

SATYAKAM PATNAIK, Ph.D

Senior Scientist

Nanomaterial Toxicology Group

CSIR-Indian Institute of Toxicology & Research (CSIR-IITR)

Vishvigyan Bhawan, 31; M.G.Marg, Lucknow-226001, UP (India)

Ph: (0522-2963827; PBX: 2627586 (Ext 248, 263)

Mob.:(91)-8960420042; Fax: (0522-2628227; 2611547

Email: satyakampatnaik@yahoo.com, satyakampatnaik@iitr.res.in

Google Scholar: [Citations](#)



BROAD RESEARCH INTEREST

- Designing of novel nano-sorbents/nano-photocatalyst from non-conventional materials for wastewater decontamination.
- Developing new strategy for drug delivery using target-specific multifunctional nanoparticles.
- Creating new Chemosensors (nano-MIPs and Metal-Organic-Framework) for analytes of importance in various biological and abiological matrices.
- Designing stimuli-responsive nanogels for anti-cancer drug therapy.
- Regenerative Medicine for Critical Bone Defects and Wound Healing.
- Development of Nanoagrochemicals towards sustainable agriculture.

PROFESSIONAL/RESEARCH EXPERIENCE

Mar 2017 – Till Date: Senior Scientist at CSIR-IITR (Nanomaterial Toxicology)

Mar 2012 – Mar 2017: Scientist at CSIR-IITR (Nanotherapeutics & Nanomaterial Toxicology)

Sep 2008 – Dec 2011: Postdoctoral Research Associate

Dept. of Biomedical & Pharmaceutical Sciences, College of Pharmacy, University of Rhode Island, Kingston, Rhode Island

Project entitled: "Sequence Effects of Arylamine-DNA Adducts: Repair and Replication"

Sep 2007 - Aug 2008: Research Associate (Industry)

Analytical Division, Ranbaxy Research Laboratories, Gurgaon.

Developing newer analytical methods for analyzing API and existing products by GC

2002-2007 (Ph.D): Research Fellow

Nucleic Acid Research Division, Institute of Genomics, and Integrative Biology

Project entitled: "Synthesis of some Photoresponsive Reagents and their applications"

2000-2002 (MPhil): Research Fellow

Delhi University, Department of Chemistry

Project entitled: "Interaction of Metal Ions with Ciprofloxacin: Studies based on Chemical Speciation and Molecular Modeling", Department of Chemistry, University of Delhi

RESERARCH GRANTS/PROJECTS

SI No.	Title of Project	Funding Agency	Amount (Rs. in lakh)	Date of sanction and Duration	Role
3	Application of Biosynthesized Metal nanoparticles for Quality Enhancement of Muga Silk Fiber.(DBT-TWINNING project with CSIR-NEIST, Jorhat) BT/PR25188/NER/95/1069/2017	DBT-New Delhi	57.98	07/06/2018 to 06/06/2021 Ongoing	PI
2	Centre for Sustainable Treatment, Reuse and Management of Water and Enabling Affordable and Sustainable Excellence (WATER-IC for SUTRAM of Water EASE) DST/TM/WTI/WIC/2K17/82(G)	DST-New Delhi	48.53	14/12/2018 to 13/12/2023 Ongoing	Co-PI
1	Pilot Grant Project for Young Investigator from DBT (PI) 6242-P73/RGCB/PMD/DBT/SKMP/2015	DBT-New Delhi	25.00	29/07/2015 to 28/07/2018 (Completed)	PI
I had also undertaken following CSIR-network project (Intramural)					
	Engineered nanoparticles (metallic/polymeric) for theranostic applications (NanoSHE)	CSIR (Net-work project)	~76.00	2012 to 2017 (Completed)	PI

