Personal Profile

Dr. Rajesh Chakrabarty
Associate Professor, Department of Chemistry
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Educational Profile

Ph.D.	Gauhati University, Guwahati, Assam; 2006 Supervisor: Dr. Birinchi Kumar Das
M.Sc.	Gauhati University, Assam, 1998 Subject: Chemistry Specialization: Inorganic Chemistry
B.Sc.	Manipur University, Manipur, 1996 Subject: Chemistry

Professional Experience

Associate Professor, Department of Chemistry, Rajiv Gandhi University, Arunachal Pradesh, India	July 2015-till date
Assistant Professor, Department of Chemistry, Rajiv Gandhi University, Arunachal Pradesh, India	July 2012- July 2015
Post-doctoral Fellow, University of Utah, Salt Lake City, USA. Supervisor: Prof. Peter J. Stang	Nov 2009- July 2012
CSIR Research Associate, Indian Institute of Science (IISc), Bangalore. Supervisor: Prof. Partha Sarathi Mukherjee	May 2007- Nov 2009

Administrative Experience

Head of Department, Department of Chemistry, Rajiv Gandhi University, Arunachal Pradesh, India	July 2016- Till Date
Member, The 4th Executive Council, Rajiv Gandhi University	August 2018-August 2021
Member, Internal Quality Assurance Cell (IQAC), Rajiv Gandhi University	January 2016- Till Date

Awards & Honours

1. Science Academies Summer Research Fellowship by IASc-NASI-INSA, India in 2014.
2. Visiting Student Fellowship from Mesoporous Inorganic Solids (MIS) Network, UK to work with Prof. James H Clark, Green Chemistry Centre for Excellence, University of York, UK in 2002.
3. Qualified CSIR-UGC-NET for JRF in June, 2001.

Membership of Professional Bodies

1. Member of American Chemical Society, USA (2010-Till Date)
2. Life Member of Chemistry Research Society of India (CRSI), India (LM 2926)
3. Life Member of The Association of Chemistry Teachers, India (LM 2041)

Research Interests

- Self-assembly of functional molecular architectures
- Organometallic materials
- Metal-organic frameworks (MOFs)
- Metal clusters/polyclusters
- Water remediation

Research Publications

1. Post-assembly Functionalization of Organoplatinum(II) Metallacycles Through Copper-free Click Chemistry: Chakrabarty, R.; Stang, P. J. *J. Am. Chem. Soc.* **2012**, 134, 14738-14741.
2. Supramolecular Coordination: Self-Assembly of Finite Two- and Three-Dimensional Ensembles; Chakrabarty, R.; Mukherjee, P. S.; Stang, P. J. *Chem. Rev.* **2011**, *111*, 6810-6918.
3. Coordination Driven Self-Assembly of Metallamacrocycles Using Ambidentate Linkers and Self-Selection of Single Linkage Isomer; Bar, A. K.; Chakrabarty, R.; Lee, H. M.; Mukherjee, P. S. *Inorg. Chim. Acta.* **2011**, *372*, 313-320.
4. Cobalt(III)-Oxo Cubane Clusters as Catalyst for Oxidation of Organic Substrates: Das, B. K.; Chakrabarty, R. *J. Chem. Sci.* **2011**, *123*, 163-173.
5. The Syntheses, Characterizations, X-Ray Crystal Structures and Properties of Cu(I) Complexes of a Bis-Bidentate Schiff Base Ligand: Mukherjee, A.; Chakrabarty, R.; Ng, S. W.; Patra, G. K. *Inorg. Chim. Acta.* **2010**, *363*, 1707-1712.
6. Use of 2-Pyrimidineamidoxime to Generate Polynuclear Homo-/Heterometallic Assemblies: Synthesis, Crystal Structures and Magnetic Study with Theoretical Investigations on the Exchange Mechanism; Gole, B.; Chakrabarty, R.; Mukherjee, S.; Song, Y.; Mukherjee, P. S. *Dalton Trans*. **2010**, *39*, 9766-9778.

7. Novel 3-Dimensional Sixfold Interpenetrating Diamondoid Networks of Copper(I) Coordination Polymers of Polypyridyl Ligands - Syntheses, Characterization and Crystal Structures: Mukherjee, A.; Chakrabarty, R.; Patra, G. K. *Inorg. Chem. Commun.* **2009**, *12*, 1227-1230.

