



Purnandhu Bose, PhD

Postdoctoral Researcher

Indian Institute of Science (IISc), India

National Institute for Materials Science (NIMS), Japan &

Nanyang Technological University (NTU), Singapore

Contact: (+91)-7003856031

E-mail: bosepurnendu07@gmail.com

Skype ID: [purnandhu.bose1](#)

PROFESSIONAL KEYWORDS

- Organic/Inorganic materials synthesis
- Solid supported synthesis techniques
- Peptide chemistry & nano-biomaterials
- Inorganic-Organic hybrid nano-materials
- Self-assembly
- Supramolecular Chemistry
- Molecular recognition, sensing and extraction

CAREER OBJECTIVE

I wish to continue my career as a scientist in interdisciplinary area of organic/inorganic materials chemistry. Rigorous training in design, synthesis and utilization of various characterization techniques in both Ph.D. and postdoctoral research motivated me to explore this field. Seeking a challenging position in an innovative work place where my vision, expertise, enthusiasm and responsibility would flourish to the progress of company's goals as well as my career development.

WORK EXPERIENCES

- **Postdoctoral Research Associate**

a) Indian Institute of Research (IISc), India (11/2017–03/2019): 1 year 4 months

b) National Institute for Materials Science, Japan (04/2015–03/2017): 2 years 0 months

c) Nanyang Technological University, Singapore (07/2013–02/2015): 1 year 8 months

EDUCATION

- **PhD (Chemistry) (07/2007–02/2013): Indian Association for the Cultivation of Science (IACS), India.**

Thesis title: "Development of receptors for sensing of fluoride, acetate and phosphate: recognition and selectivity studies". (Supervisor: Prof. Pradyut Ghosh)

- **MSc (Chemistry) (2006): 1st class (69.0% marks), The University of Calcutta, West Bengal, India**

- **BSc (Chemistry) (2004): 1st class (62.6% marks), The University of Calcutta, West Bengal, India**

- **(10+2) standard (Science Subjects and Languages) (2001): 1st division (72.3% marks), West Bengal Council of Higher Secondary Education, West Bengal, India**

- **10th standard (All Subjects) (1999): 1st division (76.9% marks), West Bengal Board of Secondary Education, West Bengal, India**

TECHNICAL PROFICIENCY & SKILLS

- Synthesis (Organic and Inorganic materials)
- Solid supported peptide synthesis
- NMR spectroscopy
- MALDI/ESI mass spectrometry
- UV-Vis-NIR spectroscopy
- Fluorescence spectroscopy
- Infrared and Raman spectroscopy
- Circular Dichroism (CD) spectroscopy
- Gel permeation chromatography (GPC)
- High-performance liquid chromatography (HPLC)
- TEM, SEM and AFM
- Isothermal Titration Calorimetry (ITC)
- Powder X-Ray Diffraction (PXRD)
- Single Crystal X-Ray Diffraction (SCXRD)
- Brunauer-Emmett-Teller (BET) surface analyser
- Thermogravimetric analysis (TGA)
- Polarized optical microscopy (POM)
- Schlenk line handling
- Crystal structure refinement and solution

COMMUNICATION & COMPUTER SKILLS

- Strong oral and written communication skills.
- Presented scientific-posters in national and international conferences.
- Actively involved and worked in a group together with national and international scientific research collaborations from various research groups.
- Taught, trained and guided *master* and *PhD students* and inspired them to the importance of cutting edge research.
- Comprehensive knowledge of SciFinder, MestReNova, SHELXTL, Olex2, Mercury, MS Office, ChemDraw, Origin, Photoshop Elements, and others.

AWARDS & ACHIEVEMENTS

- ***“Postdoctoral Research Fellowship”*** in ***Indian Institute of Science, Bangalore*** (2017–2019).
- ***“Postdoctoral Research Fellowship”*** in ***National Institute for Materials Science, Japan*** (2015–2017).
- ***“Postdoctoral Research Fellowship”*** in ***Nanyang Technological University, Singapore*** (2013–2017).
- Awarded ***“Junior Research Fellowship (JRF)”*** (2007–2009) by the Council of Scientific and Industrial Research (CSIR), Govt. of India, New Delhi, India.
- Awarded ***“Senior Research Fellowship (SRF)”*** (2009–2012) by the Council of Scientific and Industrial Research (CSIR), Govt. of India, New Delhi, India.
- Qualified ***“CSIR-UGC National Eligibility Test (NET)”*** held on Dec’2006.
- Qualified ***“CSIR-UGC National Eligibility Test (NET)”*** held on June’2007.
- Qualified in all India level ***“Graduate Aptitude Test in Engineering (GATE)”*** in Chemistry in 2007 with All India Rank **179**.

