srinagar, India
(September 28- October 5, 2023)

Experience:

- Electrochemical oxygen reduction reaction (ORR) study for fuel cell applications
- Experiment design and analysis

Training on chemical Industries at TICI, Palash, Narshingdi

Training period: 1-month

Experiences:

- Quality control and quality assurance
- Industrial wastewater treatment
- Testing physical parameters of water
- safety management
- Calibration of UV-visible spectrophotometer and FTIR
- Operation of GC, GC-MS, HPLC, AAS, and ICP-OES

Home Schooling | Chemistry (January 2017- June 2023)

Key responsibilities:

- Guiding students with theoretical chemistry at O and A levels
- Helping students solve mathematical problems according to the curriculum
- Grading students after taking tests
- Mentoring students

TECHNICAL SKILLS

Software: Sigma plot, Origin, CH, Autolab, PINE, UV-line, Ava Raman, Office 365.

Programming Language: C, C++.

EXTRACURRICULAR ACTIVITIES

1. Assistant General Secretary, Chemistry Society, Department of Chemistry, SUST.
2. Assistant General Secretary, Jamalpur Association, SUST.
3. Volunteering at the Environmental and Social Development Organization (ESDO)
4. Volunteering at the Chemistry Olympiad organized by the Department of Chemistry, SUST
5. Acting: Performed on a stage drama in Chemistry Cultural Night 2017, SUST.

Award and Fellowship

1. H. Brian Halsall Award 2026, University of Cincinnati
2. Cassandra McGee Service Award 2025, University of Cincinnati
3. National Science and Technology (NST) Fellowship 2023
4. SUST merit Scholarship for excellent academic results in B.Sc. (4 years)
5. SUST Research Grant Fellowship
6. Board Scholarship at the JSC level

REFERENCES

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Dr. Mohammad Abul Hasnat (MS PI)

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