RESEARCH PAPERS IN PEER REVIEWED JOURNALS

2019

1. Polymer assisted in situ synthesis of silver nanoparticles with epigallocatechin gallate (EGCG) impregnated wound patch potentiate controlled inflammatory responses for brisk wound healing. Kar AK, Singh A, Dhiman N, Purohit MP, Jagdale P, Kamthan M, Singh D, Kumar M, Ghosh D, **Patnaik S***, **International Journal of Nanomedicine (2019)**, 14, 9837-9854. [DOI.org/10.2147/IJN.S228462](https://doi.org/10.2147/IJN.S228462)
2. Advances in Controlled Release Pesticide Formulations: Prospects to Safer Integrated Pest Management and Sustainable Agriculture. Singh A, Dhiman N, Kar AK, Singh, D, Purohit MP, Ghosh D, **Patnaik S***, **Journal of Hazardous Materials (2019)**, 385, 121525. [DOI.org/10.1016/j.jhazmat.2019.121525](https://doi.org/10.1016/j.jhazmat.2019.121525)
3. Pro-inflammatory macrophage polarization enhances the anticancer efficacy of hydrazinocurcumin contained self-assembled galactomannan nanoparticles. Kumari M, Purohit M, Pahuja R, **Patnaik S**, Shukla Y, Kumar P, Gupta KC*, **Drug Delivery and Translational Research (2019)**, *epub. ahead of publication*. [DOI.org/10.1007/s13346-019-00661-y](https://doi.org/10.1007/s13346-019-00661-y)
4. Biosynthesis and characterization of sophorolipid biosurfactant by Candida species: Application as food emulsifier and antibacterial agent. Gaur VK, Dhiman N, Gautam K, Regara RK, Srivastava JK, **Patnaik S**, Kamthan M, Manickam N*, **Bioresource Technology (2019)**, 285, 121314, [DOI.org/10.1016/j.biortech.2019.121314](https://doi.org/10.1016/j.biortech.2019.121314)
5. Zinc oxide nanoparticles attenuate hepatic steatosis development in high-fat-diet fed mice through activated AMPK signaling axis. Dogra S, Kar AK, Girdhar K, Daniel PV, Chatterjee S, Choubey A, Ghosh

- S, **Patnaik S**, Ghosh D, Mondal P*, **Nanomedicine: Nanotechnology, Biology, and Medicine** (2019),17, 210-222. [DOI.org/10.1016/j.nano.2019.01.013](https://doi.org/10.1016/j.nano.2019.01.013)
6. Sub-acute oral exposure to zinc oxide nanoparticles causes alteration in iron homeostasis through acute phase response: a protective effect by surface modification. Srivastav AK, Dhiman N, Tiwari R, Arjaria N, Prakash J, Jagdale P, Anyur A, Singh D, **Patnaik S**, Kumar M*, **Journal of Trace Elements in Medicine and Biology** (2019), 52, 270-287. [DOI.org/10.1016/j.jtemb.2019.01.008](https://doi.org/10.1016/j.jtemb.2019.01.008)
 7. Impact of surface engineered ZnO nanoparticles on protein corona configuration and their interactions with biological system. Srivastav AK, Dhiman N, Khan H, Prakash J, Arjaria N, Singh D, Patnaik S, and Kumar M*, **Journal of Pharmaceutical Sciences** (2019), 108, 1872-1889. [DOI.org/10.1016/j.xphs.2018.12.021](https://doi.org/10.1016/j.xphs.2018.12.021)

2018

1. Curcumin loaded selenium nanoparticles synergize the anticancer potential of doxorubicin contained in self-assembled, cell receptor targeted nanoparticles. Kumari M, Purohit M, **Patnaik S**, Shukla Y, Kumar P, Gupta KC*, **Eur. J. Pharm. Biopharm** (2018) 130. 185-199. [DOI.org/10.1016/j.ejpb.2018.06.030](https://doi.org/10.1016/j.ejpb.2018.06.030)
2. Sneaky entry of IFN γ through arsenic-induced leaky blood-brain barrier reduces CD200 expression by microglial pro-inflammatory cytokine. Singh V, Kushwaha S, Gera R, Ansari JA, Dewangan J, Mishra J, **Patnaik S**, Ghosh D*, **Molecular Neurobiology** (2018), 56, 1488-1499. [DOI:10.1007/s12035-018-1155-0](https://doi.org/10.1007/s12035-018-1155-0)
3. DNA Base Sequence Effects on Bulky Lesion-Induced Conformational Heterogeneity during DNA Replication. Cai A, Wilson KA, **Patnaik S**, Wetmore SD, Cho BP*, **Nucleic Acids Res**, (2018), 466356-466370. [DOI:10.1093/nar/gky409](https://doi.org/10.1093/nar/gky409)
4. Comprehensive Remediate Study of Disperse Dyes Containing Wastewater Using Environmental Benign, Low Cost Cenospheres Nanosyntactic Foam. Tiwari M, Dhiman N, Shukla SP, Mohan D, Kisku GC and **Patnaik S***, **Journal of Cleaner Production** (2018), 182, 206-216. [DOI:10.1016/j.jclepro.2018.01.244](https://doi.org/10.1016/j.jclepro.2018.01.244)

