

Dr. Ashok Sasmal

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Educational History

- 2009- 2014 **Ph.D.(Sc.) in Chemistry**
Department of Chemistry, Jadavpur University, Kolkata, India

Thesis title: Synthesis, structural aspects, magneto-structural correlation and supramolecular interactions of some metal complexes.
- 2006-2008 **M.Sc. in Chemistry**
Chhatrapati Shahu Ji Maharaj University, Kanpur,
Uttarpradesh, India
- 2001-2004 **B.Sc. Chemistry with honours**
University of Calcutta, Kolkata, West Bengal, India

Awards

JRF+LS (CSIR-NET, June 2008) Qualified. (National Eligibility Test examination for award of Junior Research Fellowship and eligibility for lectureship)

Employment

- 2015- 2016 **Post-doctoral Position**
Department of Chemistry Education,
Chungbuk National University, Seowon-ku, Cheongju City,
Republic of Korea, 361-763

Employment

August, 2017 – December, 2019

Part-time Teacher

Department of Chemistry

Behala College, Parnashree, Kolkata-700060

January 2020 - till date

State Aided College Teacher -I

Department of Chemistry

Behala College, Parnashree, Kolkata-700060

Research and Experience

Ph.D research work: Synthesis of coordination polymers and complexes of first row transition metal using redox active and normal Schiff base ligands and to find possible applications as switching as well as molecular magnets material. The study of magnetic exchange interaction among the paramagnetic metal centers in complexes and analysis of electronic structure of the metal centre by EPR were carried out.

Postdoctoral Research : Organometallic Chemistry

Synthesis of metallocene such as **constrained geometry complexes (CGC)** using Titanium and zirconium, silicon and homo and copolymerization of ethylene and propylene using synthesized catalyst.

Organic Synthesis: Organic synthesis such as protection/deprotection of aldehyde, deprotection phenolic OMe, Suzuki coupling etc. to design suitable ligand system to synthesis metal complexes specially Aluminium (Al). I have experience of using pyrophoric materials such as Me_3BF , n-BuLi, BBr_3 , AlMe_3 , Me_2SiCl_2 , grignard reagents etc.

Synthesis of triarylborane–aluminum salen compounds

The triarylborane–aluminum salen systems are based on two individual fluorescent luminophores emergence of intriguing luminescent properties resulting from the efficient energy transfer between the two moieties. The triarylborane–aluminum salen systems demonstrate multiple emission bands as chemical sensors for fluoride ions. The novel compounds could be also considered promising candidates for optoelectronic applications, such as emitting materials in OLEDs.

Experience with other techniques / instruments, data analysis and software: Schlenk line, Glove box, 500MHz and 400 MHz NMR spectrometer (Bruker), Single crystal X-ray Diffractometer (Bruker), UV (Perkin Elmer), FT-IR (Perkin Elmer), TG-DTA (Mettler), CV (Princeton applied research), optical microscope (Olympus), Column Chromatography, solvent extraction, Handling Pyrophoric Materials, Rotary Evaporator.

Experience in technical and general software: Crystallographic software (Wingx, Ortep, Platon, Diamond, Mercury, Olex, Encifer, Pubcif), MestReNova, Chemdraw

Conferences and Symposia

1. Presented poster in a International symposium on 'Molecular Organization and Complexity: A Chemical Perspective' held at University of Calcutta, Kolkata, India, February, 2013.
2. Presented poster in a International symposium on 'Modern Trends in Inorganic Chemistry' (MTIC-XV) held at Indian Institute of Technology , Roorkie (IITR), India, December, 2013.
3. Participated in symposium on “National Seminar on Recent Advances in Chemistry” (Under the centre for advanced studies Programme, UGC) held on February, 2012 at Department of Chemistry, Jadavpur University, Kolkata, India.
4. Presented poster in a “National Seminar on Inorganic Chemistry – 2011 and Celebration of 150th Birth Anniversary of Acharya P.C. Ray” held on July, 2011 at Department of Chemistry, Jadavpur University, Kolkata, India,
5. Attended as a participant in symposium on “Celebration of International years of Chemistry” held on March, 2011 at Department of chemistry, Jadavpur University, Kolkata, India.
6. Participated in symposium on “Recent Trends & Future Scope in participated years of Chemistry” held on January, 2010 at Department of chemistry, West Bengal State University, Kolkata, India.

Teaching Experiences

I have been teaching in under graduate and post graduate and taking practical classes. Teaching areas are given below.

UG: (Honours)

SEM-I: Electrochemistry; Redox Reaction
Practical Classes

SEM-II: Chemical Bonding –II
Practical Classes

SEM-III: Noble gases; Inorganic Polymers
Practical Classes

SEM-IV: Coordination Chemistry – II (Crystal Field Theory and Magnetochemistry)
Practical Classes

SEM-V: Statistical Thermodynamics (Physical Chemistry)

SEM-VI: Organometallic Chemistry;
Molecular Spectroscopy (Physical Chemistry)
Practical Classes

PG:

