



Rajarshi Ghosh

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Department of Chemistry
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Academic background:

Ph.D.: The University of Burdwan, Burdwan 713 104 (Supervisor: Prof. B. K. Ghosh)

M.Sc.: University of Kalyani, Kalyani, Nadia 741 235, WB

B.Sc.: Chakdaha College (under University of Kalyani), Chakdaha, Nadia 741 222, WB

Research interest:

Synthetic coordination chemistry, Biomimicking and Biological inorganic chemistry

Research students:

Present

Ayon Kanti Ghosh
(M.Sc.: Jadavpur
University)



Arnab Chatterjee
(M.Sc.: The University of
Burdwan)




Arghya Dutta
(M.Sc.: Vidyasagar
University)



Alumni

6.	<p>Dr. Ashis Kumar Maji (M.Sc.: The University of Burdwan)</p> <p>Thesis title: Metallo-organic frameworks containing some d^n ions, polydentate N-donor blockers and inorganic bridges: syntheses, structures and properties</p> <p>Date of degree awarded: 07-August-2018</p>	
5.	<p>Dr. Sarat Chandra Kumar (M.Sc.: Ranchi University)</p> <p>Thesis title: Synthesis, structural characterization and properties of Mn(II), Ni(II) and Zn(II) complexes using some multidentate organic ligands</p> <p>Date of degree awarded: 06-April-2018</p>	
4.	<p>Dr. Sunit Kumar Mal (M.Sc.: Jadavpur University)</p> <p>Thesis title: Synthesis, structure and molecular properties of some $3d^n$ complexes containing multidentate organic blockers and bridges</p> <p>Date of degree awarded: 16-June-2017</p>	
3.	<p>Dr. Merry Mitra (M.Sc.: The University of Burdwan)</p> <p>Thesis title: Studies on some mono-, di- and polynuclear Mn, Fe, Co and Cu complexes using multidentate organic ligand</p> <p>Date of degree awarded: 05-July-2016</p>	
2.	<p>Dr. Abhijit Pal (M.Sc.: Indian Institute of Engineering Science and Technology, Shibpur, Howrah (Formerly Bengal Engineering and Science University))</p> <p>Thesis title: Syntheses, X-ray structures, properties, and supramolecular chemistry of some $3d/4d$ block transition metal complexes with ligands containing N and/or O donor sets and pseudohalides</p> <p>Date of degree awarded: 21-January-2014</p>	

1.	<p>Dr. Bhaskar Biswas (M.Sc.: The University of Burdwan)</p> <p>Thesis title: Synthesis and characterization of some transition and inner-transition metal complexes with different (N,N) and (N,O) donor sets</p> <p>Date of degree awarded:11-March-2013</p>	
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Research Projects:

Project title	Start	Completion	Project cost	Sponsoring organizations
Synthesis, characterization and tyrosinase/catecholase activity of some transition metal complexes with (N,O) donor ligands [781(Sanc.)/ST/P/S&T/4G-4/2013 dated 04-12-2014]	14-01-2015	13-01-2018	10,18,000/-	DST, GoWB
Some aspects of polynuclear chemistry of iron [SR/FT/CS-83/2010 dt. 11-02-2011]	25-03-2011	24-09-2014	18,65,000/-	DST, New Delhi, India
Polynuclear Manganese(II) Single Molecule Magnets: Synthesis, Structure and Magnetism [F. 34-554/2008(SR) dated 15-01-2009]	01-02-2009	31-01-2011	1,05,000/-	UGC, New Delhi, India

Selected Recent Publications (last 5 years):

I. Scientific articles

19. D. Mandal, A. K. Ghosh, A. Chatterjee and R. Ghosh, Synthesis and structural characterization of a dinuclear Cu(II) complex with a (N,S) donor ligand: Catecholase and phenoxazinone synthase activities, *Inorg. Chim. Acta*, 2019, **486**, 719-723.

