

Curriculum vitae

Personal information

Biva Talukdar

Nationality: Indian

Contact Information

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Academia Sinica, TIGP dorm,

Taipei, Taiwan.



Languages

- English (fluent)
- Assamese (native)
- Hindi (fluent)
- Mandarin (basic)

Research experience

Project (09/2014-08/2015)

- **Research title:** “Study of channel activity of membrane protein and the interaction of the channel protein with receptor”. Molecular dynamic simulation and protein-protein docking.
- **Experimental techniques:** Single ion channel recording.
- **Supervisor and University:** Prof. Dr. Wolfgang B. Fischer; National Yang-Ming University, Taipei, Taiwan.

Junior research fellowship project (04/2014-07/2014)

- **Research title:** “Determination of binding constant of imines with *ctDNA* and the study of kinetics of cleavage of *pUC-19 DNA* by imine compounds.
- **Experimental technique:** Fluorescence spectroscopy, gel electrophoresis, UV-Vis.
- **Supervisor and Institute:** Dr. Debasis Manna; Indian Institute of Technology-Guwahati, Assam, India, 781039



Master Thesis (02/2013-09/2013)

- **Thesis title:** “Synthesis, Structure determination, and study of magnetic and spectral properties of tetra nuclear and polymeric Copper complexes”.
- **Experimental techniques:** Single crystal X-ray diffraction, IR, UV-Vis, magnetic susceptibility, TGA.
- **Thesis supervisor and university:** Prof. Birinchi Kumar Das; Gauhati University, Assam, India, 781014.

Summer internship (05/2011-07/2011)

- **Thesis title:** “Synthesis of Schiff base, Cu-complexes with Schiff base and its Nitric oxide reactivity.”
- **Experimental techniques:** UV-Vis, IR, EPR, magnetic susceptibility, NMR, Mass-spectrometry.
- **Thesis supervisor and Institute:** Prof. Biplab Mondal; Department of Chemistry, Indian Institute of Chemistry- Guwahati, Assam, India, 781039.



Educational Qualification:

2011-2013

Master of Science (M.Sc) in Chemistry:

- **University:** Gauhati University, Assam, India.
- **Courses:** Organic chemistry, Inorganic Chemistry, Physical Chemistry, Quantum Chemistry, Spectroscopic and spectrometric methods.
- Secured **CGPA 9.12 out of 10**.
- 3rd rank holder in the university.

2008-2011

Bachelor of Science (B.Sc)

- B. Borooah College, Gauhati University, Assam, India.
- Courses: Organic chemistry, Physical Chemistry, Inorganic Chemistry, Quantum Chemistry, Spectroscopic and spectrometric methods, Environmental Chemistry.
- **Secured 80.08%**
- 1st rank holder in the university.



Academic achievements:

- Secured 1st rank in Bachelor of Chemistry examination 2011 under Gauhati University.
- Secured 3rd rank in Master of Chemistry in Gauhati university.
- Qualified National level Entrance examination for M.Sc admission to IIT (JAM 2011).
- Qualified National level Graduate aptitude test in Engineering (GATE) 2013, with 96%.
- Qualified National level Graduate aptitude test in Engineering (GATE) 2014.



Awards and scholarship:

- Received the UGC PG Merit scholarship 2011-2013 for securing 1st rank in Bachelor of Science.
- Received Anundoram borooah award 2008 for excellence in Junior High Examination.

Experimental and analytical skills:

Hands-on experience in following characterization instrument

- UV-Vis Spectrophotometer
- IR Spectrophotometer
- Magnetic Susceptibility balance
- Fluorometer
- BLM Workstation, Werner instruments
- GC-MS
- XRD

Experience in analysis of molecular recognition using

- NMR spectroscopy
- UV-Vis spectroscopy
- IR spectroscopy
- Mass spectrometry
- Single Crystal crystallography
- GC-MS
- XRD
- TEM
- SEM

Computer knowledge:

Software: Origin, ChemDraw, SPSPEAK41, GC MSD, EndNote

Microsoft office: Power point, Excel, Word,



Leadership activity: I was President of Optical Society of America student chapter, National Yang-Ming University (Sept 2014 to Aug 2015), Taipei, Taiwan.

Research thesis in detail

Project (09/2014-08/2015):

8a and S proteins of SARS virus were synthesized by solid state reaction by our collaborator. Ion channels were formed for 8a and S protein by flushing the protein on a bilayer of DOPC and POPE lipids and the current through the channels were measured by Warner instruments. The currents in the ion channels are studied by adding S protein on the bilayer with 8a protein to check interaction between these two proteins. Molecular dynamic simulation and protein-protein docking is also performed.

Junior research fellowship project (04/2014-07/2014):

Commercial *ctDNA* was purchased and I used imine compounds synthesized by my fellow organic synthetic chemists. I have studied the binding constant of this imine molecules and *ctDNA* to determine the binding constant using UV-Vis absorption titration. Moreover, the kinetics of cleavage of *pUC-19* DNA by these imine compounds is studied.

Master thesis project (02/2013-09/2013):

A yellow powder (I) from the residue and two different crystals $[\text{Cu}_4(\mu_4\text{-O})(\mu\text{-Cl})_6(4\text{-Etpy})_4]$, $[\text{Cu}(4\text{-Etpy})_2(\text{ClCH}_2\text{COO})_2]$ (II) and $[\text{CuCl}_2(4\text{-Etpy})_2]_n$ (III) were obtained from the filtrate of the reaction mixture, which was carried out by mixing $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$, $\text{ClCH}_2\text{CO}_2\text{Na}$ and

4-Etpy in 1:2:1 ratio in methanol at room temperature. Molecular and crystal structures of II and III were determined by single crystal X-ray diffraction technique. Suitable crystals of the compounds were obtained from the filtrate. The chosen crystals of suitable size were mounted on glass fibres for intensity data collection at room temperature using graphite mono-chromatized Mo-K α radiation (0.7107 Å) at 293 K on SMART APEX-2 Diffractometer. Crystal structures were solved by the direct method (SHELXS) and refined by full-matrix least squares techniques (SHELXL) with SHELX-97 using the WinGX platform available for personal computers.

Summer internship (05/2011-07/2011):

P-nitrobenzaldehyde and ethylene diamine are used to synthesize a Schiff base, and Cu-complexes are synthesized with the Schiff base. Consequently, nitric oxide reactivity of this complex is studied with the help of UV-Vis spectroscopy.



Personal skills

- Analytical skill
- Communication skill
- Leadership skill



Membership

Member of Optical Society of America



Interests

- Reading
- Swimming
- Teaching
- Shopping