Purnandhu Bose, PhD

Former Postdoctoral Researcher
Indian Institute of Science (IISc), India
National Institute for Materials Science (NIMS), Japan &
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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 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: 394 h-index: 10 i10index: 11**

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: 73)**

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 unconvensional 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: 10)**

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 CO_2 and H_2 Adsorption*; ***ChemPlusChem***, 2015, 80, 1259-1266. **(Selected as Frontispiece) (Impact Factor: 3.441, Citation: 7)**

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: 12)**

10. Ranjan Dutta, Sourav Chakraborty, **Purnandhu Bose** and Pradyut Ghosh; *Aerial CO_2 Trapped as CO_3^{2-} 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: 11)**

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: 17)**

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: 17)**

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: 105)**

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.
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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