2017

1. Arsenic exposure impels CD4 commitment in thymus and suppresses T cell cytokine secretion by increasing regulatory T cells. Gera R, Singh V, Mitra S, Sharma A, Singh A, Dasgupta A, Singh D, Kumar M, Jagdale P, **Patnaik S**, and Ghosh D*, **Scientific Reports** (2017), 7, 7140. [DOI:10.1038/S41598-017-07271-Z](https://doi.org/10.1038/S41598-017-07271-Z)
2. Predictive Modeling and Validation of Arsenite Removal by One pot Synthesized Bioceramic Buttressed Manganese Doped Iron oxide Nanoplatform. Dhiman N, Tiwari M, Fatima F, Saxsena PN, Roy S, Rout PK and **Patnaik S***, **RSC Advances** (2017), 7, 32866-32876. [DOI:10.1039/C7RA03736H](https://doi.org/10.1039/C7RA03736H)
3. Inhibition of Thioredoxin Reductase by Targeted Selenopolymeric Nanocarriers Synergizes the Therapeutic Efficacy of Doxorubicin in MCF7 Human Breast Cancer Cells. Purohit MP, Verma NK, Kar AK, Singh A, Ghosh D and **Patnaik S***, **ACS Appl Mater Interfaces** (2017), 9, 36493-36512. [DOI:10.1021/acsami.7b07056](https://doi.org/10.1021/acsami.7b07056)
4. Fluorimetric Estimation of Glutathione in Cultured Microglial Cell Lysate. Singh V, Gera R, Purohit MP, **Patnaik S** and Ghosh D*, **Bio-protocol**, (2017), 7, 11 (e2304). [DOI:10.21769/BioProtoc.2304](https://doi.org/10.21769/BioProtoc.2304)
5. Curcumin-loading potentiates the chemotherapeutic efficacy of selenium nanoparticles in HCT116 cells and Ehrlich's ascites carcinoma bearing mice. Kumari M, Ray L, Purohit MP, **Patnaik S**, Pant AB,

Shukla Y, Kumar P and Gupta KC*, **Eur J Pharm Biopharm**, (2017), 117, 346-362. DOI:10.1016/j.ejpb.2017.05.003

6. Statistical Optimization and Artificial Neural Network Modeling for Acridine Orange Dye Degradation Using In-situ Synthesized Polymer Capped ZnO Nanoparticles. Dhiman N, Markandeya, Singh A, Verma NK, Ajaria N and **Patnaik S***, **Journal of Colloid and Interface Science**, (2017), 493, 295-306. DOI:10.1016/j.jcis.2017.01.042

2016

1. Targeted Smart pH and Thermo-responsive N,O-Carboxymethyl Chitosan Conjugated Nanogels for Enhanced Therapeutic Efficacy of Doxorubicin in MCF-7 Breast Cancer Cells. Verma NK, Purohit MP, Eqbal D, Dhiman N, Singh A, Kar AK, Shankar Jai, Tehlan S and **Patnaik S***, **Bioconjugate Chemistry**, (2016), 27, 2605-2619. DOI:10.1021/acs.bioconjchem.6b00366
2. Hijacking microglial glutathione by inorganic arsenic impels bystander death of immature neurons through extracellular cystine/glutamate imbalance Singh V, Gera R, Kushwaha R, Sharma AK, **Patnaik S**, Ghosh D*, **Scientific Reports**, (2016), 6, 30601. DOI:10.1038/srep30601
3. Antimicrobial assay and genetic screening of selected fresh water cyanobacteria and identification of a biomolecule dihydro-2H-pyran-2-one derivative Srivastava A, Singh V, Patnaik S, Tripathi J, Nath G, Asthana R*, **J. Appl. Microbiology**, (2016), 122, 881. DOI: 10.1111/jam.13385

