



Associate Professor

Dr. Sumit Bhawal

Chemistry, School of Science

Qualifications

BSc, MSc, PhD, PhD

- PhD Chemistry, Advisor: Prof. Surekha Devi, Thesis: 'Polymerization of various acrylates in Microemulsion' Area of expertise: Polymer and Colloid Science, at the Department of Chemistry, Faculty of Science, The Maharaja Sayajirao University of Baroda, Vadodara
- PhD Chemistry, Advisor: Dr. Frank W. Foss, Thesis: 'Design and synthesis of HMP Kinase Inhibitors', Area of Expertise: Synthetic Organic and Medicinal Chemistry, at the School of Chemistry and Biochemistry, University of Texas at Arlington (USA)
- MSc Organic Chemistry, The Maharaja Sayajirao University of Baroda,
- BSc Chemistry (main) Physics & Math (subsidiary), The Maharaja Sayajirao University of Baroda.

Contact Details

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Profile

Dr. Sumit Bhawal joined Navrachana University in 2017 as an Associate Professor. Prior to that he worked as Postdoctoral Research Associate (NIH funded) at the Chemical Engineering Department, Texas Tech University (USA) and with Prof. Daniel W. Armstrong, Department of Chemistry & Biochemistry at UT Arlington (USA) for 2 year 8 months. During his Postdoctoral studies, he worked in the area of Task specific Ionic Liquids, their role in organic transformations and novel drug delivery platforms.

He also has more than 6 years industrial R&D experience between Sun Pharmaceutical Pvt. Ltd. Vadodara, Berger Paints India Ltd., Kolkata and CRO Laboratories Inc., USA. His expertise covers diverse areas of synthetic organic & polymer chemistry, drug delivery systems, novel material synthesis and their application to real world problems. He also has mentored advanced Undergraduates, Juniors, and Masters students for theory and laboratory courses in India and abroad for more than 9 years.

His research interest is the development of functional materials through organic/polymer synthesis, sustainable chemistry and simplification of pharmaceutical formulation leading to lower cost and better efficacy. He is also very interested in advancing scientific pursuits in the direction of community-based issues. He has authored about 19 publications and conference presentations.

Specific ongoing research involves

- Design, synthesis and evaluation of extractants for Precious metal recovery from spent catalyst (in collaboration with Sud-Chemie Pvt Ltd).
- Synthesis, evaluation and application of Biocompatible surfactants and hydrotopes to enhance bioavailability of Hydrophobic drugs (in collaboration with BARC, Mumbai and IIT Ropar)
- Some forthcoming research will involve development of Antimicrobial Polymers for coating applications.

Publications (Selected, Peer-reviewed)

- Synthesis of Thermally Stable GeminalDicationic Ionic Liquids: An Examination of Physicochemical Properties by Structural Modifications, Rahul A. Patil, Mohsen Talebi, Chengdong Xu, Sumit S. Bhawal, Daniel W. Armstrong, Chem. Mater., 2016, 28 (12), pp 4315-4323. ISSN: 0897-4756 (print); 1520-5002 (web), American Chemical Society, Impact Factor: 9.57 Currently indexed in Chemical Abstracts Service, SCOPUS, EBSCOhost, British Library, Swetswise, and Web of Science.
- Rapid, effective deprotection of tert-butoxycarbonyl (Boc) amino acids and peptides at high temperatures using a thermally stable ionic liquid. Bhawal S. Sumit, Patil, A.P.; Armstrong, D.W. RSC Adv. 2015, 5, 95854. ISSN # 2046-2069, Royal Society, Impact Factor: 3.12, Indexed in the Web of Science
- Yang, Samuel; Wang, Evelyn; Gurak, John; Bhawal, Sumit; Deshmukh, Rajendrasing; Wijeratne, W. M. Aruna B.; Edwards, Brian; Foss, Frank; Timmons, Richard; Schug, Kevin 'Affinity Mesh Screen Materials for Selective Extraction and Analysis of Antibiotics using Transmission Mode Desorption Electrospray Ionization Mass spectrometry' Langmuir 2013, 29, 8046 - 8053. ISSN: 0743-7463 (print); 1520-5827 (web), American Chemical Society, Impact Factor: 3.56. Indexed in Chemical Abstracts Service, Scopus, EBSCOhost, British Library, PubMed, Web of Science, and SwetsWise.
- Recalculation of monomer reactivity considering the effect of monomer partitioning in microemulsion. European Polymer Journal. Bhawal, S.; Sanghvi, P. G.; Devi, S. 2003, 39, 389. ISSN # 0014-3057, Elsevier.
- Initiator artifice in the emulsion and microemulsioncopolymerisation of partially water soluble monomers. Int Journal of Polymer Materials, Bhawal, S. and Devi, S. 2006,55, 255-281. ISSN # 1563-535X, Taylor &Francis.
- Translucent nanolatexes through emulsion polymerisation of ethylacrylate. Bhawal, S. Pokhriyal, N., Devi, S. European Polymer Journal. 2002, 38, 735. ISSN # 0014-3057.

Conference Publications (Selected)

- Method to selectively analyze the antibacterial compounds of natural products, Misty Martin, John Gurak, Sumit Bhawal, Frank Foss, Laura Mydlarz, Kevin Schug, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY Publication date 2016/3/13, Vol 251, Publisher: American Chemical Society
- Approaches to investigate HMP kinase with small molecule probes Sumit Bhawal, Diego Lopez, Yannick Nkuni, Frank W Foss, ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, Publication date 2014/3/16, Vol 247, Publisher: American Chemical Society.
- Selective Extraction of Palladium from spent Automotive Catalyst using Low VOC Solvent - LIX63, Suvashis Sarkar, Sumit Bhawal, Suneet Yadav, Indian Analytical Science Congress (IASC 2019), in collaboration with ISRO & DRDO, September 2019, Page 96.

Recognition and Awards

- Awarded Senior Research fellowship by council of scientific and industrial research (CSIR), Govt. of India for carrying out research work (2001).
- Secured first position in the MS entrance exam conducted by The M.S. University of Baroda, (1997)
- Awarded Graduate Stimulus Fellowship (2009 - 2010)
- STEM doctoral Fellowship (2009 - 2014)
- Awarded I-engage for training and mentoring senior undergraduate at UTA (2014).