PERSONAL INFORMATION

- **Nationality:** Indian
- **Date of Birth:** 15th January, 1983
- **Place of Birth:** Kolkata, West Bengal, India
- **Gender:** Male
- **Marital Status:** Married
- **Languages Known:** English, Hindi & Bengali

LIST OF PUBLICATIONS

- Publication Matrix (https://scholar.google.com/citations?user=V_WNi8YAAAAJ&hl=en&oi=ao)
- Total Papers Published: 20 (10 as a First Author)
- Total Citations: 379 h-index: 10 i10index: 10

1. **Purnandhu Bose**, Toshiaki Takei, Xianglan Li, Takashi Minowa, Rajamani Rajmohan, Pothiappan Vairaprakash and Kentaro Tashiro; *A Glutathione-Responsive Short Sequence of Metal-Organic Complex Array*; **ChemBioChem**, 2018, 19, 1706-1710. (Selected as Cover Feature)(Impact Factor: 2.593, Citation: 0)
2. Linyi Bai, **Purnandhu Bose**, Qiang Gao, Li Yongxin, Rakesh Ganguly and Yanli Zhao; *Halogen-Assisted Piezochromic Supramolecular Assemblies for Versatile Haptic Memory*; **J. Am. Chem. Soc.**, 2017, 139, 436-441. (Impact Factor: 14.695, Citation: 64)
3. **Purnandhu Bose**, Pradip K. Sukul, Omar M. Yaghi and Kentaro Tashiro; *Synthesis of a Water-Soluble Metal-Organic Complex Array*; **Journal of Visualized Experiments**, 2016, e54513-e54513. (Impact Factor: 1.184, Citation: 0)
<https://www.youtube.com/watch?v=LO97zgXdD2A>
4. Pradip K. Sukul, **Purnandhu Bose**, Toshiaki Takei, Omar M. Yaghi, Ying He, Myongsoo Lee and Kentaro Tashiro; *A water-soluble metal-organic complex array as a multinuclear heterometallic peptide amphiphile that shows unconventional anion dependency in its self-assembly*; **Chem. Commun.**, 2016, 52, 1579-1581. (Impact Factor: 6.164, Citation: 8)
5. Linyi Bai, Li Juan Tou, Qiang Gao, **Purnandhu Bose** and Yanli Zhao; *Remarkable colorimetric sensing of heavy metal ions based on thiol-rich nanoframes*; **Chem. Commun.**, 2016, 52, 13691-13694. (Impact Factor: 6.164, Citation: 9)
6. **Purnandhu Bose**, Linyi Bai, Rakesh Ganguly, Ruqiang Zou and Yanli Zhao; *Rational Design and Synthesis of a Highly Porous Copper-Based Interpenetrated Metal Organic Framework for High CO₂ and H₂ Adsorption*; **ChemPlusChem**, 2015, 80, 1259-1266. (Selected as Frontispiece) (Impact Factor: 3.441, Citation: 6)
7. Linyi Bai, Peng Wang, **Purnandhu Bose**, Peizhou Li, Ruqiang Zou and Yanli Zhao; *Macroscopic Architecture of Charge Transfer-Induced Molecular Recognition from Electron-Rich Polymer Interpenetrated Porous Frameworks*; **ACS Appl. Mater. Interfaces**, 2015, 7, 5056-5060. (Impact Factor: 8.456, Citation: 30)
8. Linyi Bai, Qiang Gao, Youyi Xia, Chung Yen Ang, **Purnandhu Bose**, Si Yu Tan and Yanli Zhao; *The Photoirradiation Induced p-n Junction in Naphthylamine-Based Organic Photovoltaic Cells*; **Nanoscale**, 2015, 7, 14612-14617. (Impact Factor: 6.970, Citation: 6)
9. Linyi Bai, Xuyong Yang, Chung Yen Ang, Kim Truc Nguyen, Tao Ding, **Purnandhu Bose**, Qiang Gao, Amal Kumar Mandal, Xiao Wei Sun, Hilmi Volkan Demir and Yanli Zhao; *A quinoxaline based N-heteroacene interfacial layer for efficient hole-injection in quantum dot light-emitting diodes*; **Nanoscale**, 2015, 7, 11531-11535. (Impact Factor: 6.970, Citation: 10)
10. Ranjan Dutta, Sourav Chakraborty, **Purnandhu Bose** and Pradyut Ghosh; *Aerial CO₂ Trapped as CO₃²⁻ Ions in a Dimeric Capsule That Efficiently Extracts Sulfate and Thiosulfate from Water by Anion-Exchange Metathesis*; **Eur. J. Inorg. Chem.**, 2014, 4134-4143. (Impact Factor: 2.578, Citation: 10)
11. Sourav Chakraborty, M. Arunachalam and **Purnandhu Bose** and Pradyut Ghosh; *Binding Studies on an Arene-Capped Bicyclic Cyclophane with π -Rich Neutral Guests and Anions*; **Cryst. Growth Des.**, 2013, 13, 3208-3215. (Impact Factor: 4.153, Citation: 7)