2015

1. A General Reagent Free Route to pH Responsive Polyacryloyl Hydrazide Capped Metal Nanogels for Synergistic Anticancer Therapeutics. Ujjwal RR, Purohit MP, **Patnaik S***, Ojha U*, **ACS Appl Mater Interfaces**, (2015) 7, 11497. DOI:10.1021/acsami.5b02452
2. Occupational health hazards of trichloroethylene among workers in relation to altered mRNA expression of cell cycle regulating genes (p53, p21, bax and bcl-2) and PPARA, Varshney M, Chandra A, Jain R, Ahmad R, Bihari V, Chandran KC, Mudiam MKR, **Patnaik S**, Goel SK*. **Toxicology Reports**, (2015), 2, 748. DOI:10.1016/j.toxrep.2015.04.002
3. Highly sensitive cell imaging "Off-On" fluorescent probe for mitochondria and ATP. Srivastava P, Razia SS, Ali R, Srivastav S, **Patnaik S**, Saripella S, Misra A*, **Biosensors and Bioelectronics**, (2015), 69, 179. DOI:10.1016/j.bios.2015.02.028

2014

Conformational Insights into the Lesion and Sequence Effects for Arylamine-Induced Translesion DNA Synthesis: 19F NMR, Surface Plasmon Resonance, and Primer Kinetic Studies. Jain V, Vaidyanathan G, **Patnaik S**, Gopal S, and Cho BP*, **Biochemistry**, (2014), 53, 4059. DOI:10.1021/bi5003212

2013

1. A simple blue fluorescent probe to detect Hg²⁺ in semi aqueous environment by intramolecular charge transfer mechanism. Srivastava P, Alia R, Razia SS, Shahid M, **Patnaik S**, Misra A*, **Tetrahedron Lett.**, (2013), 54, 3688. DOI:10.1016/j.tetlet.2013.05.014

2. Unusual sequence effects on nucleotide excision repair of arylamine lesions: DNA bending/distortion as a primary recognition factor. Jain V, Hilton B, Lin B, **Patnaik S**, Liang F, Darian E, Zou Y, MacKerell Jr. AD, Cho BP*, **Nucleic Acids Res**, (2013), 41, 869. DOI:10.1093/nar/gks1077

2012

1. Conformational and thermodynamic properties modulate the nucleotide excision repair of 2-aminofluorene and 2-acetylaminofluorene dG adducts in the NarI sequence. Jain V, Hilton B, **Patnaik S**, Zou Y, Chiarelli MP, Cho BP*, **Nucleic Acids Res**, (2012), 40, 3939. DOI:10.1093/nar/gkr1307
2. Engineered polymer-supported synthesis of 3'-carboxyalkyl-modified oligonucleotides and their applications in the construction of biochips for diagnosis of the diseases. **Satyakam Patnaik**, Dash SK, Sethi D, Kumar A, Gupta KC and Kumar P*, **Bioconjugate Chemistry**, (2012), 23, 664. DOI:10.1021/bc200610u

2010

Structures of 2-acetylaminofluorene modified DNA revisited: Insight into Conformational Heterogeneity. **Satyakam Patnaik** and Bongsup Cho*, **Chem. Res. Tox.**, (2010), 23, 1650. DOI:10.1021/tx100341u

2009

Polymer supported synthesis of aminoxyalkylated oligonucleotides, and some applications in the fabrication of microarrays. Sethi D, **Patnaik S**, Kumar A, Gandhi RP, Gupta KC and Kumar P*, **Bioorg. Med. Chem.**, (2009), 17, 544. DOI:10.1016/j.bmc.2009.06.038

2007

1. N-(Iodoacetyl)-N'-(Anthraquinon-2-oyl)-Ethelenediamine (IAED): A New Heterobifunctional Reagent for the Preparation of Biochips. **Satyakam Patnaik**, Swami A, Sethi D, Pathak A, Garg BS, Gupta KC and Kumar P*, **Bioconjugate Chemistry**, (2007), 18, 8. DOI:10.1021/bc0602634
2. Photomodulation of PS-modified oligonucleotides containing azobenzene substituent at pre-selected positions in phosphate backbone. **Satyakam Patnaik**, Kumar P, Garg BS, Gandhi RP and Gupta KC*, **Bioorg. Med. Chem.**, (2007), 15, 7840. DOI:10.1016/j.bmc.2007.08.042
3. Photoregulation of Drug Release in Azo-Dextran Nanogels. **Satyakam Patnaik**, Sharma AK, Garg BS, Gandhi RP and Gupta KC*, **Intl. J. Pharmaceutics**, (2007), 342, 193. DOI:10.1016/j.ijpharm.2007.04.038

