Dr. Arjun C. Bhowmick - Curriculum Vita

STEM 2246, University of Houston-Clear Lake, Houston, TX 70058
(281)-283-3741, bhowmick@uhcl.edu

Research Interest:

- **Organic Chemistry:** Synthesis, characterization, medicinal activity of organic molecules, organo-fluorine chemistry.
- **Inorganic/Organometallic Chemistry:** Synthesis, characterization, and investigation of catalytic activity of transition metal complexes. Frustrated Lewis Pair chemistry.
- **Polymer Chemistry:** Synthesis of water soluble and water insoluble polymers.
- **Computational Chemistry:** Density functional theory (DFT) to explore electronic structure of organic and transition metal complexes.

Job Experience:

- Lecturer, Department of Physical & Applied Science, University of Houston Clearlake, Houston, Texas, USA (2024-Present).
- Postdoctoral Research Associate, Department of Chemistry & Biochemistry, University of Arkansas, Fayetteville, Arkansas, USA.
- Senior Research & Development Chemist, Jacam catalyst, Sterling, Kansas, USA.
- Visiting Assistant Professor (Organic Chemistry), Department of Chemistry and Biochemistry, Kalamazoo College, Michigan, USA.
- Assistant Professor, Department of Chemistry, Mawlana Bhashani Science and Technology University, Tangail, Bangladesh.

Education:

- **PhD (2022):** Department of Chemistry, University of South Dakota. **Dissertation Title:** (Quinolin-8-yl) Tin Synthons in Transmetallation Reactions with Transition Metals Yield Multimetallic Organometallic Molecules and Clusters. (Advisor: Professor James D. Hoefelmeyer).

- **M.S. (2019):** Department of Chemistry, University of South Dakota.
  Thesis Title: Synthesis and Characterization of Perfluoroalkylated Imidazole Complexes. (Advisor: Professor Haoran Sun).

- **M.S. (2009):** Department of Chemistry, Jahangirnagar University, Bangladesh.
  Thesis Title: Synthesis, Structures and Reactivity of Some New Transition Metal Carbonyl Complexes Bearing Nitrogen, Sulfur, Bromine and Phosphorus Donor Ligands. (Advisor: Professor Shariff Enamul Kabir)

- **B.Sc. with Honors (2008):** Department of Chemistry, Jahangirnagar University, Bangladesh 2008.

Research Experience and Skills:

- Pure organic and organometallic synthesis, dealing with air sensitive materials (experience in Schlenk line/glove box techniques).
- Single crystal x-ray crystallography (Bruker D8-Apex-III, Apex-II, WinGX, SHELXL, Ortep, Mercury) and PXRD.
- NMR, GCMS, LCMS, UV-visible, fluorescence spectroscopy, FTIR, cyclic voltammetry.
- Computational methods: (DFT in gaussian, Gauss view, QTAIM, VMD, Multiwfn).
- Scientific writing.

Honors and Awards:

- Faculty professional development grant, Kalamazoo College, 2022.
- Excellence Teaching Assistantship Award, Dept. of Chemistry, University of South Dakota, 2019.
- Graduate Research and Creative Scholarship Grant, University of South Dakota, Spring 2021.
- Research grant (R&D) from the Ministry of Science and Technology Bangladesh (2014-2015).
- Fellow of the Ministry of Science Information and Communication Technology, The Government of the people's republic of Bangladesh (2011-2012).

Seminars:

- ACS Spring meeting "Bonding Through Chemistry" March 21, 2022.
- 16th International Asian Chemical Congress, "Chemistry for Humanity", 2015.
- Seminar on "Advances of Biological Chemistry in Bangladesh" 2014.
- Seminar on "Advances of Nano Chemistry in Bangladesh" 2014.
- International workshop on "Sustainable Management of Himalayan Rivers", Bangladesh, 2011.
- Bangladesh Chemical Society International Chemical Congress, "Chemistry for Friendly Environment", 2010.

Publications (* Indicates corresponding author).

1. **Arjun Chandra Bhowmick***, Shishir Ghosh, Shariff Enamul Kabir, Synthesis of Bimetallic (Fe-Re, Fe-Mn) and Triosmium Carbonyl Complexes Containing Bromine, Nitrogen, Sulfur and Phosphorus Donor Ligands, *American Journal of Chemistry,* 13(1): 26-31, **2023**.

2. **Arjun C. Bhowmick***, Julia M. Fitzgerald, and Alexandra Z. Chafetz, Investigating Cooperativity Between Pd (0) and Sb (V) in Bis(2-Picolyl)-Pd-SbCl3 Using Lewis Bases: A Case Study Using DFT, *American Journal of Chemistry*, 12 (5), **2022**.

3. **Arjun Bhowmick**, James D. Hoefelmeyer*, *CSD Communication*, **2021**, DOI: 10.5517/ccdc.csd.cc274j53.

4. **A. C. Bhowmick***, Recent Development of Trifluoromethyl Reagents: A Review, *J. Sci. Res.* **2021**, 13 (1), 317-333 (2021).

