CURRICULUM VITAE

DR. SAMIR MANDAL (M.Sc & Ph.D)
Assistant Professor (Stage-I)
Department of Chemistry
Sovarani Memorial College
Jagatballavpur, Howrah
India, Pin - 711408
E-mail: samirchem@smc.edu.in
WEB: https://scholar.google.com/citations?user=bFfOfHwAAAAJ&hl=en

AWARDS / HONORS

1) **Assistant Professor (Stage-I)** at Sovarani Memorial College, 10th January, 2022 to Present
2) **RA** (Research Associate) at CSIR-IICB, 1st February, 2014 to 31st January, 2017.
3) **SRF** (Senior Research Fellow), at CSIR-IICB, 1st January, 2011 to 31st December, 2013.
4) **JRF** (Junior Research Fellow) at CSIR-IICB, 1st January, 2009 to 31st December, 2010.
5) Qualified in **NET** (National Eligibility Test), CSIR-UGC, India, December-2008.
6) Qualified in **NET** (National Eligibility Test), CSIR-UGC, India, June-2008.
7) Qualified in **NET** (National Eligibility Test), CSIR-UGC, India, December-2007.

WORK EXPERIENCES / ACADEMIC ACHIEVEMENTS

- **10th January, 2022 to Present:** Worked as an Assistant Professor at the Department of Chemistry at Sovarani Memorial College, Jagatballavpur, Howrah, West Bengal, India, PIN-711408.
- **30th August, 2017 to 10th August, 2020:** Working as a Guest Faculty at the Department of School of Mines & Metallurgy at Kazi Nazrul University, Kalla, Asansol, West Bengal, India, PIN-713340.
- **30th August, 2017 to 29th March, 2019:** Worked as a Guest Faculty at the Department of Chemistry at Kazi Nazrul University, Kalla, Asansol, West Bengal, India, PIN-713340.
- **22nd August, 2017 to 09th September, 2019:** Worked as a Guest Faculty at the Department of Chemistry at Behala College, Parnashree, Kolkata, West Bengal, India, PIN-700060.
- **1st February, 2014 – 31st January, 2017:** Working as a Research Associate on a project entitled "Identification of risk genotypes and biomarkers associated with precancerous oral submucose fibrosis and response to treatment" at CSIR-Indian Institute of chemical Biology, Kolkata-700032, India.
- **1st January, 2009 – 31st December, 2013:** Ph.D. in Science for the thesis entitled "Synthesis and characterization of different types of nanoparticles and their applications" at CSIR-Indian Institute of Chemical Biology, Kolkata, India. (Under Jadavpur University)
- **2006 – 2008:** Completed Masters in Chemistry (***Organic Chemistry Specialization***) from Scottish Church College, affiliated to The University of Calcutta, India.

PEER-REVIEWED PUBLICATIONS

1. Moupiya Ghosh, Sayantan Pradhan, **Samir Mandal**, Anindita Roy, Subhendu Chakrabarty, Gopal Chakrabarti, Swapan Kumar Pradhan, "Enhanced antibacterial activity of a novel protein-arginine deiminase type-4 (PADI4) inhibitor after conjugation with a biocompatible nanocarrier", ***Journal of Drug Delivery Science and Technology***, *74 (2022) 103549.[ISSN: 1773-2247,* ***IF: 5.062]***

2. Moupiya Ghosh, **Samir Mandal**, Anindita Roy, Priyajit Mondal, Subhra Kanti Mukhopadhyay, Subhendu Chakrabarty, Gopal Chakrabarti, S.K. Pradhan, "Synthesis and characterization of a novel nanocarrier for biocompatible targeting of an antibacterial therapeutic agent with enhanced activity", ***Journal of Drug Delivery Science and Technology***, *66 (2021) 102821.[ISSN: 1773-2247,* ***IF: 5.062]***

