

Sayan Saha

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Objective

For the purpose of applying for **Summer Internship**

Summary of Qualifications

- Meticulous researcher with five years of experience in synthetic organic and inorganic chemistry
- Impressive academic record with knowledge in diverse fields of chemistry and laboratory skills
- Experienced in working in both independent and collaborative projects along with mentoring proficiency and leadership quality in academic research
- Exhibited research acumen via publication in peer reviewed journal and conference presentation

Education

- **Texas A&M University, College Station, TX, USA** **August 2018**
Ph.D. in Chemistry (Area of Research: Anticancer Metallodrugs in Photodynamic Therapy) **GPA: 3.80/4.00**
- **Indian Institute of Technology (IIT) Kanpur, Kanpur, India** **June 2012**
Master of Science in Chemistry **GPA: 9.00/10.00**
- **Presidency College (affiliated with the University of Calcutta), Kolkata, India** **July 2010**
Bachelor of Science (with Honors) in Chemistry **Percentage: 71.0%**

Research Experience

Texas A&M University, College Station, TX, USA

[August 2013 – Present]

Graduate Research Assistant, Department of Chemistry

Advisor: **Prof. Kim R. Dunbar** (Distinguished Professor of Chemistry, Texas A&M University)

- Design and synthesis of ruthenium and dirhodium based anticancer metallodrugs for their potential applications in Photodynamic Therapy (PDT)
- Project involves multi-step synthesis, purification, characterization and optimization of compounds
- Study of photophysical properties in collaboration with **Department of Chemistry, Ohio State University** and cellular cytotoxicity study in collaboration with **Department of Biochemistry and Biophysics, Texas A&M University**
- Mentoring junior graduate students, undergraduate student and Full Bright Scholar, familiarizing them with synthetic techniques, lab equipments and safety protocols
- Managing group solvent skills and instrumentations (UV-Vis spectrophotometer, Rotovap)

Indian Institute of Technology (IIT) Kanpur, Kanpur, India

[November 2012 – May 2013]

Project Associate, Department of Chemistry

Advisor: **Prof. R. N. Mukherjee** (Professor of Chemistry, IIT Kanpur and presently Director, IISER Kolkata)

- Design and structural characterization of transition metal coordination polymers
- Engaged in the measurements of room temperature magnetic susceptibility of the compounds

Indian Institute of Technology (IIT) Kanpur, Kanpur, India

[December 2011 – April 2012]

Project Student (for the completion of **Master's Project**), Department of Chemistry

Advisor: **Prof. R. N. Mukherjee** (Professor of Chemistry, IIT Kanpur and presently Director, IISER Kolkata)

Project Title: **"Discrete Centrosymmetric Co(II)-tetramer using (2-pyridyl)alkylamine-appended Caboxylate-based Chelating Ligand"**

Indian Institute of Science Education & Research (IISER), Mohali, India

[May 2011 – July 2011]

Summer Research Fellow, Department of Chemistry

Advisor: **Dr. Sanjay Mandal** (Professor of Chemistry, IISER Mohali)

Project Title: **"Use of C-C & C-N Bond Forming Reactions: Synthesis, Isolation & Spectroscopic Characterization of Several Organic Ligands and Selected Metal Complexes"**