2006

A new synthetic protocol for labeled oligonucleotides, using a chemically cleavable universal linker. Mahajan S, **Patnaik S**, Kumar P, Gandhi RP and Gupta KC*, **Bioorg. Med. Chem.**, 14, 4302, DOI:10.1016/j.bmc.2006.01.063

2005

Synthesis of labeled oligonucleotides through a new chemically cleavable linker. Mahajan S, **Patnaik S**, Kumar P and Gupta KC*, **Tetrahedron Lett.**, 46, 6149. DOI:10.1016/j.tetlet.2005.06.164

PATENTS

An electronic device to make pathogens free water through an electrolytic disinfection process
Indian Patent Application Number: 201811017973 dated 14.05.2018

BOOK CHAPTER/GENERAL ARTICLES

Book Chapter:

Comprehensive Array of Ample Analytical Strategies for Characterization of Nanomaterials in CRC Press, Taylor & Francis Group commissioned book entitled "*Functionalized Nanomaterials I: Fabrication*" [Editors: Vineet Kumar, Praveen Guleria, Nandita Dasgupta, Shivendu Ranjan]

Written two articles in Hindi those are published in Vishvgyan Sandesh, 2015 and 2017.

- a) कृषि में नैनोप्रौद्योगिकी (Nanotechnology) का उपयोग: विशेष संदर्भ-नैनोकीटनाशक (Nanopesticide).
- b) नैनोपार्टिकलस द्वारा पानी से हवी मेटल निष्कासन.
- c) **Written** one book chapter "कैंसर के चिकित्सकीय लक्ष्य तथा प्रगतिशील कैंसर नैनोमेडिसिन" in Hindi to be published in a Book on Nanotechnology.

PAPERS/ ABSTRACTS PRESENTED/ PUBLISHED IN CONFERENCES/ SEMINARS/ SYMPOSIA

2019

1. In vitro combinatorial chemotherapy of 5-fluorouracil and *O. sanctum* L. extract loaded Vitamin-B6 coupled pH responsive liposomal nanoparticles. Divya Singh, Aditya K Kar, Amrita Singh, Nitesh Dhiman, Debabrata Ghosh, Satyakam Patnaik, **6th International Conference on Advanced Nanomaterial and Nanotechnology (ICANN2019)**, Centre for Nanotechnology, **Indian Institute of Technology Guwahati (IITG)**, India, December 18-21, **2019**.
2. Environmentally friendly ZnO/SiO₂ based nanopesticide formulation for sustainable agriculture. Amrita Singh, Aditya K Kar, Divya Singh, Nitesh Dhiman, Debabrata Ghosh, Satyakam Patnaik, **6th International Conference on Advanced Nanomaterial and Nanotechnology (ICANN2019)**, Centre for Nanotechnology, **Indian Institute of Technology Guwahati (IITG)**, India, December 18-21, **2019**.
3. Silver NPs-EGCG Impregnated Natural Polymer-based Hydrogel Potentiate Controlled Inflammatory Responses for Brisk Wound Healing. Aditya K Kar, Amrita Singh, Nitesh Dhiman, Mahaveer P Purohit, Divya Singh, Debabrata Ghosh, Satyakam Patnaik, **6th International Conference on Advanced Nanomaterial and Nanotechnology (ICANN2019)**, Centre for Nanotechnology, **Indian Institute of Technology Guwahati (IITG)**, India, December 18-21, **2019**.
4. Selenopolymeric Nanocomposites: A Smart Tool to Achieve Synergistic Cancer Cell Death. Mahaveer P. Purohit and Satyakam Patnaik, Poster presentation, **International Conference on Molecular Basis of Diseases and Therapeutics (ICMBDT-2019)**, Central University of Rajasthan, March 8-10, **2019**.
5. Polymer matrix mediated green synthesis of bimetallic (Au/Ag) nanoparticle for synergistic anti-bacterial and catalytic effects. Nitesh Dhiman, Aditya K Kar, Mahaveer P. Purohit, Amrita Singh,