3. Moupiya Ghosh, **Samir Mandal**, Anindita Roy, Ankush Paladhi, Priyajit Mondal, Sumit Kumar Hira, Subhra Kanti Mukhopadhyay, Swapan Kumar Pradhan, "Synthesis and characterization of a novel drug conjugated copper-silver-titanium oxide nanocomposite with enhanced antibacterial activity", ***Journal of Drug Delivery Science and Technology***, *62 (2021) 102384.[ISSN: 1773-2247,* ***IF: 5.062]***

4. Moupiya Ghosh, **Samir Mandal**, Sumana Dutta, Ankush Paladhi, Sanjib Ray, Sumit Kumar Hira and Swapan Kumar Pradhan, "Synthesis of drug conjugated magnetic nanocomposite with enhanced hypoglycemic effects", ***Materials Science & Engineering C***, *120 (2021) 111697.* ***[****ISSN: 0928-4931,* ***IF: 7.328]***

5. Moupiya Ghosh, Moumita Mondal, **Samir Mandal**, Anindita Roy, Subhendu Chakrabarty, Gopal Chakrabarti and Swapan Kumar Pradhan, "Enhanced photocatalytic and antibacterial activities of mechanosynthesized TiO_2-Ag nanocomposite in wastewater treatment", ***Journal of Molecular Structure***, *1211 (2020) 128076.* ***[****ISSN: 0022-2860,* ***IF: 3.196]***

6. Moupiya Ghosh, **Samir Mandal**, Anindita Roy, Subhendu Chakrabarty, Gopal Chakrabarti and Swapan Kumar Pradhan, "Enhanced antifungal activity of fluconazole conjugated with Cu-Ag-ZnO nanocomposite", ***Materials Science & Engineering C***, *106 (2020) 110160.* ***[****ISSN: 0928-4931,* ***IF: 7.328]***

7. Basudev Mahato, Chandraday Prodhan, **Samir Mandal**, Avirup Dutta, Parna Kumar,Tushar Deb, Tarun Jha and Keya Chaudhuri, "Eval uation of efficacy of Curcumin along with Lycopene and Piperine in the management of Oral Submucous Fibrosis", ***Contemporary Clinical Dentistry***, *10 (2019) 531-541.* ***[****ISSN: 09762361,* ***IF: 1.495]***

8. Basudev Mahato, **Samir Mandal**, Tushar Deb and Keya Chaudhuri, "Peripheral odontogenic tumour: Case report and review of literature", ***Journal of Oral and Maxillofacial Surgery Medicine and Pathology***, *30 (2018) 386-389.* ***[****ISSN: 2212-5558,* ***IF: 0.449]***

9. Gopal C. Jana, Sk Nayim, Munira Khatun, Somnath Das, Anirudha Patra, Nandan K. Sahoo, Pradeep K. Jha, **Samir Mandal**, Keya Chaudhuri, and Maidul Hossain, "Synthesis of a Naturally Occurring Plant Alkaloid Berberine Analogue and Its Application in Nanomolar Selective Detection of Hydrazine in Free and DNA-Binding Situation", ***Chemistry Select***, *2 (2017) 6519-6528.* ***[****ISSN: 2365-6549,* ***IF: 2.24]***

10. Basudev Mahato, **Samir Mandal**, Tushar Deb and Keya Chaudhuri, "Aneurysmal bone cyst of lower jaw- a case report and review of literature", ***Oral and Maxillofacial Pathology Journal***, *8 (2017) 98-100.* ***[****ISSN: 2322-0384]***

11. Basudev Mahato, **Samir Mandal**, Tushar Deb, Joy Gopal Ray and Keya Chaudhuri, "Epithelial Myoepithelial carcinoma of minor salivary gland - A case report", ***Journal of Oral and Maxillofacial Surgery Medicine and Pathology***, *28 (2016) 575-577.* ***[****ISSN: 2212-5558,* ***IF: 0.449]***

12. **Samir Mandal** and Keya Chaudhuri, "Engineered magnetic core shell nanoprobes: Synthesis and applications to cancer imaging and therapeutics", ***World J. Biol. Chem***., *7 (2016) 158-167.* ***[****ISSN: 1949-8454]***