Publication, Abstract and Presentation

- Peña, B.; Saha, S.; Barhoumi, R.; Dunbar, K. R. **"Apoptosis-inducing Properties of Ruthenium(II) Polypyridyl Complexes with Anionic N⁴O Ancillary Ligands"** in preparation.
- Saha, S.; Coll, R. P.; Fillman, K. L.; Pellois, J. P.; Turro, C.; Dunbar, K. R. **"Photoreleasing caged molecules containing nitrile functionality from Ru(II) complexes of the bulky 6-phenyl-2,2'-bipyridine ligand"** Abstract accepted for an Oral Presentation at the **253rd ACS National Meeting & Exposition**, San Francisco, CA, USA, 2017.
- Saha, S.; Coll, R. P.; Fillman, K. L.; Pellois, J. P.; Turro, C.; Dunbar, K. R. **"Enhancement of phototoxicity through efficient ligand photodissociation from Ru(II) complexes of the bulky 6-phenyl-2,2'-bipyridine ligand"** Oral Presentation at the **72nd Annual Southwest Regional Meeting (SWRM)**, Galveston, TX, USA, 2016.
- Saha, S.; Peña, B.; Albani, B. A.; Turro, C.; Dunbar, K. R. **"Shifting the ¹MLCT Absorption into the Therapeutic Window by Bridging Two Ru(II)-centers using Quinoxaline and Pyrazine Based Bridging Ligands"** Poster Presentation at the **BASF-TAMU Graduate Student Symposium**, Texas A&M University, August 10, 2016 and the **A. E. Martell Symposium**, Texas A&M University, October 14, 2016.
- Saha, S.; Peña, B.; David, A.; Turro, C.; Dunbar, K. R. **"Ruthenium and rhodium based anticancer compounds with diimine ligands"**, Abstract submitted for an invited talk of Prof. Kim R. Dunbar at the **251st ACS National Meeting & Exposition**, San Diego, CA, USA, 2016.
- Albani, B. A.; Peña, B.; Saha, S.; White, J. K.; Schaeffer, A. M.; Dunbar, K. R.; Turro, C. **"A dinuclear Ru(II) complex capable of photoinduced ligand exchange at both metal centers"** *Chem. Commun.* **2015**, 51, 16522–16525.
- Saha, S.; Peña, B.; Albani, B. A.; Turro, C.; Dunbar, K. R. **"Synthesis, characterization, and photochemical studies of solvated dinuclear Ru(II) compounds with quinoxaline and pyrazine based bridging ligands"**, Poster Presentation at the **249th ACS National Meeting & Exposition**, Denver, CO, USA, 2015.

Skills

- Proficient in working with glove box and Schlenk techniques along with hands-on experience with X-ray diffractometer, electrochemistry and confocal microscopy
- Experienced handling NMR, CV, UV-Vis and IR spectrophotometer
- Trained with computational skills to optimize structures using Gaussian 09
- Extensive experience using scientific databases like SciFinder, CCDC
- Highly skilled in organizing scientific record keeping and work in compliance to safety regulations for storage and handling of toxic, hazardous, and corrosive chemicals
- Efficient in data analysis and computational software such as MestreNova, ChemBioDraw Ultra, AMPAC AGUI, Molden, APEX, Mercury, XSeed, Diamond, Microsoft Office, EndNote etc.
- Trained to work independently in a highly collaborative project with good presentation skills along with teaching and mentoring experience
- Language Proficiency: English (Fluent), Bengali (Native), Hindi

Professional and Scholastic Affiliations/Awards

- Awarded the **Eastman Travel Award Fellowship-Spring 2017** from the Department of Chemistry, Texas A&M University
- Awarded the prestigious **"IASc-INSANA Summer Research Fellowship-2011"** by the *Indian Academy of Science* for summer research project at *Indian Institute of Science Education & Research (IISER) Mohali*
- Awarded **"Innovation in Science and Pursuit for Inspired Research (INSPIRE) Scholarship-2007"** for Higher Education (B.Sc. & M.Sc.) by the *Department of Science & Technology, Government of India*
- Member of **Phi Lambda Upsilon (PLU)**, the honorary chemical society and **Organization for Cultural Diversity in Chemistry (OCDC)** at Department of Chemistry, Texas A&M University
- Member of the **American Chemical Society**; Division of Inorganic Chemistry

Academic Achievements

- Secured **All India Rank-45** under CSIR category (out of 1054 ranks) in the **Joint CSIR-UGC National Eligibility Test (NET) Examination, June-2012** in Chemical Science
- Secured **All India Rank-72** (out of 8925 candidates) in the **Graduate Aptitude Test in engineering (GATE), 2012** in Chemistry

- Secured **All India Rank-24** (out of 2693 candidates) in the **Joint Admission Test for M.Sc. (JAM), 2010** in Chemistry
- Secured **All India Rank-660** in the **8th National Science Olympiad**

Leadership and Activities

- **Teaching Assistant** for 2.5 years teaching general chemistry lab courses (**CHEM 111/112**) and organic chemistry lab course (**CHEM 237/238**)
- Served as a **Departmental Mentor** for **GVW** and **Incoming Graduate Student Mentor Program** (2015-2016)
- Volunteered for numerous **Departmental** and **Organizational** outreach events and workshops (2014-2016)
- Served in the **Philanthropic Committee** for raising funds for the **Annual 5K Fun Run Event** organized by **PLU** (2015-2016)
- Serving as an **Outreach Coordinator** for **OCDC** (2016-2017)

Reference

References available upon request

Right to work: **F-1 visa**, eligible for **36 months** of post-graduation **Optional Practical Training (OPT)**

Extra-curricular Activities

- **Hobbies:** Philately, Numismatics, Singing
- Skillful in playing badminton, table-tennis, soccer, cricket