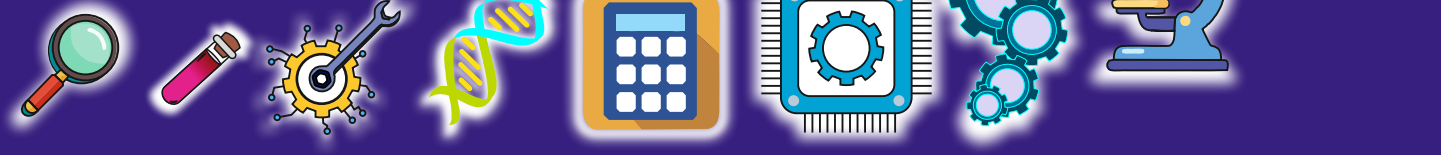
भाभा परमाणु अनुसंधान केंद्र के विज्ञान एवं प्रौद्योगिकी जगत के पुरस्कार एवं सम्मान

Awards and Honors to BARC Science and Technology Community





Dr. Atindra Mohan Banerjee

Dr. Atindra Mohan Banerjee is a Scientific Officer in the Chemistry Group, BARC. He joined BARC in 2005 after completing his M.Sc. from the University of Calcutta and the 48th BARC Training School, and obtained his Ph.D. from HBNI in 2012 on iron oxide-based catalysts for high-temperature sulfuric acid decomposition in the Iodine-Sulfur (I-S) hydrogen generation process. His postdoctoral research at the University of Kansas focused on plasma-catalytic CO conversion. His research spans heterogeneous catalysis, thermochemical water-splitting cycles (I-S, Cu-Cl and Hybrid-Sulfur), electrocatalysis, alkaline water electrolysis, photocatalytic hydrogen production and plasma catalysis. His contributions include catalysts for I-S demonstration plants, Pt/C and low-Pt/bimetallic electrocatalysts, Mo-carbide catalysts, Ni-based coatings and LDH catalysts. He has more than 40 publications, 4 book chapters, and received several DAE and scientific awards including the DAE Group achievement Award (2010), DAE Young Scientist Award (2014) besides ITAS Young Scientist Award (2014) and **SMC Bronze Medal** (2025).

<<< Dr. Dimple P. Dutta



Dr. Dimple P. Dutta, Scientific Officer in the Knowledge Management Group, received the **CRS-Silver Star Medal from Chirantan Rasayan Sanstha (CRS)**, India, for notable contributions to energy storage. Her research focuses on developing materials through soft chemical techniques for energy storage and water remediation. She has designed and optimized novel electrode materials for lithium and sodium-ion batteries and explored functional materials for efficient removal of water contaminants, contributing to sustainable technologies. Her other distinctions include the DAE Scientific and Technical Excellence Award for contributions to the National Energy Storage Initiative, CRSI Bronze Medal, MRSI Medal, Silver Medal from the Society of Materials Chemistry, DAE Young Scientist Award, and ACS Award. Dr. Dutta is a Fellow of the Royal Society of Chemistry, London, and Maharashtra Academy of Sciences, and an elected Member of the National Academy of Sciences, India. She also actively contributes to DAE outreach.



Dr. Mohit Tyagi

Dr. Mohit Tyagi is a Scientific Officer in Physics Group. He joined BARC in 2005 after completing the 48th BARC Training School. His research focuses on advanced scintillating materials and indigenous radiation detection technologies for DAE applications. He has authored over 115 peer-reviewed publications and holds 8 patents, including grants in the USA, Germany, China and India, besides PCT. He played a key role in developing single-crystal scintillators and compact radiation detectors for gamma rays, neutrons, X-rays, electrons and charged particles, several of which are deployed across DAE units. His innovations include high-performance Ce-doped GGAG scintillators, a GGAG:Ce/B-CsI:Tl phoswich detector and a portable radiation detector. His contributions have earned major DAE and national awards, including HBSTM-2024. He is a **Fellow of the Maharashtra Academy of Sciences**, NASI member and **Chairperson of INYAS-INSA**. His current work addresses emerging indigenous radiation-detection needs.