13. Basudev Mahato, **Samir Mandal,** Joy Gopal Ray and Keya Chaudhuri, "Central cemento-ossifying fibroma: A case report", ***MOJ Clinical & Medical Case Reports****, 3 (2015).* ***[****ISSN: 2381-179X****]***

14. Bornita Das, **Samir Mandal** and Keya Chaudhuri, "Role of arginine, a component of aqueous garlic extract, in remediation of sodium arsenite induced toxicity in A375 cells", ***Toxicol. Res.****, 3 (2014) 191-196.* ***[****ISSN: 2045-4538,* ***IF: 2.68****]***

15. **Samir Mandal**, Nabanita Chatterjee, Subhadip Das, Krishna Das Saha and Keya Chaudhuri, "Magnetic core-shell nanoprobe for sensitive killing of cancer cells via induction with strong external magnetic field", ***RSC Adv.****, 4 (2014) 20077-20085.* ***[****ISSN: 2046-2069,* ***IF: 4.036****]***

16. **Samir Mandal**, Maidul Hossain, T. Muruganandan, Gopinatha Suresh Kumar and Keya Chaudhuri, "Gold nanoparticles alter Taq DNA polymerase activity during polymerase chain reaction", ***RSC Adv.****, 3 (2013) 20793-20799.* ***[****ISSN: 2046-2069,* ***IF: 4.036****]***

17. **Samir Mandal**, Maidul Hossain, P.Sujatha Devi, Gopinatha Suresh Kumar and Keya Chaudhuri, "Interaction of carbon nanoparticles to serum albumin: Elucidation of the extent of perturbation of serum albumin conformations and thermodynamical parameters", ***J. Hazard. Mater.****, 248–249 (2013) 238-245.* ***[****ISSN: 0304-3894,* ***IF: 14.224****]***

18. Biswadip Banerji, Sumit Kumar Pramanik, **Samir Mandal** , Nakul Chandra Maiti and Keya Chaudhuri, "Synthesis, characterization and cytotoxicity study of magnetic (Fe_3O_4) nanoparticles and their drug conjugate", ***RSC Adv.****, 2 (2012) 2493-2497.* ***[****ISSN: 2046-2069,* ***IF: 4.036****]***

19. **Samir Mandal** and Keya Chaudhuri, "A simple method for the synthesis of ultrafine carbon nanoparticles and its interaction with bovine serum albumin", ***Adv. Sci. Lett.****, 5 (2012) 139-143.* ***[****ISSN: 1936-6612,* ***IF: 0.2****]***

20. **Samir Mandal** and Keya Chaudhuri, "Preparation and characterization of arsenite conjugated gold nanoparticles", ***International Journal of Nanotechnology and allpications****, 5 (2011) 83-89.* ***[****ISSN: 0973-631X****]***

BOOK / BOOK CHAPTER

1. **Samir Mandal** and Keya Chaudhuri, "Magnetic Core-Shell Nanoparticles for Biomedical Applications", Complex Magnetic Nanostructures. *Springer International Publishing. (2017) 425-453.*

2. Keya Chaudhuri and **Samir Mandal**, " CSIR-UGC-NET Life Science", Techno World, 2022.

CONFERENCES PRESENTATION

1) **Poster Presentation:** Samir mandal and Keya Chaudhuri, **"**Magnetic core-shell nanoparticle for external magnetic field directed drug delivery for enhanced cancer cell apoptosis through DNA damage" at the International Congress on "Friedreich's Ataxia and DNA Structure in Health & Disease" held at All India Institute of Medical Sciences, New Delhi, India, from April 11-13th, 2015.

2) **Oral Presentation:** "Synthesis of ultrafine carbon nanoparticles and its interaction with serum albumin" at Annual Meet of The Society of Biological Chemists (India), Kolkata Chapter and Symposium on "Recent Trends in Chemical Biology" held at Sankarpur, West Bengal, India, from August 23-25th, 2013.

3) **Oral Presentation:** "Synthesis of ultrafine carbon nanoparticles and its interaction with bovine serum albumin" at Second National Symposium on Innovative Approaches and Modern Technologies for Crop Productivity, Food Safety and Environmental Sustainability, held at Thrissur, Kerala, India, from November 19-20th, 2012.