12. Ranjan Dutta, Bijit Chowdhury, **Purnandhu Bose** and Pradyut Ghosh; *Neutral tripodal receptors towards efficient trapping of oxalate*; *J. Chem. Sci.*, 2014, 126, 1303-1309. (Impact Factor: 1.496, Citation: 0)
13. **Purnandhu Bose**, Ranjan Dutta and Pradyut Ghosh; *Tris(2-aminoethyl)amine based tripodal urea receptors for oxalate: Encapsulation of staggered vs. planar conformers*; *Org. Biomol. Chem.*, 2013, 11, 4581-4584. (Impact Factor: 3.490, Citation: 16)
14. Ranjan Dutta, **Purnandhu Bose** and Pradyut Ghosh; *Arsenate recognition in aqueous media by a simple tripodal urea*; *Dalton Trans.*, 2013, 42, 11371-11374. (Impact Factor: 4.052, Citation: 16)
15. **Purnandhu Bose**, Ranjan Dutta, Saikat Santra, Bijit Chowdhury and Pradyut Ghosh; *Combined Solution Phase, Solid Phase and Phase Interface Anion Binding and Extraction Studies by a Simple Tripodal Thiourea Receptor*; *Eur. J. Inorg. Chem.*, 2012, 5791-5801. (Impact Factor: 2.578, Citation: 23)
16. **Purnandhu Bose**, I. Ravikumar, Bidyut Akhuli and Pradyut Ghosh; *A Series of Amino Acid Functionalized Tripodal Hexa-Amide Anion Receptors: Ion-Pair Assisted Capped-Cleft Formation by Pentafluorophenyl Fuctionalized Amide*; *Chemistry-An Asian Journal*, 2012, 7, 2373-2380. (Impact Factor: 3.698, Citation: 7)
17. **Purnandhu Bose**, I. Ravikumar and Pradyut Ghosh; *Anion Binding in the C_{3v} -Symmetric Cavity of a Protonated Tripodal Amine Receptor: Potentiometric and Single Crystal X-ray Studies*; *Inorg. Chem.*, 2011, 50, 10693-10702. (Impact Factor: 4.850, Citation: 16)
18. **Purnandhu Bose**, B. Nisar Ahamed and Pradyut Ghosh; *Functionalized Guanidinium Chloride Based Colourimetric Sensors for Fluoride and Acetate: Single Crystal X-ray Structural Evidence of –NH Deprotonation and Complexation*; *Org. Biomol. Chem.*, 2011, 9, 1972-1979. (Impact Factor: 3.490, Citation: 44)
19. **Purnandhu Bose**, Ranjan Dutta, I. Ravikumar and Pradyut Ghosh; *Optical Detection of Sodium Salts of Fluoride, Acetate and Phosphate by a Diacylhydrazine Ligand via the Formation of a Colour Alkali Metal Complex*; *J. Chem. Sci.*, 2011, 123, 869-874. (Impact Factor: 1.496, Citation: 3)
20. **Purnandhu Bose** and Pradyut Ghosh; *Visible and near-infrared sensing of fluoride by indole conjugated urea/thiourea ligand*; *Chem. Commun.*, 2010, 46, 2962-2964. (Impact Factor: 6.164, Citation: 104)

CONFERENCES/SYMPOSIUM PARTICIPATED

1. **Purnandhu Bose**, I. Ravikumar and Pradyut Ghosh. "Anion Binding in the C_{3v} -Symmetric Cavity of a Protonated Tripodal Amine Receptor: Potentiometric and Single Crystal X-ray Studies". Published in the Proceeding of the "Modern Trends in Inorganic Chemistry -XIV" held at University of Hyderabad, India, during December, 10-13, 2011. (Poster Presentation)
2. **Purnandhu Bose**, B. Nisar Ahamed and Pradyut Ghosh. "Functionalized Guanidinium Chloride Based Colourimetric Sensors for Fluoride and Acetate: Single Crystal X-ray Structural Evidence of –NH Deprotonation and Complexation". Published in the Proceeding of the "International Symposium on Facets of Weak Interactions in Chemistry" held at University of Calcutta, Kolkata, India, during January, 13-15, 2011. (Poster Presentation)
3. **Purnandhu Bose** and Pradyut Ghosh. "Visible and near-infrared sensing of fluoride by indole conjugated urea/thiourea ligand". Published in the Proceeding of the "In-house symposium on IACS foundation day" held at Indian Association for the Cultivation of Science (IACS), Kolkata, July 29, 2009. (Poster Presentation)
4. Participation in the "International Symposium on Frontiers in Inorganic Chemistry (FIC-2010)" held at Indian Association for the Cultivation of Science (IACS), Kolkata, India, during December 11-13, 2010. (Volunteer)

PROFESSIONAL REFERENCES

1. Dr. Pradyut Ghosh (Ph.D. Advisor)

Designation: Professor

Department of Inorganic Chemistry, Indian Association for the Cultivation of Science

2A & 2B Raja S. C. Mullick Road, Kolkata 700032, India.

Phone: 03324734971 (Ext 1351)

E-mail: icpg@iacs.res.in

2. Dr. Partha Sarathi Mukherjee (Post-doctoral Advisor)

Designation: Professor

Inorganic and Physical Chemistry Department, Indian Institute of Science,

Bangalore-560012, Karnataka, India.

Phone: 918022933352

E-mail: psm@ipc.iisc.ernet.in