

**Dr. Sonali Roy,**  
**Incubation Manager**  
**National Institute of Pharmacological Education and Research, Guwahati**  
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## **ORGANISATIONAL EXPERIENCE**

- Incubation Manager, North-Eastern Societal aspect for Translational (NEST) Phytopharmaceutical/Herbal Research Incubation Centre. NIPER – Guwahati, India (July 2019 onward),
- Guest Faculty, Department of Zoology, Visva Bharati University, India (August 2018 to July 2019)
- Scientific Analyst, AssetPlus Consulting, NCR, INDIA (November 2017 onward)
- Founder Member and Director, Center for Nature Conservation and biosafety (CNCB), Odissa, India (December 2015 onward)
- DST Fast Track Young Scientist (July 2013 to October 2016) CSIR-North East Institute of Science and Technology, India
- Quick Hire Scientist (January 2010 to January 2013) CSIR-North East Institute of Science and Technology, India
- JSPS (Japan Society for the Promotion of Science) Post Doctoral Fellow (May 2007 to May 2009) University of Tokyo, JAPAN
- Research Associate (December 2004 to May 2007) Department of Zoology, Visva Bharati University, India

## **SCHOLASTICS**

- Ph. D - Life Science (Molecular Toxicology) from Visva Bharati University, Santiniketan, 2005.
- M. Sc (Zoology - Special Paper: Environmental Biology) from Visva Bharati University in 1998.

## **PROFESSIONAL COURSE**

- Certificate Courses on Intellectual Property Rights in Pharmaceutical R&D from FICCI

## **AREA OF INTEREST**

- Technology Commercialization
- Drug Development
- Cell and Molecular Signalling
- Molecular and Mechanistic Toxicology

## **RESEARCH PUBLICATION**

- Total number of publication: 29 - **Cumulative impact factor 45.94, Citations 484, h Index 10, i10 Index 10** (International Journal: 18, International Proceedings: 6, Chapter in Books: 4, Books as Sole Author 1)

## **PATENT**

- Production of blue emitting carbon dots from Indian coal. BK Saikia, T Das, S Roy, B Narzari, HP Deka Barua, MJ Bordoloi, J Lakhar, D Neog, D Ramaiah (Indian Application No. IN201711007354)
- A process for the preparation of blue-fluorescence emitting carbon dots (CDTS) from sub-bituminous tertiary high sulphur Indian coals. BK Saikia, T Das, S Roy, B Narzari, HP Deka Barua, MJ Bordoloi, J Lakhar, D Neog, D Ramaiah (US Application No. US 15/704,364)

## **PROFESSIONAL RECOGNITION/AWARDS**

- Visiting Scientist at The University of Tokyo with JSPS travel grant from November to December 2014.
- Post Doctoral Fellowship award from Japan Society for the Promotion of Science. Research implementation at Ocean Research Institute, The University of Tokyo from 2007 to 2009
- Life member of Indian JSPS Alumni Association (IJAA)
- Member of Indian National Science Congress

## **RESEARCH PROJECT**

- Completed **DST Fast Track Scheme for young scientist** Project Entitled “Correlation of cellular thiol balance and Oxidative/Hypoxic apoptosis in liver damage: Regulatory mechanism underlying de novo glutathione synthesis mediated by gcl gene expression”. Total cost Rs. 30 Lakh

## **EXPERIENCE WITH INNOVATION & START-UPS**

- **Centre For Nature Conservation & Biosafety Private Limited (CNCB)**  
(Co-founder & Director, incorporated since December 2015)

She joined as co-founder of a start-up, named ‘Centre For Nature Conservation & Biosafety Private Limited’ (CNCB), which was being established in Cuttack, Orissa, by an NRI Scientist from Norway. The aim was utilization of there scientific knowledge to enhance economic value of endemic bio-resources, and thereby encouraging the preservation of those species. They could develop a successful method of catfish breeding, and farming of the seedling was outsourced to some farmers.

- **AssetPlus Consultancy, Delhi**

M/s Asset Plus Consultancy, a Delhi based start-up in energy sector, was looking forward to expand into biotech sector, and had sought her consultancy in developing a prototype of fish breeding unit and production of Laboratory Grade Indigenous Fish seed. Now she is guiding their team for establishment of the prototype.