5. **Arjun Bhowmick**, Andrew G. Sykes, James D. Hoefelmeyer*, *CSD Communication*, **2020**, DOI: 10.5517/ccdc.csd.cc26ljv6.

6. **Arjun C. Bhowmick***, Majharul I. Moim, Miththira Balasingam, Schiff Base Complex of Cu (II) with Antibacterial and Electrochemical Study, *American Journal of Chemistry*, **2020**, 10(2): 33-37.

7. **Arjun Bhowmick***, Merazul Islam, Rina Bhowmick, Mamon Sarkar, Abu Shibly, Emdad Hossain, Synthesis and Structure Determination of Some Schiff Base Metal Complexes with Investigating Antibacterial Activity, *American Journal of Chemistry*, **2019**, 9(1): 21-25.

8. **A. C. Bhowmick***, Bikash Dev Nath, M. I. Moim, Coordination Complexes of Transition Metals and Schiff Base with Potent Medicinal Activity, *American Journal of Chemistry*, **2019**, 9(4): 109-114.

9. J. B. Islam, S. Akter, **A. C. Bhowmick**, M. N. Uddin and M. Sarkar**,** Hydro-environmental pollution of Turag river in Bangladesh, *Bangladesh J. Sci. Ind. Res***. 2018**, **53(3)**, 161-168, 2018.

10. **A. C. Bhowmick***, M. Idrish Ali, M. Abul Kashem Liton, A. Sharmin and S. Ghosh, Synthesis and Characterization of Few Irons, Rhenium and Manganese Complexes Containing Nitrogen, Phosphorous and Sulfur Donor Ligands, *Journal of science and technology*, **2012,** 2(2), 195-200.

11. **Arjun Chandra Bhowmick*,** Md. Asrafuzzaman, Foni Bushon Biswas, Assessment of Drinking Water Quality in MBSTU Campus, Journal of Science and Technology, *Journal of science and Technology*, **2016**, 6 (1 &2), 33-40.

12. **Arjun Chandra Bhowmick***, Md. Moustafijur Rahman Khan, Majharul Islam Moim, Nikhil Chandra Bhoumik, A.S.M Saifullah Comparative Study of Heavy Lead Pollution in Roadside Soil and Plants by Railway and Highway at Tangail District in Bangladesh, *Universal Journal of Applied Science*, **2015**, 3(3): 21-25.

13. **Arjun Chandra Bhowmick**, M. Abdur Rahaman, Merazul Islam, Nishat Akther, M. Shahadat Hossain and M. A. Majed Patwary Comparative Adsorption Study on Rice Husk and Rice Husk Ash by Using Amaranthus Gangeticus Pigments as Dye, *European scientific journal*, **2015,** 11(21), 254-265.

14. Trina Chakrabarty, Shamima Akter, A.S.M Saifullah1, Md. Shemul Sheikh, **Arjun C. Bhowmick**, Use of Fertilizer and Pesticide for Crop Production in Agrarian Area of Tangail District, Bangladesh, *Environment and Ecology Research*, **2014**, 2(6), 253-261.

15. M. Abul Kashem Liton, U. Salma, **A. Chandra Bhowmick**, Cytotoxicity and 2D-QSAR study of some heterocyclic compounds, *Arabian Journal of Chemistry*, **2014**, 7 (5), 639-646.

16. Eliasur Rahman, Umme Salma, **Arjun Chandra Bhowmick** and Mahbub Kabir Photocatalytic Degradation of Procian Yellow in Aqueous Suspension of ZnO by Visible Light" *Journal of science and technology*, **2013,** 3(2), 421-429.

17. Hasnatay Rabbi, A.S.M. Saifullah, Md. S. Sheikh, Md. M. H. Sarker and **A. C. Bhowmick**, Recent Study on Riverbank Erosion and Its Impacts on Land Displaced People in Sirajgonj Riverine Area of Bangladesh, *World Journal of Applied Environmental Chemistry*, **2013**, 2(2), 36-43.

18. M. Abul Kashem Liton, **A. C. Bhowmick,** M. Ashraf Ali, "3D-QSAR MIFs Studies on 3,5-substituted-1,4,2-dioxazoles Derivatives Using Open3DQSAR Tools" *Universal Journal of Chemistry*, **2013**, 1(2), 71-76.

19. **Arjun C. Bhowmick***, Umme Salma, Tasneem A. Siddiquee, Mohammad Russel and Nikhil C. Bhoumik Effect of Temperature on the Uptake of Na^{+}, K^{+}, $Ca^{2+}$and Mg^{2+} By the Various Anatomical Parts of the Vegetable Amaranth Gangeticus, *IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT)*, **2013,** 3(6), 20-31.

20. Ruksana H. Rimi, Shazia Farzana, Md. S. Sheikh, Md. Z. Abedin, **Arjun C. Bhowmick,** Climate Change Impacts on Shrimp Production at the South-West Coastal Region of Bangladesh, *World Environment*, **2013**, 3(3), 116-125.