

Name: Dr. Sk Najmul Islam

Assistant Professor
Dept. of Chemistry
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1. Permanent Address: S/O- SK SAIDUL ISLAM

Vill- Jagannathpur, P.O.- Bharatpur
District- Paschim Medinipur
West Bengal, India.
Pin No: 721156

2. Date of Birth: 8th February' 1988.

Sex: Male

Nationality: Indian.

Professional Experiences:

1. Assistant professor, Dept. of Chemistry, Centurion University of Technology and Management, Odisha (From August, 2019).
2. Research Scientist at TCG Lifesciences Pvt. Limited, Kolkata (August, 2018 – August, 2019)

Academic Qualification

- **PhD in Chemistry** *July, 2012 to May, 2018*
Department of Chemistry, *Indian Institute of Technology Kharagpur*, India.
Thesis Title: “*Synthesis and Characterization of Fluorene Based π -Conjugated Oligomers and Polymers for Optoelectronic and Sensory Applications*”.
Thesis Adviser: Dr. Sanjib K. Patra
- **Master of Science (M.Sc. in Chemistry)** *2012 (Year of Passing)*
Department of Chemistry, *Indian Institute of Technology Guwahati*, India
CPI: 8.84 out of 10
- **Bachelor of Science (B.Sc. in Chemistry)** *2009 (Year of Passing)*
Calcutta University, St Paul’s C.M College, West Bengal, India
Marks Obtained: 59.75%
- **Higher Secondary (10+2)** *2005 (Year of Passing)*
West Bengal Council of Higher Secondary Education
Marks Obtained: 70.8%
- **Secondary (10)** *2003 (Year of Passing)*
West Bengal Board of Secondary Education
Marks Obtained: 86%

Academic Distinction:

- Qualified CSIR-UGC-NET 2011 (JUNE) with AIR: UGC-80
- Qualified IIT JAM 2010 (test paper code: CY), with AIR: 148

Research Experiences:

Predoctoral:

1. **Summer Project:** Summer Internship at *Indian Institute of Technology, Guwahati*.

Supervisor : Dr. Gopal Das. Professor, Department of Chemistry.

Topic: Organometallic and Supramolecular Chemistry.

2. **M.Sc Project:** M.Sc Project at *Indian Institute of Technology, Guwahati*.

Supervisor: Dr. Biplab Mondal. Professor, Department of Chemistry.

Title: Nitric Oxide Reactivity of Cobalt Complex of N4O-Type Ligand:
Cobalt-Nitrosyl Complex.

Doctoral:

My research work for doctoral study is based on “**Synthesis and Characterization of Fluorene Based π -Conjugated Oligomers and Polymers for Optoelectronic and Sensory Applications**”. I carried out my doctoral research work under the guidance of **Dr. Sanjib K. Patra** in the department of Chemistry, **Indian Institute of Technology Kharagpur**.

Doctoral Research Area:

- Synthesis and Characterization of Main Chain π -Conjugated Organometallic Oligomers and Polymers for Emerging Application in Optoelectronic Devices.
- Synthesis, Characterization and Application of Luminescent π -Conjugated polymers.
- Synthesis of Conductive π -Conjugated *p*-type and *n*-type Polymers for all Polymer Solar Cells.

Publications

Manuscript Published

1. **S. N. Islam**, A. Sil and S. K. Patra*, Achieving Yellow Emission by Varying Donor/Acceptor Units in Rod-shaped Fluorenyl-alkynyl Based π -Conjugated Oligomers and Their Binuclear Gold(I) Alkynyl Complexes. *Dalton Trans.*, **2017**, 46, 5918-5929.
2. A. Sil, **S. N. Islam** and S. K. Patra*, Terpyridyl Appended Poly(metaphenylene-*alt*-fluorene) π -Conjugated Fluorescent Polymers: Highly Selective and Sensitive *turn off* Probes for the Detection of Cu^{2+} . *Sensors & Actuators: B. Chemical*, **2018**, 254, 618-628.
3. D. Giri, **S. N. Islam** and S. K. Patra*, Synthesis and characterization of 1,2,3-triazole appended polythiophene based reusable fluorescent probe for the efficient detection of trace nitroaromatics. *Polymer* **2018**, 134, 242-253.
4. **S. N. Islam**, N. Gogurla, D. Giri, S. K. Ray* and S. K. Patra*, Highly Emissive Fluorene and Thiophene Based π -Conjugated A-*alt*-B Copolymers: Synthesis, Characterization and Electroluminescence Properties. *Journal of Luminescence* **2019**, 208, 509-518.