SEM-II: Nuclear Chemistry

SEM-III: Photoelectron Spectroscopy
Practical Classes

SEM IV: Inorganic rings and clusters

List of publications

1. Sandeeptha Saha, Niladri Biswas, **Ashok Sasmal**, Carlos J. Gomez-Garcia, Eugenio Garribba, Antonio Bauza, Antonio Frontera, Guillaume Pilet, Georgina M. Rosair, Samiran Mitra, Chirantan Roy Choudhury; Effect of temperature and ligand protonation on the electronic ground state in Cu(II) polymers having unusual secondary interactions: Magnetic and Catechol oxidase study, *Dalton Transactions* **2018**, 47, 16102-16118. (Impact Factor – 4.390)
2. **Ashok Sasmal**, Eugenio Garribba, Valeria Ugone, Corrado Rizzoli, Samiran Mitra; Synthesis, crystal structures, EPR and DFT studies of first row transition metal complexes of lignin model compound ethylvanillin, *Polyhedron*, **2017**, **121**, 107-114. (Impact Factor-3.052)
3. Shyamapada Shit, **Ashok Sasmal**, Piu Dhal, Corrado Rizzoli, Samiran Mitra; Syntheses, structural variations and fluorescence studies of two dinuclear zinc(II) complexes of a Schiff base ligand with an extended carboxylate side arm, *Journal of Molecular Structure*, **2016**, **1106**, 475-781. (Impact Factor-3.196)
4. Sandeeptha Saha, **Ashok Sasmal**, Chirantan Roy Choudhury, Guillium Pilet, Antonio Bauzá, Antonio Frontera, Sharmila Chakraborty, Samiran Mitra; Synthesis, crystal structure, antimicrobial screening activities and DFT studies of Manganese (II), Nickel (II) and Zinc (II) mononuclear Schiff base complexes, *Inorganica Chimica Acta*, **2015**, **425**, 211-220. (Impact Factor-2.545)
5. **Ashok Sasmal**, Eugenio Garribba, Carlos J. Gomez-Garcia, Cedric Desplanches, Samiran Mitra, Switching and redox isomerism in first-row transition metal complexes containing redox active Schiff base ligands, *Dalton Transactions*, **2014**, **43**, 15958-15967. (Impact Factor-4.390)
6. **Ashok Sasmal**, Eugenio Garribba, Corrado Rizzoli, Samiran Mitra, Reversible switching of electronic ground state in a pentacoordinated Cu(II) 1D cationic polymer and structural diversity; *Inorganic Chemistry*, **2014**, **53**, 6665-6674. (Impact Factor-5.165)

7. Piu Dhal, Ashok Sasmal, Carlos J. Gomez-García, Antonio Bauza, Antonio Frontera, Guillaume Pilet, and Samiran Mitra; Copper-assisted hemiacetal synthesis: a Cu(II) chain obtained by a one-step in situ reaction of picolinaldehyde, *European Journal of Inorganic Chemistry*, 2014, 3271-3278. (Impact Factor-2.524)

8. Ashok Sasmal, Antonio Bauzá, Antonio Frontera, Corrado Rizzoli, Cédric Desplanches, Loïc J. Charbonnière, Samiran Mitra; Relevant and unprecedented C-H/ σ supramolecular interactions involving σ -aromatic M_2X_2 Cores, *Dalton Transactions*, 2014, 43, 6195-6211. (Impact Factor-4.390)

9. Sandepta Saha, Ashok Sasmal, Chirantan Roy Choudhury, Carlos J. Gomez-Garcia, Eugenio Garribba, Samiran Mitra; A New Linear Double Phenoxo-Bridged Trinuclear Cu(II) Schiff Base Complex: Synthesis, Crystallographic Elucidation, Magneto-structural Correlation and DFT Study, *Polyhedron*, 2014, 69, 262-269. (Impact Factor-3.052)

10. Ashok Sasmal, Sandepta Saha, Carlos J. Gómez-García, Cédric Desplanches, Eugenio Garribba, Antonio Bauzá, Antonio Frontera, Reum Scott, Ray J. Butcher and Samiran Mitra; Reversible switching of the electronic ground state in a pentacoordinated Cu(II) complex, *Chemical Communication*, 2013, 49, 7806–7808. (Impact Factor-6.222)

11. Sandepta Saha, Ashok Sasmal, Guillaume Pilet, Antonio Bauzá, Antonio Frontera and Samiran Mitra; An unusual nitroso...nitroso interaction in the coordination polymer structures of Ni(II) and Co(II) complexes with the α,ω -bis(benzotriazoloxo)alkane system., *CrystEngComm*, 2013, 16, 654-666. (Impact Factor-3.545)

12. **Ashok Sasmal**, Shyamapada Shit, Corrado Rizzoli, Hongfeng Wang, Cédric Desplanches and Samiran Mitra; Framework Solids Based on Copper(II) Halides (Cl/Br) and Methylene-Bridged Bis(1-hydroxybenzotriazole): Synthesis, Crystal Structures, Magneto-Structural Correlation, and Density Functional Theory (DFT) Studies, *Inorganic Chemistry*, 2012, 51, 10148–10157. (Impact Factor-5.165)
13. Pritha Talukder, Shyamapada Shit, **Ashok Sasmal**, Stuart R. Batten, Boujemaa Moubaraki, Keith S. Murray, Samiran Mitra; An antiferromagnetically coupled hexanuclear copper(II) Schiff base complex containing phenoxo and dicyanamido bridges: Structural aspects and magnetic properties, *Polyhedron*, 2011, 30, 1767-1773. (Impact Factor-3.052)