18. A. K. Ghosh, C. S. Purohit and R. Ghosh, Synthesis and structural characterization of a cobalt(III) complex with an (N,S,O) donor Schiff base ligand: catechol oxidase and phenoxazinone synthase activities, *Polyhedron*, 2018, **155**, 194-201.
17. A. K. Ghosh, A. Ali, Y. Singh, C. S. Purohit and R. Ghosh, Synthesis, structural and magnetic characterizations of a dinuclear copper(II) complex with an (N,S,O) donor ligand: catecholase and phenoxazinone synthase activities, *Inorg. Chim. Acta*, 2018, **474**, 156-163.
16. A. Chatterjee, H. R. Yadav, A. R. Choudhury, A. Ali, Y. Singh and R. Ghosh, Tyrosinase and catecholase-like activities of a dinuclear copper(II) complex, *Polyhedron*, 2018, **141**, 140-146.
15. A. Pal, S. C. Kumar, P. Mitra, S. Chowdhury and R. Ghosh, A green polymeric zinc(II) complex: synthesis, structural characterization and theoretical studies, *Indian J. Chem.*, 2017, **56A**, 1317-1320.
14. A. K. Maji, A. Chatterjee, S. Khan, B. K. Ghosh and R. Ghosh, Synthesis, crystal structure, catecholase and phenoxazinone synthase activities of a mononuclear cobalt(III) complex containing *in situ* formed tridentate N-donor Schiff base, *J. Mol. Struct.*, 2017, **1146**, 821-827.
13. A. K. Ghosh, H. R. Yadav, A. R. Choudhury, N. Duraipandian, M. S. Kiran and R. Ghosh, Synthesis and crystal structure of pyridine-2-carboxaldehyde thiosemicarbazone, its mononuclear and cytotoxic Cu(II)- and polynuclear Pb(II) complexes: effect of size of metal ion on nucleation of the complexes, *Indian J. Chem.*, 2017, **56A**, 616-620.
12. A. K. Maji, S. Khan, A. K. Ghosh, C. -H. Lin, B. K. Ghosh and R. Ghosh, Synthesis, crystal structure and catecholase activity of $[\text{Co}(\text{SCN})_2(\text{L})]$ [$\text{L} = \text{N,N}'$ -(bis(pyridine-2-yl)benzilidene)-1,2-ethanediamine], *J. Mol. Struct.*, 2017, **1143**, 489-494.

11. S. C. Kumar, A. K. Ghosh, J. -D. Chen and R. Ghosh, Structurally characterized mononuclear Mn(II) complex: Functional model for catecholase and phenoxazinone synthase activities, *Inorg. Chim. Acta*, 2017, **464**, 49-54.
10. S. K. Mal, T. Chattopadhyay, A. Fathima, C. S. Purohit, M. S. Kiran, B. U. Nair and R. Ghosh, Synthesis and structural characterization of a vanadium(V)-pyridylbenzimidazole complex: DNA binding and anticancer activity, *Polyhedron*, 2017, **126**, 23-27.
9. M. Mitra, T. Kundu, G. Kaur, G. Sharma, A. R. Choudhury, Y. Singh and R. Ghosh, Catecholase and phenoxazinone synthase activities of a ferromagnetically coupled tetranuclear Cu(II) complex, *RSC Adv.*, 2016, **6**, 58831-58838.
8. M. Mitra and R. Ghosh, Phenoxazinone synthase activity of a mononuclear Co(III) complex, *Indian J. Chem.*, 2016, **55A**, 681-685.
7. S. K. Mal, M. Mitra, H. R. Yadav, C. S. Purohit, A. R. Choudhury and R. Ghosh, Synthesis, crystal structure and catecholase activity of a vanadium(V)Schiff base complex, *Polyhedron*, 2016, **111**, 118-122.
6. A. Pal, S. C. Kumar, A. K. Ghosh, C. -H. Lin, E. Rivière, T. Mallah and R. Ghosh, Synthesis, X-ray structure and catecholase activity of an antiferromagnetically coupled trinuclear Ni(II) complex, *Polyhedron*, 2016, **110**, 221-226.
5. A. K. Ghosh, M. Mitra, A. Fathima, H. Yadav, A. R. Choudhury, B. U. Nair and R. Ghosh, Antibacterial and catecholase activities of a Co(III) and Ni(II)Schiff base complexes, *Polyhedron*, 2016, **107**, 1-8.
4. S. K. Mal, M. Mitra, C. S. Purohit and R. Ghosh, A trimetallic zinc(II) complex and its catecholase activity, *Polyhedron*, 2015, **101**, 191-195.
3. S. C. Kumar, A. Pal, M. Mitra, V. M. Manikandamathavan, C. -H. Lin, B. U. Nair and R. Ghosh, DNA binding and cleavage activity of a structurally characterized Ni(II) Schiff base complex, *J. Chem. Sci.*, 2015, **127**, 1375-1381.
2. M. Mitra, P. Raghavaiah and R. Ghosh, A mononuclear cobalt(III) complex and its catecholase activity, *New J. Chem.*, 2015, **39**, 200-205.

1. S. K. Mal, M. Mitra, B. Biswas, G. Kaur, P. P. Bag, C. M. Reddy, A. R. Choudhury, N. Aliaga-Alcaalde and R. Ghosh, Ligand template synthesis of an undecametallic iron(III) complex: X-ray structure, magnetism and catecholase activity, *Inorg. Chim. Acta*, 2015, **425**, 61-66.

