

DEPARTMENT OF BIOCHEMISTRY & MICROBIOLOGY • NORTH SOUTH UNIVERSITY

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MD ISTIAK HOSSAIN

EDUCATION

2015 — 2020: University of Toledo
Ph.D. in Synthetic Chemistry Toledo, Ohio, USA

2011 — 2012: University of Dhaka
M.S. in Inorganic Chemistry Dhaka, Bangladesh

2007 — 2011: University of Dhaka
B.S. in Chemistry Dhaka, Bangladesh

PROFESSIONAL EXPERIENCE

2024 — Present: North South University,
Assistant Professor Dhaka, Bangladesh

2021 — 2024: Tulane University
Research Scientist-I New Orleans, LA, USA

2015 — 2020: University of Toledo
Teaching assistant Toledo, Ohio, USA

2014 — 2015: Incepta Chemicals Limited
R&D officer Dhaka, Bangladesh

2013 — 2014: University of Dhaka
S.N. Bose Research Fellow Dhaka, Bangladesh

TEACHING & MENTORING EXPERIENCE

North South University

General Chemistry (CHE 101)

Bio-organic Chemistry (CHE 202)

Chemistry of Bio Molecules (CHE 203)

Tulane University

Mentored six undergraduate students, guiding them to successfully complete their individual research project funded by NSF REU program.

University of Toledo

- Taught general and organic chemistry laboratory courses.
- Taught organic chemistry I and II theory courses
- Trained basic NMR spectrometer operation to undergraduate and new graduate students

PUBLICATIONS

- AziziHariri P, **Hossain I**, Burni F, Raghavan SR, Lovko VJ, McLean TI, John VT. A Simple Method to Clear Harmful Algal Blooms: Sprayable Foams with Algaecides and Flocculants. *ACS ES&T Water*. 2025 Apr 16;5(5):2547-55.
- Simol HA, **Hossain I**, Debnath T, Bakshi PK, Jahan RA, Ruscher CH, Hussain A. Synthesis and Characterization of Vanadium Doped Hexagonal Rubidium Tungsten Bronze. *Dhaka University Journal of Science*. 2024 Mar 25;72(1):77-84.
- **Hossain, I**; Briana Mays; Sydney L Hanhart; John Hubble; Pedram Azizihariri; T.I.McLean; Richard Pierce; Vince Lovko; Vijay T John, An Effective Algaecide for the Targeted Destruction of *Karenia brevis*. *Harmful Algae*. 2024 Sep 1;138:102707.
- Barrett, B. N.; Tung, C.-H.; Huang, G.-R.; **Hossain, I.**; Do, C.-W.; John, V. T.; Chen, W.-R.; Zhang, D. Modulating Water Distribution and the Intracellular Assembly of Sequence-Defined Ionic Peptoid Block Copolymers by the Ionic Monomer Position. *Macromolecules* 2023, 56 (14), 5306-5313.
- Yu, T.; Omarova, M.; Zhang, M.; **Hossain, I.**; Chen, J.; Darvish, O.; John, V. T.; Zhang, D. Uncovering the Optimal Molecular Characteristics of Hydrophobe Containing Polypeptoids to Induce Liposome or Cell Membrane Fragmentation. *Biomacromolecules* 2023, 24 (3), 1511-1521
- **Hossain, I.**; Schmidt, J. A. R., Nickel(II) Catalyzed Hydroboration: A Route to Selective Reduction of Aldehydes and *N*-Allylimines. *Eur. J. Inorg. Chem.* 2020, 2020(19), 1877-1884
- **Hossain, I.**; Schmidt, J. A. R., Cationic Nickel(II)-Catalyzed Hydrosilylation of Alkenes: Role of P, N-Type Ligand Scaffold on Selectivity and Reactivity. *Organometallics* 2020, 39 (18), 3441-3451

CONFERENCE PRESENTATION (SELECTED)

- AziziHariri, P; **Hossain, I**; Raghavan, SR; John, VT. Target-Specific Delivery of Polyphenolic Compounds for Mitigating Harmful Algal Blooms, 2024 AIChE Annual Meeting, 2024, USA.
- AziziHariri, P; **Hossain, I**; Omarova, M; Zhang, Y; Yu, T; Zhang, D; He, J; Dash, S; John, V.T. Design of Amphiphilic Polypeptoid-Lipid Nanoparticles as Nanocarriers for Therapeutic Applications, ACS Spring 2024, New Orleans, USA.
- **Hossain, I.**; Schmidt, J. A. R. Nickel catalyzed hydroboration: A route to selective reduction of aldehydes and *N*-allylimines. Poster presentation at the Ohio Inorganic Weekend, Toledo, Ohio, USA, November 1-2, 2019

- **Hossain, I.;** Schmidt, J. A. R. Nickel catalyzed hydroboration: A route to selective reduction of aldehydes and *N*-allylimines. Poster presentation at the PINDU conference, Notre Dame, Indiana, December 1, 2018.
- **Hossain, I.;** Schmidt, J. A. R. Cationic nickel (II) allyl complex-catalyzed selective hydroboration of aldehydes and allylimines. **Invited speaker** at the ACS Regional Meeting–Glass City Chemistry Conference, Toledo, Ohio, USA, June 14-16, 2018
- **Hossain, I.;** Debnath, T.; Hussain, A. Vanadium Doped Hexagonal Tungsten Bronze, $Rb_xW_{1-y}V_yO_3$. Presented at the 1st National Conference of Bangladesh Crystallographic Association, Dhaka, Bangladesh, December 5, 2013.

AWARDS & FELLOWSHIPS

- Graduate Student Association Travel Grant, University of Toledo, Toledo, OH (2018)
- Graduate Assistantship, University of Toledo, Toledo, OH (2015 -2020)
- Bangladesh-Sweden Trust Fund Travel Grant to pursue Ph.D. at the University of Toledo (2015)
- S. N. Bose Research Fellowship, University of Dhaka, Bangladesh (2012-2013)