8. Cu^{II}-Azide Polymers of Cu_3 and Cu_6 Building Units: Synthesis, Structures, and Magnetic Exchange Mechanism: Mukherjee, S.; Gole, B.; Chakrabarty, R.; Mukherjee, P. S. *Inorg. Chem.* **2009**, *48*, 11325-11334.

9. Self-Assembly of a Pd_6-Molecular Double-Square and a Cu_3-Trigonal bipyramidal Cage via a New Tripodal Flexible Ligand: Bar, A. K.; Chakrabarty, R.; Mukherjee, P. S. *Inorg. Chem.* **2009**, *48*, 10880-10882.

10. Catalytic Properties of Cobalt(III)-Oxo Cubanes in the TBHP Oxidation of Benzylic Alcohols: Chakrabarty, R.; Sarmah, P.; Saha, B.; Chakravorty, S.; Das, B. K. *Inorg. Chem.* **2009**, *48*, 6371-6379.

11. Synthesis and Characterisation of Heterometallic Molecular Triangles Using Ambidentate Linker: Self-Selection of a Single Linkage Isomer: Bar, A. K.; Chakrabarty, R.; Chi, K.-W.; Batten, S. R.; Mukherjee, P. S. *Dalton Trans.* **2009**, 3222-3229.

12. Design, Synthesis, and Characterizations of a Series of Pt_4 Macrocycles and Fluorescent Sensing of Fe^{3+}/Cu^{2+}/Ni^{2+} Through Metal Coordination: Ghosh, S.; Chakrabarty, R.; Mukherjee, P. S. *Inorg. Chem.* **2009**, *48*, 549-556.

13. Self-Assembly of a Nanoscopic $Pt_{12}Fe_{12}$ Heterometallic Open Molecular Box Containing Six Porphyrin Walls: Bar, A. K.; Chakrabarty, R.; Mostafa, G.; Mukherjee, P. S. *Angew. Chem. Int. Ed.* **2008**, *47*, 8455-8459.

14. Unusual Hydrogenation of Fumarate Anion Followed by Metal-Carbon Bond Formation: Synthesis and Characterization of Two Metallochelates: Bar, A. K.; Chakrabarty, R.; Mukherjee, P. S. *Organometallics* **2008**, *27*, 3806-3810.

15. Coordination Driven Self-Assembly of Four New Molecular Boats Using a Flexible Imidazole-Containing Donor Linker: Ghosh, S.; Chakrabarty, R.; Mukherjee, P. S. *Dalton Trans*. **2008**, 1850-1856.

16. Synthesis, Structure, Spectral and Electrochemical Properties, and Catalytic Use of Cobalt(III)-Oxo Cubane Clusters: Chakrabarty, R.; Bora, S. J.; Das, B. K. *Inorg. Chem*. **2007**, *46*, 9450-9462.

17. Selective Oxidation of Alcohols Catalysed by a Cubane-Like Co(III) Oxo Cluster Immobilised on Porous Organomodified Silica: Sarmah, P.; Chakrabarty, R.; Phukan, P.; Das, B. K. *J. Mol. Catal., A: Chemical* **2007**, *268*, 36-44.

18. Catalytic Oxidation of *p*-Xylene in Water by Cobalt(III) Oxo Cluster: Chakrabarty, R.; Kalita, D.; Das, B. K. *Polyhedron* **2007**, *26*, 1239-1244.

19. Physicochemical Behaviour of Copper(II) Complexes of Chelated Diamine Ligands: Catalytic Role Of Diaquabis(Ethylenediamine)Copper(II) Perchlorate in Acylal Formation: Sarmah, P.; Singha, S.; Chakrabarty, R.; Bora, S. J.; Das, B. K. *Indian J Chem A* **2007**, *46A*, 1929-1937.

20. Dual Role of Azide in the Formation of a 3D Coordination Polymer Containing Bridging 5-Pyrimidinecarboxylate: Sengupta, O.; Chakrabarty, R.; Mukherjee, P. S. *Dalton Trans*. **2007**, 4514-4516.

21. Enhanced Selectivity in Green Catalytic Epoxidation Using a Novel Supported Cobalt Complex: Chakrabarty, R.; Das, B. K.; Clark, J. H. *Green Chem*. **2007**, *9*, 845-849.

22. 2′,4′-Dichlorochalcone: Phukan, M.; Phukan, P.; Chakrabarty, R.; Sarma, B. K. *Acta Cryst.* **2006**, *E62*, o5056-o5057.