Dr. K. Sandeep Rao

Dr. K. Sandeep Rao, a Scientific Officer in the Chemistry Group, joined BARC after graduating from the 58th batch of the BARC Training School. His foundational academic excellence is marked by an INSPIRE fellowship (2009-2014), a 2014 Gold Medal for his Integrated MSc in Chemistry from NISER, Bhubaneswar, and the 2015 Bhabha Gold Medal from HRDD, BARC. Dr. Rao specializes in the research and development of advanced functional materials for clean energy, with a primary focus on lithium-based batteries, oxygen-ion conductors, and dielectric ceramics. He has made highly impactful contributions to lithium-sulfur battery technologies, effectively addressing polysulfide shuttling and sulfur utilization limitations through innovative separator modifications using GO and MXene/rGO matrices. His expertise also extends to developing bio-derived carbon cathodes and exploring defect-mediated conduction pathways in complex perovskites. This deep-rooted interest in structure-composition-property correlations builds upon his early computational and experimental work on magnetic interactions in iron nitrides. His blend of experimental rigor and technological relevance is documented across 19 international journal research papers, one book chapter, three bulletin articles, and a BARC internal report. Recognizing his scientific contributions, the Society for Materials Chemistry (SMC) honored him with the 2025 **Emerging Scientist Award**. Beyond his research, Dr. Rao is a dedicated educator and science communicator. He has taught NMR Spectroscopy and Material Science to OCES Chemistry trainees. He was also an active participant in the 2022 DAE Parmanu Jyoti Programme, wherein he travelled to Jawahar Navodaya Vidyalaya schools in the Union Territory of Andaman & Nicobar Islands to popularize science and DAE activities among high school students.

<<< Dr. Raghunath Acharya



Dr. Raghunath Acharya, an Outstanding Scientist & Head, Isotope and Radiation Application Division of RC&IG, BARC was elected as a **Fellow of Maharashtra Academy of Sciences** (FMASc) in 2025 for his contributions in the field of Chemical Sciences. Additionally, he received **Silver Medal** by Society of Materials Chemistry in 2025 for his notable contributions on non-destructive chemical characterization of materials by Nuclear Analytical Techniques utilizing research reactors and particle accelerators of BARC.



Mr. Rajath Alexander

Mr. Rajath Alexander, a Scientific Officer in Materials Group, BARC, has been selected for the **INAE Young Engineer Award** 2026 and inducted as an INAE Young Associate. The recognition acknowledges his work in carbon nanomaterials. Mr. Alexander developed, for the first time in India, the technology for producing kilometre-long carbon nanotube (CNT) fibres, a capability achieved by only a few laboratories worldwide. The fibres exceed 7.5 GPa in tensile strength, the highest reported for indigenously produced CNT fibres, and also offer high electrical conductivity. They were produced on an indigenously developed Floating Catalyst CVD reactor with an integrated precision winding system. Key design features include bi-directional catalyst injection, in-situ radial mixing for selective synthesis of semiconducting SWCNTs, and in-situ twisting, which increased specific tensile strength by 125%. An Indian patent has been awarded for the method and system for enhanced carbon conversion and selective synthesis of semiconducting SWCNT fibres. The CNT sheet technology was transferred to M/s 6C Nanocarb Pvt. Ltd. for industrial-scale production. He also developed boron carbide-CNT nanocomposite armour tiles, transferred to M/s. Bhukhanvala Industries Private Limited, and was involved in the production and supply of more than 150 Bhabha Kavach bulletproof jackets to the CISF, BSF, CRPF and NSG. His work has been evaluated for lightweight aerospace and defence structural panels, thermoelectric waste heat harvesting, and wearable gas sensors.



