

## Curriculum Vitae (Dr Sadhucharan Mallick)

### Current position:

**DR SADHUCHARAN MALLICK**  
ASSISTANT PROFESSOR  
DEPARTMENT OF CHEMISTRY  
INDIRA GANDHI NATIONAL TRIBAL UNIVERSITY  
AMARKANTAK-484887, M. P., INDIA  
MOB. NO.: +917024923070, +918582011355,  
E-mail: [sadhu.iitd@gmail.com](mailto:sadhu.iitd@gmail.com), [Sadhucharan@igntu.ac.in](mailto:Sadhucharan@igntu.ac.in)



### Academic Background & Teaching Experience:

**22-05-2017 – Till date:** Assistant Professor, Dept. of Chemistry, INGTU, Amarkantak – 484887, M.P. India  
**26<sup>th</sup> Aug 2013– 19<sup>th</sup> May 2017:** Assistant Professor, Centre for Applied Chemistry, Central University of Jharkhand, Brambe, Ranchi.  
**2007– 2013** PhD in Chemistry at Indian Institute of Technology Guwahati, Assam, India. Guwahati-781039  
Thesis title: Metal Nanoparticle and Polymer Composites for Antimicrobial Applications  
**2005–2007:** Master of Science in Chemistry from Indian Institute of Technology Delhi, Delhi, India.

### Honours and Awards

- (1) Qualified Joint Admission Test to M.Sc. (JAM 2005)
- (2) Qualified JRF-NET (National Eligibility Test) held in June 2007, Conducted by Council of Scientific and Industrial Research, Govt. of India.
- (3) Qualified 'Graduate Aptitude Test in Engineering (GATE– 2007)' in Chemistry.
- (4) Awarded 'Best poster award on 12th CRSI National Symposium in Chemistry held at Indian institute of chemical Technology, Hyderabad during 5-7 Feb, 2010. Poster presented on Antimicrobial iodine doped silver nanoparticle –chitosan composite

### *Research Interest: Materials science*

- (1) **Synthesis and characterization of metal nanoparticle:** Development of novel methods to synthesize silver, copper and their bimetallic nanoparticles which is stable at normal atmospheric conditions.
- (2) **Synthesis of metal Nanoparticle- polymer composite materials:** Development of new method to prepare chitosan supported transition and noble metal nanoparticle composite synthesis.
- (3) **Understanding role of surface atom to stabilize metal nanoparticle composites.**
- (4) **Biological activity study:** Bacteria are unlikely to develop resistance to metal nanoparticles. We have studied bactericidal activity of iodine doped silver nanoparticle and copper nanoparticle chitosan composites. We are also interested to investigate the cytotoxicity effect of iodinated CS-Cu NP composite on mammalian cells. We would also investigate the molecular mechanism of copper nanoparticle mediated cytotoxicity, in both cancer and non-cancerous cells, so that the potential of the composite as anticancer agent can be evaluated.

### Publications

- (1) Heightened reactive oxygen species generation in the antimicrobial activity of a three component iodinated chitosan-Ag nanoparticle composite. Madhuchanda Banerjee, Sadhucharan Mallick, Anumita Paul, Arun Chattopadhyay, and Siddhartha Sankar Ghosh composite *Langmuir* **2010**, 26(8), 5901–5908. (69 citations)
- (2) Iodine - Stabilized Cu Nanoparticle Chitosan Composite for Antibacterial applications Sadhucharan Mallick, Shilpa Sharma, Madhuchanda Banerjee, Siddhartha Sankar Ghosh, Arun Chattopadhyay, and Anumita Paul *ACS Appl. Mater. Interfaces*, **2012**, 4(3), 1313–1323 (44 citations)
- (3) Synthesis, Characterization and enhanced Bactericidal action of a Chitosan supported Core-shell Copper-Silver Nanoparticle Composite. Sadhucharan Mallick, Pallab Sanpui, Siddhartha Sankar Ghosh, Arun Chattopadhyay, and Anumita Paul, *RSC Advances* **2015**, 5 12268-12276 (06 citations)

### Technical Exposures

**Analytical Techniques:** Interpretation of spectroscopic data (XRD, AAS, Flow Cytometer. UV-Vis spectrophotometer, fluorescence spectrophotometer, FT-IR, Dynamic light scattering (DLS) for characterization of unknown compounds. Hands on experience in UV-VIS Spectrometer, Powder X-ray diffractometer, Atomic absorption spectrophotometer, fluorescence spectrophotometer.

**Synthetic Skills:** Synthesis of metal nanoparticle, metal nanoparticle-polymer composite (micro-/nano materials) and biological activity studies.