Manuscript Submitted/ in Preparation

1. **S. N. Islam** and S. K. Patra*, Fluorenyl-alkynyl Au(I)/Pt(II) phosphorescent organometallic wires: Synthesis, characterization and tuning emission wavelength by varying the arene bridge. *Manuscript submitted*.
2. **S. N. Islam**, D. Giri and S. K. Patra*, Design and synthesis of 1,2,3-triazole functionalized polyfluorene for trace detection of nitroaromatics (NACs). *Manuscript in preparation*.
3. **S. N. Islam**, D. Giri and S. K. Patra*, Synthesis and characterization of fluorenyl-alkynyl and perylene diimide π -conjugated copolymers as *non-fullerene* acceptor materials. *Manuscript in preparation*.

Work Presented in Conferences

1. S. S. Roy, **S. N. Islam**, A. Sil and S. K. Patra*, Organometallic Molecular Wires with π -Conjugated Organic Bridges. Symposium on Modern Trends in Inorganic Chemistry (MTIC XVI), 3rd-5th December, 2015 held at Jadavpur University.

2. **S. N. Islam**, A. Sil and S. K. Patra*, Achieving Yellow Emission by Varying Donor/Acceptor Units in Rod-shaped Fluorenyl-alkynyl Based π -Conjugated Oligomers and Their Binuclear Gold(I) Alkynyl Complexes. 20th **CRSI** National Symposium in Chemistry, 3rd-5th February, 2017 held at Gauhati University.

Research Skills:**General:**

- Experience in Synthesis of Organic and Organometallic Oligomers and Polymers under Inert Atmosphere using Schlenk Technique and Purification of the Organometallic Compounds under Inert Atmosphere.
- Experience in Isolation and Purification of Organic Compounds by TLC, Column Chromatography and Crystallization during the research works.
- Hands-on Experience in NMR (¹H, ¹³C, ³¹P and ¹⁹F), UV/Vis/NIR, Fluorescence, Time-resolved Fluorescence, Cyclic Voltammetry and Mass Spectrometry.
- Hands-on Experience in Tetradetector Gel Permeation Chromatography (GPC), Atomic Force Microscopy (AFM), Thermal Analyses (TGA/DSC) and Dynamic Light Scattering (DLS) for Characterization of the Synthesized Polymers.
- Experience in Design and Fabrication of Devices Based on Solar Cells and OLEDs.

Instruments Known:

1. Operation of 200 MHz NMR Instrument.
2. Operation of Solar Simulator, Tetra Detector GPC, AFM, DSC, Cyclic Voltammetry (CV).
3. Operation of UV-Visible Spectrophotometer and Fluorescence Spectrophotometer.

Teaching Experience:

- Post Graduate Advanced Inorganic Practical Course (CY49011) in the year 2012-2013 at IIT Kharagpur.

- 1st year Under Graduate Inorganic Practical Course (CY19001) in the year 2013-2014 at IIT Kharagpur.
- Under graduate Inorganic Chemistry theoretical class (tutorial) (CY11001), in the year 2014-2015 at IIT Kharagpur.

Extra-Curricular Activities:

1. National Cadet Corps ('A' certificate qualified).
2. Selected as Sports Secretary in B. C. Roy Hall of Residence in the year of 2103-2014, IIT Kharagpur.
3. Selected as Mess Committee Member in B. C. Roy Hall of Residence in the year of 2104-2015, IIT Kharagpur.

Reference:**Dr. Sanjib K. Patra**

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Declaration

I hereby declare that the above statements are complete and true to the best of my knowledge.

Yours truly,

Place: IIT Kharagpur

Date:

Sk Najmul Islam