- **Sakriya - A business for organic farming & food processing**

Since 2018 she have been also associated with a group of farmers at Birbhum District, West Bengal, who practice organic farming, fruit processing and organic aquaculture

## **EXPERTISE ON TECHNIQUES**

- Maintenance of cell lines (cancer and normal epithelial) and bioassay
- Animal surgery such as partial hepatectomy
- Mammalian and Fish Cell Isolation and culture
- In Vivo and In Vitro Toxicity Bioassay

- ♦ Histology, Immunocytochemistry
- ♦ Tissue and cell fractionation
- ♦ Enzyme assays using spectrophotometer
- ♦ Chromatography (Protein Purification)
- ♦ Analytical HPLC
- ♦ Native, SDS and Gradient Gel Electrophoresis
- ♦ Acrylamide Gel Electrophoresis for Nucleic Acids
- ♦ Western blotting
- ♦ RIA (Radio Immuno Assay), ELISA
- ♦ Scintillation Counting
- ♦ In situ Hybridization
- ♦ Microscopy, Fluorescence Microscopy, immunofluorescence,
- ♦ Analysis of Transmission and scanning Electron Microscopy results
- ♦ DNA-transcription factor binding analysis (ChIP, EMSA)
- ♦ Northern blot PCR, RT-PCR, Real Time PCR
- ♦ PCR array and analysis
- ♦ Protein Structure Modelling
- ♦ Cloning and characterization, and functional analysis of gene

## LIST OF SELECTED PUBLICATIONS

1. **Sonali Roy\***, Bardwi Narzary, Atish Ray, MJ Bordoloi (2016). Arsenic induced instrumental genes of apoptotic signal amplification in death-survival interplay. **Cell Death and Discovery (A Nature Journal)**. Article number: 2, 16078; doi:10.1038/cddiscovery.2016.78 [Cited by 2]
2. **Sonali Roy** and Shelley Bhattacharya (2006). Arsenic induced histopathology and synthesis of stress proteins in liver and kidney of *Channa punctatus*. **Ecotoxicology and Environmental Safety**. 65/2: 218-229. https://doi.org/10.1016/j.ecoenv.2005.07.005 (IF: 4.527) [Cited by 153]
3. **Sonali Roy**, Asamanja Chatteraj and Shelley Bhattacharya (2006). Arsenic induced changes in optic tectal histoarchitecture and acetylcholinesterase-acetylcholine profile in *Channa punctatus*: Amelioration by selenium. **Comparative Biochemistry and Physiology**. 144/1: 16-24. https://doi.org/10.1016/j.cbpc.2006.04.018 (IF: 2.697) [Cited by 36]
4. Sulata Maity, **Sonali Roy**, Shelley Bhattacharya and Shibani Chowdhury (2008). Antioxidants in *Lampito mauritii* are the biomarkers of soil contamination by lead and zinc. **Environmental Pollution**. 151: 1-7. https://doi.org/10.1016/j.envpol.2007.03.005 (IF: 5.714) [Cited by 106]
5. Bobbi S. Stromer, **Sonali Roy**, Melissa R. Limbacher, Bardwi Narzary, Manobjyoti Bordoloi, Julia Waldman, Challa Vijaya Kumar (2018). Multicolored Protein Nanoparticles: Synthesis, Characterization, and Cell Uptake. **Bioconjugate Chemistry**. 29/8: 2576-2585 https://doi.org/10.1021/acs.bioconjchem.8b00282 (IF: 4.349) [Cited by 1]
6. Soumik Agarwal, **Sonali Roy**, Atish Ray, Shibnath Mazumder and Shelley Bhattacharya (2009). Arsenic trioxide and lead acetate induce apoptosis in adult rat hepatic stem cells. **Cell Biology and Toxicology**. 25: 403-413. https://doi.org/10.1007/s10565-008-9094-6 (IF: 5.097) [Cited by 46]
7. Jyotilima Saikia, Bardwi Narzary, **Sonali Roy**, Manob J Bordoloi, Prasenjit Saikia, Binoy K Saikia (2016). Nanominerals, fullerene aggregates, and hazardous elements in coal and coal combustion-generated aerosols: an environmental and toxicological assessment. **Chemosphere** 164:84-91; doi: 10.1016/j.chemosphere.2016.08.086. (IF: 5.108) [Cited by 18]
8. Kaoru Kubokawa, Yukiko Tando, **Sonali Roy** (2010). Evolution of the Reproductive Endocrine System in Chordates. **Integrative and Comparative Biology** 50 (1): 53-62. https://doi.org/10.1093/icb/icq047 (IF: 3.101) [Cited by 17]
9. Partha P Dutta, Manobjyoti Bordoloi, Kabita Gogoi, **Sonali Roy**, Bardwi Narzary, Dibya R Bhattacharyya, Pradyumna K Mohapatra, Bhaskar Mazumder (2017). Antimalarial silver and gold nanoparticles: Green synthesis, characterization and in vitro study. **Biomedicine & Pharmacotherapy** 91: 567-580 https://doi.org/10.1016/j.biopha.2017.04.032 (IF: 3.743)[Cited by 22]

10. MJ Bordoloi, S Saikia, B Kolita, R Sarmah, **S Roy** and B Narzary.(2018). Volatile Inhibitors of Phosphatidylinositol-3-Kinase (PI3K) Pathway: Anti-Cancer Potential of Aroma Compounds of Plant Essential. **Anti-Cancer Agents in Medicinal Chemistry** 18: 87-109  
**DOI** : 10.2174/1871520617666170327105706 (IF: 2.18) [\[Cited by 3\]](#)

#### **PERMANANT ADDRESS**

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