23. Structural, Thermal and Spectroscopic Properties of Supramolecular Coordination Solids: Das, B. K.; Bora, S. J.; Chakrabortty, M.; Kalita, L.; Chakrabarty, R.; Barman, R. *J. Chem. Sci.* **2006**, *118*, 487-494.

24. Epoxidation of □-Pinene Catalysed by Tetrameric Co(III) Complexes, Chakrabarty, R.; Das, B. K. *J. Mol. Catal. A: Chemical* **2004**, *223*, 39-44.

25. Structure and Properties of Tetraaquabis(Hydrogenmaleato)Iron(II): Barman, R. K.; Chakrabarty, R.; Das, B. K. *Polyhedron* **2002**, *21*, 1189-1195.

Book/Book Chapter published

1. Das, B. K.; Chakrabarty, R.; Sarmah, P.: Cobalt(III)-supported chemically modified mesoporous silicas as heterogeneous oxidation catalysts, in *Heterogeneous Catalysis Research Progress*, Eds. Gunther, M. B., Nova Publishers, USA, 2008, pp. 111-143.

2. Chakrabarty, R.; Bora, S. J.; Das, B. K.: Oxidation of Ethylbenzene Catalysed by Soluble Cobalt(III) Complexes, in *Catalysis in Petroleum and Petrochemical Industries*, Eds. Bhattacharyya, K. G.; Talukdar, A. K., Narosa Publishing House, New Delhi, 2005, pp. 268-272.

Research guidance

Ph.D scholar

1. Ms. Plabita Rajkhowa

   Topic of research: Studies on Luminescent Metal-organic frameworks (MOFs) and their Post-Synthetic Modification

   Year of PhD degree: Ongoing

2. Mr. Yumi Nyori

   Topic of research: Assessment of Physicochemical Parameters and Distribution of Heavy Metals in Groundwater in East Siang District of Arunachal Pradesh

   Year of PhD degree: Ongoing

3. Ms. Jinku Borah

   Topic of research: Artificial Photosynthesis: Catalytic Water Oxidation using Metal-Oxo Clusters

   Year of PhD degree: Ongoing

4. Mr. Narendra Pramanik

   Topic of research: A Study on Anthropogenic and Geogenic Sources of Contaminants in Drinking Water Sources in the Papum Pare District of Arunachal Pradesh

   Year of PhD degree: Ongoing

5. Ms. Rekhamoni Das

   Topic of research: Design, Synthesis and Functionalization of Self-assembled Supramolecular Coordination Complexes

   Year of PhD degree: Ongoing

Course/Conference/Workshop etc. attended

1. Delivered a lecture as resource person in 'One Week Online Faculty Development Programme (FDP) on Development and applications of Sensors in Modern life' organized by National Institute of technology (NIT), Arunachal Pradesh, India during October 25-29, 2021.

   Title of the Lecture: Designing supramolecular coordination complexes for potential application as sensors

2. Delivered an invited lecture in the 'National Conference on Green, Sustainable and Evolving Sciences (GSES 2019) & 64th Annual Technical Session of Assam Science Society' held at Cotton University, Guwahati, India during June 28-29, 2019.

   Title of the Lecture: Development of functional metal-organic materials (MOMs) via post-synthetic modification

3. Delivered an invited lecture in the 'National Seminar on Emerging Trends in Chemical Sciences 2016' held at Gauhati University, Guwahati, India on May 27, 2017.

   Title of the Lecture: Functionalization of metallosupramolecular assemblies via postsynthetic modification

4. Delivered an invited lecture in the 'International Conference on Emerging Trends in Science and Engineering Research' held at National Institute of Technology (NIT), Manipur, India during December 2-4, 2015.

   Title of the Lecture: Postsynthetic functionalization of metallosupramolecular assemblies via copper-free click chemistry

5. Delivered an invited lecture in the 'International Conference on Harnessing of Natural Resources for Sustainable Development: Global Trend' held at Cotton College, Guwahati, India during January 29-31, 2014.

   Title of the Lecture: Postsynthetic modification of nanoscale metallosupramolecular assemblies via copper-free click chemistry

Sponsored Project

Title of the project	Funding agency	Year of sanction	Role
Development of Luminescent Supramolecular Coordination Complexes via Post-synthetic Modification for Sensing Application	SERB, DST	2017	PI
Utilization of Rice Husk from Assam and Arunachal Pradesh as Potential Host Materials for Various Transition Metal Based Catalysts	UGC	2014	PI