

Dr. Najbul Hoque

Visiting Faculty

Qualification: M.Sc. Chemistry (IIT-Delhi) Ph.D. (IIT-Guwahati)

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Bio-sketch

Dr. Najbul Hoque was born at Bakshipur, West Bengal India in 1987. He completed his graduation in chemistry in 2008 from Krishnath college, Kalyani University, WB. Then he moved to Indian Institute of Technology Delhi (IITD) and received M.Sc in chemistry in 2010. He then qualified NET-CSIR and GATE and went to Indian Institute of Technology Guwahati (IITG) to pursue his Ph.D. His Ph.D thesis entitled with “An Endeavor in Receptor Design for Solid State Recognition of Anions/Hydrated Anions” was completed with Prof. Gopal Das in 2015. He moved to the group of Prof. Ming-Ling Tong at the Sun-Yat Sen University, China for postdoctoral research from 2016-2018. Then he continued postdoc research on the field of molecular magnetism with Prof. Marc Fourmigue and Prof. Karl Kramer at the University of Rennes1, France and University of Bern, Switzerland respectively, from the year of 2018-2021. He came back to India very recently and started his independent research and teaching career in the Department of Chemistry at NSUT-Main, Delhi as a Visiting Faculty. His research and teaching interests are on functional molecular magnetism and supramolecular chemistry. Area of Interest: Molecular Magnetism. Multi-Functional Materials (Ferroelectricity+Magnetism). Supramolecular Chemistry. Molecular Crystallography.

International Journal

1. Reversible solvent release and uptake in various solvatomorphs of nonporous binuclear Fe(III) complex with concomitant spin crossover phenomena
Hoque, M. N.; Chen, Y.-C.; Ni, Z.-P.; Tong, M.-L. Manuscript will be submitted soon to ***Cryst. Growth Des.***
2. Multiresponsive Spin Crossover Driven by Rotation of Tetraphenylborate Anion in an Iron(III) Complex
Hoque, M. N.; Wu, S-G.; Zheng, J-U.; Huang, G-H, Anh, N.V.H.; Ungur, L.; Zhang, W-X.; Ni, Z.-P.; Tong, M.-L. ***CCS Chemistry***, 2020, 2, 453-459.
3. Guest Switchable Multi-Step Spin Transition in an Amine-Functionalized Metal-Organic Framework
Liu, W.; Peng, Y-Y, Wu, S-G.; Chen, Y.-C.; ***Hoque, M. N.***; Chen, X-M.; Ni, Z.-P.; Tong, M.-L. ***Angew. Chem. Int. Ed.*** 2017, 129, 1–6.
4. Two-step Spin-Crossover with Three Inequivalent Fe(II) Sites in Two-Dimensional Hofmann-Type Coordination Polymer
Meng, Y.; Sheng, Q-Q.; ***Hoque, M. N.***; Chen, Y.-C.; Wu, S-G.; Tucek, J.; Zboril, R.; Liu, T.; Ni, Z.-P.; Tong, M.-L, ***Chem. Eur. J.*** 2017, 23, 10034–10037.