II. Selected Popular Writings

English

3. R. Ghosh, Satyendra Nath Bose and his contributions to chemistry, *Current Science*, 2019, 117, PP. 711-712.
2. R. Ghosh, 120th Birth Anniversary of J. C. Bardhan, *Science Reporter*, 2016, October, P. 12.
1. R. Ghosh, Molecule of the month: Mercurous nitrite, *Resonance*, 2014, October, PP. 958-960.

Bengali

11. R. Ghosh, Swamiji-suhrid Matilal Basu O Bangalir circus, *Nibodhata*, 2019, March-April, PP. 633-634
10. R. Ghosh, Jogendra Kumar Chowdhury, *Jnan-O-Bijnan*, 2019, January, PP. 45-46
9. R. Ghosh, Bharate shalya chikitsay prothom X-ray byabahār, *Jnan-O-Bijnan*, 2018, April, PP. 182-183
8. R. Ghosh, Rasāyan bijnani Satyendranath, *Jnan-O-Bijnan* (Acharjya Satyendranath Basu bishesh sankhyā), 2018, May, PP. 307-309.
7. R. Ghosh, Jeeb bijnani Ram Brahma Sanyal ebong Swamijir 'kramabikāshbād', *Udbodhon*, 2018, April, PP. 276-277.
6. R. Ghosh, Keshab Chandra Nāg: Shri Shri Mayer Kripa dhonya ek ganit prativa, *Udbodhon*, 2017, October, PP. 723-729.
5. R. Ghosh, Rathindranath Thakur: Ek bisrita-prai bijnan premee, *Udbodhon*, 2017, August, PP. 586-587.
4. R. Ghosh, Enzyme kee, keno?, *Jnan-O-Bijnan* (Adhyāpika Asima Chattopadhyay janmashatabarsho o rosayon sankhyā), 2017, May, PP. 304-306.
3. S. Talukdar and R. Ghosh, Atma-khādak jibkosh: 2016-i chikitsā bijnane Nobel, *Udbodhon*, 2017, February, P. 115.
2. R. Ghosh, Adhyāpak Sushil Kumār Siddhānta, *Jnan-O-Bijnan*, 2016, January, PP. 42-43

1. R. Ghosh, Adhyāpak Jogendra Chandra Bardhan, *Jnan-O-Bijnan*, 2015, March, PP. 148-150.

Invited Lectures (selected)

I. Scientific

5. Title of the talk: "Some first row transition metal complexes as anticancer agents", international seminar held on March 15 and 16, 2019 at Department of Chemistry, Assam University, Silchar, Assam
4. Title of the talk: "Story of a mononuclear Fe(II)Schiff base complex: its potentiality for induction of oxidative and genotoxic damage in plant genome", national seminar held on July 26 and 27, 2018 at Department of Chemistry, University of Kalyani, Kalyani, Nadia
3. Title of the talk: "Tyrosinase, catecholase and catechol dioxygenase reactions by some biomimetic metal complexes", national seminar held during March 20-22, 2018 at Department of Chemistry, Assam University, Silchar, Assam
2. Title of the talk: "Simple synthetic routes to some transition metal complexes: DNA binding, DNA cleavage and anticancer activity", national seminar held on December 22 & 23, 2016 at Department of Chemistry, Sonamukhi College, Bankura
1. Title of the talk: "Simple synthetic routes to some biological and biorelevant coordination molecules", national seminar held on December 15, 2015 at Department of Chemistry, Sidho-Kanho-Birsha University, Purulia

II. Popular

6. Title of the talk: "Mendeleev's Periodic Table: some facts and facets", Department of Chemistry, Ramkrishna Mission Vivekananda Centenary College, Rahara, Kolkata 700 118, September 24, 2019
5. Title of the talk: "Invention and innovation: global perspectives", Innovation Club, Assam University Silchar, Assam, August 27, 2019
4. Title of the talk: "Keshab Chandra Nag on his 125th birth anniversary", Ramkrishna Mission Institute of Culture, Golpark, Kolkata (organized by Mitra Institution, Bhawanipore branch, Kolkata), August 18, 2018.
3. Title of the talk: "Life and work of Satyendra Nath Bose on his 125th birth anniversary", Department of Chemistry, Burdwan Raj College, Bardhaman, March 06, 2018

2. Title of the talk: "Life and work of Madame Curie on her 150th birth anniversary", Department of Chemistry, B C College, Asansol, Paschim Bardhaman, December 18, 2017
1. Title of the talk: "Life and work of Madame Curie on her 150th birth anniversary", Department of Chemistry, Kashipur Michael Madhusudan Mahavidyalaya, Kashipur, Purulia, December 13, 2017