Debabrata, Ghosh, Satyakam Patnaik, **24th CRSI National Symposium in Chemistry (CRSI-NSC-24), CSIR-CLRI, Chennai, February 8 to 10, 2019.**

2018

1. Doxorubicin loaded Selenopolymeric nanocomposites: A smart tool to achieve synergistic cancer cell death. Mahaveer P. Purohit, Neeraj K. Verma, Aditya K. Kar, Amrita Singh, Debabrata Ghosh, Satyakam Patnaik, Oral Talk, **International Conference on "Cell Death in Cancer and Toxicology (CDCT-2018), CSIR-IITR, India, February 20-22, 2018.**
2. Nature Inspired Hydrogel based Wound Patch infused with Antimicrobial and Antioxidant agents for accelerated Wound Healing. Aditya K. Kar, Amrita Singh, Pankaj Jagdale, Mahaveer P. Purohit, Neeraj K. Verma, Nitesh Dhiman, Mohan Kamthan, Dharendra Singh, Mahadeo Kumar, Debabrata Ghosh, Satyakam Patnaik, **24th ISCB International Conference (ISCBC 2018) "Frontier Research in Chemistry & Biology Interface"**, Manipal University, Jaipur, India, January 11-13, **2018.**
3. Controlled Release of Insecticide Using Eco-Affable Cenospheres-Alginate Microbeads. Amrita Singh, Aditya K. Kar, Monika Seth, Nitesh Dhiman, S. Anbumani, Satyakam Patnaik, **24th ISCB International Conference (ISCBC 2018) "Frontier Research in Chemistry & Biology Interface"**, Manipal University, Jaipur, India, January 11-13, **2018.**
4. Active Targeted Thymol Encapsulated In-Situ Synthesized Bimetallic (Au/Ag) Nanoparticles Containing Nanogels as High Efficiency Anti-Cancer agent. Nitesh Dhiman, Jamal A. Ansari, Aditya K. Kar, Mahaveer P. Purohit, Debabrata Ghosh, Satyakam Patnaik, **24th ISCB International Conference (ISCBC 2018) "Frontier Research in Chemistry & Biology Interface"**, Manipal University, Jaipur, India, January 11-13, **2018.**

2017

1. Hyaluronan functionalized selenopolymeric nanocomposite: a nanocarrier to synergistic tool for Doxorubicin, Mahaveer P. Purohit, Neeraj K. Verma, Danish Equbal, Aditya Kumar Kar, Debabrata Ghosh and Satyakam Patnaik, **5th Nano Today Conference**, Hawaii, USA, December 6-10, **2017.**
2. Statistical Modeling and Optimization of Surface Engineered ZnO Nanoparticles Induced Hepatotoxicity by Response Surface Methodology. Nitesh Dhiman, Anurag K Srivastav, Mahadeo Kumar, Satyakam Patnaik, **3rd International Toxicology Conclave (ITC-2017)**, CSIR-IITR, Lucknow, India, November 5-6, **2017.**
3. Heparin Functionalized Selenopolymeric Nanocomposites for Combined Anti-angiogenic Chemotherapy, Mahaveer P. Purohit, Neeraj K. Verma, Nitesh Dhiman, Aditya K. Kar, Amrita Singh, Satyakam Patnaik, **4th International Conference on Nanoscience and Nanotechnology (ICONN2017)**, SRM University, Chennai, India, August 9-11, **2017.**
4. Temperature Controlled pH Stimulated Drug Releasing Nanogels for Targeting MCF7 Breast Cancer Cells. Neeraj K Verma, Mahaveer P. Purohit, Nitesh Dhiman, Aditya K. Kar Amrita Singh and Satyakam Patnaik, **21st CRSI-IICT-ACS joint International Symposium in Chemistry**, CSIR-IICT, Hyderabad, India, July 13-16, **2017.**

5. Ameliorated Photocatalytic Degradation and Disinfection Applications of In-Situ Synthesized Biopolymer Capped ZnO Nanoparticles. Nitesh Dhiman, Markandeya Tiwari, Neeraj K. Verma, Mohan Kamthan, Satyakam Patnaik, **21st CRSI-IICT-ACS joint International Symposium in Chemistry**, CSIR-IICT, Hyderabad, India, July 13-16, **2017**.