5. Recent advances in guest effects on spin-crossover behavior in Hofmann-type metal-organic frameworks (*Review*)
Ni, Z.-P.; Liu, J.-L.; **Hoque, M. N.**; Liu, W.; Li, J.-Y.; Chen, Y.-C.; Tong, M.-L. **Coord. Chem. Rev.** **2017**, *335*, 28-43.
6. A ladder-type iron(II) coordination polymer with enhanced spin-crossover behavior
Yan, Z.; Zhu, L.-F.; Zhu, L.-W.; Meng, Y.; **Hoque, M. N.**; Liu, J.-L.; Chen, Y.-C.; Ni, Z.-P.; Tong, M.-L. **Inorg. Chem. Front.**, **2017**, *4*, 921-926.
7. Overview of the strategic approaches for the solid-state recognition of hydrated anions (*Highlight*)
Hoque, M. N.; Das, G. **CrystEngComm**. **2017**, *19*, 1343-1360.
8. Implications of hydrogen/halogen-bond in the stabilization of confined water and anion-water clusters by a cationic receptor
Hoque, M. N.; Das, G. **J. of Mol. Struct.** **2016**, 1108, 298-306.
9. Discrepancy in anion coordination directed by isomeric pyridine-urea receptors: Solid state recognition of hydrated anions
Hoque, M. N.; Manna, U.; Das, G. **Polyhedron** **2016**, *119*, 307-316.
10. Encapsulation of fluoride and hydrogen sulfate dimer by polyammonium-functionalised first- and second-generation tripodal: cavity-induced anion encapsulation
Hoque, M. N.; Manna, U.; Das, G. **Supramol. Chem.** **2016**, *28*, 284-292.
11. Influence of the cavity dimension on encapsulation of halides within the capsular assembly and side-cleft recognition of a sulfate- water cluster assisted by polyammonium tripodal receptors
Manna, U.; Nayak, B.; **Hoque M. N.**, Das, G. **CrystEngComm**, **2016**, *18*, 5036-5044.
12. Anion complexation with cyanobenzoyl substituted first and second generation tripodal amide receptors: crystal structure and solution studies
Hoque, M. N.; Gogoi, A.; Das, G. **Dalton Trans.** **2015**, *44*, 15220-15231.
13. Hydrated anion glued capsular and non-capsular assembly of a tripodal host: Solid state recognition of bromide-water $[\text{Br}_5-(\text{H}_2\text{O})_6]^{5-}$ and iodide-water $[\text{I}_2-(\text{H}_2\text{O})_4]^{2-}$ clusters in cationic tripodal receptor
Hoque, M. N.; Das, G. **CrystEngComm**. **2014**, *16*, 4447-4458.
14. Cationic Tripodal Receptor Assisted Formation of Anion and Anion-Water Clusters: Structural Interpretation of Dihydrogen Phosphate Cluster and Sulfate-Water Tetramer $[(\text{SO}_4)_2-(\text{H}_2\text{O})_2]^{4-}$
Hoque, M. N.; Das, G. **Cryst. Growth Des.** **2014**, *14*, 2962-2971.
15. Pyridine-Urea-Based Anion Receptor: Formation of Cyclic Sulfate- Water Hexamer and Dihydrogen Phosphate-Water Trimer in Hydrophobic Environment (*Communication*)
Hoque, M. N.; Basu, A.; Das, G. **Cryst. Growth Des.** **2014**, *14*, 6-10.
16. Fluorescence Turn on Sensor for Sulfate Ion in Aqueous Medium Using Tripodal-Cu²⁺ Ensemble
Hoque, M. N.; Basu, A.; Das, G. **J. Fluo.** **2014**, *24*, 411-416.
17. Structural insight into the anion-water cluster: stabilised by alcohol and carboxylic acid containing tripodal ligand
Hoque, M. N.; Basu, A.; Das, G. **Supramol. Chem.** **2014**, *26*, 392-402.

- 18.** An aggregation-induced emission (AIE) active probe renders Al(III) sensing and tracking of subsequent interaction with DNA
Samanta, S.; Goswami, S.; ***Hoque, M. N.***; Ramesh, A.; Das, G. ***Chem. Commun.*** **2014**, *50*, 11833-11836.
- 19.** Cyclic Pentameric Puckered Hybrid Chloride-Water Cluster $[\text{Cl}_3(\text{H}_2\text{O})_4]^{3-}$ in the Hydrophobic Architecture (*Communication*)
Hoque, M. N.; Basu, A.; Das, G. ***Cryst. Growth Des.*** **2012**, *12*, 2153-2157.

Conference organised and attended

- Played role as an Organising committee OF Conference ON “CONFERENCE ON ADVANCED MATERIALS FOR EMERGING TECHNOLOGIES” Department of Physics, NSUT Main Campus from May 4-6, 2023 04/05/2023 to 06/05/2023.
- Played role as an Organiser of Webinar on “ Career prospects in Science” in Department of Chemistry & Physics, NSUT Main Campus from 04/11/2022 to 05/11/2022 .
- Invited Seminar on “ Career prospects in Science”, presented a talk entitled with “ Pathways to pursue Phd and Postdoc abroad.
- Poster presented in New Directions in Chemical Science (NDCS), Indian Institute of Technology Delhi, New Delhi, December 7-9, 2012.
- Poster presented Frontiers in Chemical Sciences (FICS), December 4-6, 2014, Indian Institute of Technology Guwahati, Assam, India.