4) **Oral Presentation:** "Interaction of Taq DNA polymerase with GNP: Change of folding structure and reactivity " at 7th Asian Biophysics Association (ABA) Symposium and Annual Meeting of the Indian Biophysical Society (IBS), held at India Habitat Center, New Delhi, India, from 30th January - 2nd February, 2011.

5) **Poster Presentation:** Samir Mandal, T. Muruganandan, G Suresh Kumar and Keya Chaudhuri, "Interaction of Taq DNA polymerase with GNP: Change of folding structure and reactivity" at Symposium on Recent Trends in Biophysics and Workshop on Emerging Techniques of Biophysics at Banaras Hindu University, Banaras, India, from February 13-16th, 2010.

RESEARCH INTERESTS

- The elementary goal of my study is to develop nontoxic lanthanide doped and highly magnetic nanocomposite for targeting the stem cells into the specific sites of various diseases with the help of the external magnetic field in a highly efficient and biocompatible manner to achieve a high therapeutics potential and also to monitor the effect of these targeting inside the living body by the exploitation of their imaging properties, like magnetic resonance imaging (MRI). Identification of biomarkers in saliva for early detection of oral pre-cancer and cancer using liquid and gas chromatography linked to mass spectrometers and response to nano medicine treatment.
- Development of duel-mode supermagnetic nanomaterials to detect cancer and other abnormalities in cellular label by optical imaging (OI) and magnetic resonance imaging (MRI) simultaneously and also response to treatment against cancer and other cellular abnormalities.
- Identification of toxic nano scale objects present in our environment and to know the adverse effect of these nanoscale objects on human health by understanding there interaction with blood proteins and cell membrane and to exploit these insight into our understanding of how to preconsider and design the safe surface of nanoparticles in biomedical applications.

TECHNIQUES FAMILIAR WITH

1. **Nano materials synthesis related techniques:** Ultrafine carbon nanoparticle synthesis, Magnetic ironoxide nano-conjugate synthesis, Gold nano particles and nano-conjugate synthesis, Drug loaded magnetic core-shell nanomaterials synthesis, Highly magnetic lanthanide doped oxide nano composites synthesis, Dual mode magnetic core-shell nanomaterials for imaging and drug delivery

2. **Biophysical and biophysics related techniques:** X-ray diffraction (XRD), X-ray crystallography, Raman Spectroscopy, UV-Visible Spectroscopy, Fluorescence Spectroscopy, Mass spectrometry (MS), Confocal Microscopy, Fluorescence Microscopy, Atomic Force Microscopy (AFM), Dynamic Light Scattering (DLS), Circular Dichroism Spectroscopy (CD), Isothermal Titration Calorimetry (ITC), Differential Scanning Calorimetry (DSC), Atomic Absorption Spectroscopy (AAS), X-ray Photoelectron Spectroscopy (XPS), Fluorescence-Activated Cell Sorting (FACS), Inductively Coupled Plasma Spectroscopy (ICP), Fourier Transforms Infrared Spectroscopy (FTIR), Nuclear Magnetic Resonance Spectroscopy (NMR), Field Emission Scanning Electron Microscopy (FESEM), High Resolution Transmission Electron Microscopy (HRTEM)

3. **Molecular biology and cell biology related techniques:** Cell growth and maintenance, Cytotoxicity assay, Apoptosis assay, Western blot, Molecular cloning, ROS generation assay, Polymerase chain reaction (PCR), Agarose Gel electrophoresis assay, Cellular DNA content/cell cycle assay, Poly-acrylamide Gel electrophoresis assay, Mitochondrial membrane potential damage assay.

4. **Computer and soft wire handling:** Microsoft Office Word, Microsoft Office Power Point, Microsoft Office Excell, Origin Lab, Image-J, Paints, Adobe Photoshop, Adobe Illustrator, Graphpad Prism. Chem Draw, EndNote Program and Math Type.