2016

1. Inhibition of Thioredoxin Reductase by Targeted Selenopolymeric Nanocarriers Synergizes the Therapeutic Efficacy of Doxorubicin in MCF7 Human Breast Cancer Cells. Mahaveer P. Purohit, Neeraj K. Verma, Danish Equbal, Aditya K. Kar, Debabrata Ghosh, and Satyakam Patnaik, **2nd International Toxicology Conclave (ITC-2016)** organized as part of the Golden Jubilee Celebrations at CSIR-IITR, November 15-16, **2016**.
2. Reagent free green synthesis of silver nanoparticles using modified guar gum and their bio-evaluation. Nitesh Dhiman, Aditya K. Kar, Neeraj K. Verma, Mahaveer P. Purohit, Mohan Kamthan and Satyakam Patnaik, **36th Annual Conference of Society of Toxicology (India) (STOX-2016) "International Conference on New Insights & Multidisciplinary Approaches in Toxicological Studies"** August 3-5, organized by Amity University Campus, Noida, **2016**.
3. Controlled release of insecticides using eco-friendly cenospheres-alginate based microbeads. Amrita Singh, Nitesh Dhiman, Faimy Fatima, Aditya K. Kar, Neeraj K. Verma, Mahaveer P. Purohit, and Satyakam Patnaik, **36th Annual Conference of Society of Toxicology (India) (STOX-2016) "International Conference on New Insights & Multidisciplinary Approaches in Toxicological Studies"** August 3-5, organized by Amity University Campus, Noida, **2016**.
4. An efficient posthaste removal of heavy metals using bio-ceramic supported magnetic nanoparticles. Nitesh. Dhiman, Faimy. Fatima, Markandeya and Satyakam Patnaik, **International Conference On Innovations in Sustainable Water and Wastewater Treatment Systems, ISWATS, YASHADA, Pune, April 21-23, 2016**.

2015

1. Design, Development and Bio-evaluation of Dual Responsive Polymeric Nanogels for Anti-Cancer Drug Delivery. Neeraj K. Verma, Danish Equbal, Mahaveer P. Purohit, Nitesh Dhiman, Aditya K Kar, and Satyakam Patnaik, **International Toxicology Conclave-2015 (ITC-2015)** organized as part of the Golden Jubilee Celebrations at CSIR-IITR, November 05-06, **2015**.

2014

1. Multifunctional Selenium nanoparticle: A potential drug carrier for cancer therapy. Mahaveer P Purohit, Ajay K. Sharma, Danish Equbal and Satyakam Patnaik, **International Conference on Chemical Biology, Disease Mechanisms and Therapeutics (ICCB-2014)**, Organized by CSIR-IICT with Chemical Biology Society (CBS), India, **2014**.
2. Doxorubicin loaded Superparamagnetic Iron oxide Nanoparticles (SPION's) for Theranostic application in breast cancer model. Ajay K Sharma, Mahaveer P. Purohit, Danish Equbal, Satyakam

Patnaik, **International Conference on Chemical Biology, Disease Mechanisms and Therapeutics (ICCB-2014)**, Organized by CSIR-IICT with Chemical Biology Society (CBS), India, **2014**.

2011

1. Conformational mapping of DNA duplexes containing dG-acetylaminofluorene adduct. Satyakam Patnaik, Paul Chiarelli and Bongsup Cho, Abstracts of Papers, **242th ACS National Meeting**, Denver, Colorado, USA, August, **Fall 2011**.
2. Conformational mapping of arylamine-DNA adducts: Structure-function-relationships. Bongsup Cho, Satyakam Patnaik, Vipin Jain and V.G. Vaidyanathan, Oral Talk, **242th ACS National Meeting**, Denver, Colorado, USA, August, **Fall 2011**.
3. Probing the Carcinogen-induced Conformational Heterogeneity using Minor Groove DNA Binders. Kristina Klara, Satyakam Patnaik, Vaidyanathan Ganeshan, and Bongsup Cho, **Rhode Island-INBRE Summer Undergraduate Research Fellows Conference**, University of Rhode Island, Rhode Island, USA, August, **2011**.

