

Name: Dr. Mahmuda Khannam

Department: Chemistry



Personal information:

Designation Assistant Professor
Date of Birth 30/06/1989
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Academic:

2013–2019 PhD in Chemistry, Indian Institute of Technology Guwahati, India.
Title of the Thesis: “**Synthesis, Characterization and Investigation on Water-Soluble, Aquated Gd(III) and Mn(II) complexes as MRI Contrast Agents**”.
Supervisor: Prof. Chandan Mukherjee.

2010–2012 M.Sc. (Chemistry), Inorganic Chemistry (Specialization)
Gauhati University, Assam, India. (92.8%, 1st Class 3rd position)

2007–2010 B.Sc. (Chemistry), Cotton College, Gauhati University, Assam, India.
(76.7%, 1st Class 1st position)

Research Interest:

- MRI contrast agents.
- Bioinorganic chemistry.

Awards & Achievements:

- Qualified ‘**JAM 2010**’ examination.
- Qualified ‘**GATE–2013**’ examination.
- Qualified ‘**SLET-2015**’ (N-E region) in Chemical Science.
- Awarded AFMI “**Gold Medal**” in 2007.
- “**Jadulal Mukherjee Memorial Award**” of the year 2010 for securing highest mark in Chemistry

(Major) in T.D.C. (Science) Final Examination under Guahati University.

- Awarded “**Post Graduate Merit Scholarship for University Rank Holder (2010-2012)**” by UGC.

Teaching Experiences:

- Teaching experience in Department of Chemistry, Cotton College, Guwahati, Assam (2012).
- Teaching assistance for ‘Inorganic Chemistry Practical Course’ (B.Tech. and M.Sc. at IIT Guwahati) (2013-2018).
- Teaching experience in B.Tech. classes at IIT Guwahati(2013-2018).
- Teaching experience in Department of Chemistry, Sibsagar Girls’ College, Sivasagar (2019).
- Assistant Professor in Department of Chemistry, PDUAM, Dalgaoon (2019-2025)

Publications:

Research Papers:

- (1) “A highly stable L-alanine-based mono(aquated) Mn(II) complexes as a T_1 -weighted MRI contrast agent”, **Mahmuda Khannam**, Thomas Weyhermüller, Upashi Goswami, and Chandan Mukherjee*, *Dalton Trans.*, **2017**, 46, 10426.
- (2) “Effect of Ligand Chirality and Hyperconjugation on Thermodynamic Stability of a Tris(aquated) Gd(III) Complex: Synthesis, Characterization and T_1 -Weighted Phantom MR Image Study”, **Mahmuda Khannam**, Suban K. Sahoo and Chandan Mukherjee*; *Eur. J. Inorg. Chem.*, **2019**, 2518-2523.
- (3) “Synthesis, characterization and study on the dissimilar reactivity of a Ni (II)-bis (iminosemiquinone) complex core to ligand-appended hemilabile–CH₂OH and–CH₂NH₂ units”, Prasenjit Sarkar, Samir Ghorai, Ganesh Chandra Paul, **Mahmuda Khannam**, Surajit Barman, Chandan Mukherjee*, *Inorganica Chim. Acta* 502, 119340
- (4)“Synthesis and Evaluation of a Gd (III) Complex as T_1 -Weighted MRI Contrast Agent”, **Mahmuda Khannam**, *International Journal of Science & Healthcare Research.* **2019**; 4(3): 93-101.
- (5) “The electrostatic confinement of aquated monocationic Gd(III) complex-molecules within the inner core of porous silica nanoparticles creates a highly efficient T1 contrast agent for magnetic resonance imaging”, **Mahmuda Khannam**, ‡ Riya Mallik, ‡ Muktaashree Saha, Shivani Marandi, Sachin Kumar and Chandan Mukherjee, *Dalton Trans.*, **2022**, 51, 14138–14149.
- (6) “Assessing Essential Parameters for Soil Fertility in Remote Agricultural Areas of PDUAM, Dalgaoon,

Darrang, Assam”, **Dr. Mahmuda Khannam**, Dr. Kalpana Upadhyaya and Dr. Moon Mandal, International Journal of Agriculture and Animal Production, Vol : 04, No. 03, April-May, **2024**.

Patents:

(1) Indian Patent filed on 30th May, 2018, under **Application No. 201831020332** entitled “HEXADENTATE CHELATE-BASED CONTRAST AGENT AND A METHOD FOR PRODUCING THE SAME”.

(2) Indian Patent filed on 30th May, 2018, under **Application No. 201831020333** entitled “PENTADENTATE CHELATE-BASED CONTRAST AGENT AND A METHOD FOR PRODUCING THE SAME”.

Book Chapters:

(1) **Khannam, M.** Paramagnetic Metal Complexes as T1-contrast Agents, 67, **2019**, Purbayon Publication, ISBN 978-93-88593-73-1.

(2) **Khannam, M.** and Mandal, M. Industrial Water Treatment Program-Importance and Management of Water Systems, Environment, Climate Change and Natural Challenges, 154, **2021**; Publisher Gargaon College Publication Cell & Purbayon Publication. ISBN: 978-93-90919-60-4.

(3) **Khannam, M.** and Mandal, M. Sanitary Practices and Waste Management Among Adolescent Girls and Women in Rural Area of Dalgaon Constituency Under Darrang District, Assam: A Case Study, 174, **2022**, Thanuj International Publisher. ISBN: 978-93-94638-19-8.