2010

1. Spectroscopic and Thermodynamic Insights into Sequence effects of 2-Acetylaminofluorene-Induced Conformational Heterogeneity. Satyakam Patnaik and Bongsup Cho, Abstracts of Papers, **240th ACS National Meeting**, Boston, USA, August, **Fall 2010**.
2. DNA sequence effect on the arylamine-induced conformational heterogeneity. Vipin Jain, Satyakam Patnaik, V.G. Vaidyanathan and Bongsup Cho, Abstracts of Papers, **240th ACS National Meeting**, Boston, USA, August, **Fall 2010**.
3. The Role of Conformational Heterogeneity in Arylamine-induced Mutagenesis. Bongsup Cho, V.G. Vaidyanathan, Satyakam Patnaik, and Vipin Jain, Abstracts of Papers, NIH, NCRR 3rd Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), Maryland, USA, June, **2010**.

2009

1. Unusual DNA Sequence Effect on the Aminobiphenyl-induced Conformational Heterogeneity Adduct induced thermal and thermodynamic destabilization in a simulated translesion synthesis. Vipin Jain, Fengting Liang, Satyakam Patnaik, Varsha Biyyala and Bongsup Cho, Abstracts of Papers, **238th ACS National Meeting**, Washington DC, USA, August, **Fall 2009**.
2. Unusual Sequence Effect on Conformational Heterogeneity in Arylamine adducted DNA. Joanna M. Scimeca, Vipin Jain, Satyakam Patnaik and Bongsup Cho, Rhode Island-INBRE Summer Undergraduate Research Fellows Conference, University of Rhode Island, Rhode Island, USA, August, **2009**.

2001-2004

1. Synthesis of Labeled Oligonucleotides through a Chemically Cleavable Linker. Shweta Mahajan, Satyakam Patnaik, K.C. Gupta and P. Kumar Abstracts of Papers, International Conference on Chemistry Biology Interface: Synergistic New Frontiers" (CBISNF-2004), INDIA, June, **2004**.
2. Participated in the "IUPAC International Conference on Biodiversity and Natural Products: Chemistry and Medical Applications" (ICOB-4 and ISCNP-24), Organized by the Department of Chemistry, University of Delhi and CSIR, New Delhi, India, **2004**.
3. Participated in "BioTech 2004. Challenges and Opportunities", Organized by the Institute of Genomics and Integrative Biology, Delhi, India, **2004**.
4. Participated in the "**1st International Symposium on Green Chemistry**", Organized by the Department of Chemistry, University of Delhi, New Delhi, India, January, **2001**.

EDUCATION

- 2000-2002 (MPhil):** **Research Fellow**
 Delhi University, Department of Chemistry
Project entitled: "*Interaction of Metal Ions with Ciprofloxacin: Studies based on Chemical Speciation and Molecular Modeling*", Department of Chemistry, University of Delhi
- 2000-2002 (MPhil):** **Research Fellow**
 Delhi University, Department of Chemistry
Project entitled: "*Interaction of Metal Ions with Ciprofloxacin: Studies based on Chemical Speciation and Molecular Modeling*", Department of Chemistry, University of Delhi
- 1999 (M. Sc.):** **Chemistry, Ramjas College, University of Delhi**
1996 (B. Sc.): **Chemistry, BJB College, Utkal University, Orissa**

AWARDS AND TRAINING

- 2011** Certificate course in **AXIMA Performance MALDI-TOF MS** by Shimadzu Scientific Instruments, Inc.
- 2006-2007** **Project Fellowship**
 From the Task Force project SMM-003, Council of Scientific and Industrial Research (CSIR), Govt. of India
- 2003-2006** **Junior Research Fellowship**
 For the project entitled "Some Photoresponsive Oligonucleotides: Their Synthesis and Conformational Studies" from the Department of Biotechnology, New Delhi
- 2002-2003** **Project Associateship**
 From Genomed project, Nicholas-Piramal India Ltd.
- 2001** Awarded **Junior Research Fellowship (JRF)** from the CSIR-UGC, New Delhi
- 2001** **Twice winner of All India Essay Contests** conducted by **Bright Career Publication** (Competition Refresher)
- 1991** **Awarded President's Scout**

MENTORSHIP/GUIDANCE

Doctoral Student Enrolled: 5

Thesis Awarded: 1

PROFESSIONAL MEMBERSHIP

- ❖ Member, American Chemical Society since 2009.
- ❖ Member, Indian Chemical Society since 2009.
- ❖ Member of College of Pharmacy Professional Research Society, URI since 2009.

Last Updated: 13th Jan 2020