Dr. Ratikanta Mishra

Dr. Ratikanta Mishra, Outstanding Scientist, joined Bhabha Atomic Research Centre (BARC) as a Scientific Officer after graduating from the 36th batch of the BARC Training School. He is presently heading Analytical Chemistry Division, Chemistry Group in BARC. Dr. Mishra expertises in thermal analysis and chemical thermodynamics, with significant contributions to thermodynamics of nuclear materials relevant to India's nuclear energy programme. His research includes development of thermodynamic databases for Advanced Heavy Water Reactor (AHWR) nuclear fuel systems and investigations into high-temperature chemistry and thermophysical properties of fuel systems for Molten Salt Breeder Reactors (MSBRs). He has also successfully led a team in synthesizing ultra-pure materials for strategic applications and developed novel lead-free nanostructured solder materials for high-temperature applications. Dr. Mishra published over 180 research articles in peer-reviewed international journals, in addition to several book chapters and review articles. His contributions have been recognized through several prestigious honours and fellowships, including the **ISMC Silver Medal**, the Netzsch-ITAS Award, the Marie Curie International Fellowship, and the Alexander von Humboldt Fellowship.

<<< Dr. Shashwati Sen



Dr. Shashwati Sen joined BARC in 1996 after graduating from the 40th batch of Training School. Prior to this, she did her M.Sc in Physics from Devi Ahilya Vishwavidhalaya, Indore. She joined Physics Group of BARC in 1997 and obtained her PhD degree from Mumbai University in 2003. She has worked on various high end technologies in the last 30 years including development of toxic gas sensors and growth of single crystals for application in radiation detection. Currently, she is heading the Crystal Technology Section of TPD and is involved in the growth of single crystals, which include halide crystals like CsI, NaI, $LaBr_3$, BaF_2, LiI, CaF_2 and oxides like YAG and YAP and development of detectors for gamma-rays, charged particles and neutron and delivering them to various users in DAE. She is also actively involved in the indigenous technology development of HPGe detector at BARC. She was instrumental in transferring the technology for the growth of scintillator crystals to various industries and through incubation (three technology transfers and two technology incubations). Led by her efforts, for the first time in India, private firms started commercial production of CsI and YAG as well as crystal growth furnaces in India. Dr. Shashwati has published over 150 research papers in peer reviewed journals, mentored three PhD students and is a **fellow of Maharashtra Academy of Sciences** (2025). She is the recipient of many awards including the DAE Science and Technology Excellence Award (2017), DAE-Group achievement award for her work on SS-Ti diffusion bonding (2019), Single crystal growth (2012) and Gas sensors (2009) and DAE-Solid State Symposium Young Achievers Award (2008).



Dr. Soumyaditya Mula

Dr. Soumyaditya Mula, a Scientific Officer and Head, Functional Organic Material Section, joined Bio Science Group in 2003 after graduating from the 46th batch of the BARC Training School (discipline: Chemistry). He is an Associate Professor at HBNI and a registered PhD guide at the University of Mumbai. Dr. Mula is engaged in developing advanced organic materials for departmental and societal applications, including laser dyes, Boron Neutron Capture Therapeutic (BNCT) agents, gamma-dosimeters, and cancer theranostic agents. Notably, he developed large-scale syntheses for BODIPY and Rhodamine laser dyes and established an indigenous method for large-scale production of ^{1} B-enriched L-BPA, a vital BNCT agent. He also developed first-of-its-kind, highly sensitive fluorometric gamma-dosimeters for blood and food irradiation, alongside twisted BODIPY dyes serving as heavy-atom-free triplet photosensitizers for photodynamic therapy (PDT). He also innovatively designed fluorescent sensors for detection of bio-medically important analytes as well as for cellular imaging. His research portfolio includes 85 research articles and four book chapters. His work has been featured on the cover pages of prestigious journals like JACS Au, Chem. Commun., Chem. Eur. J. etc, and highlighted in ChemistryViews, Synfacts and ChemInform. Dr. Mula developed three technologies, two of which regarding BODIPY laser dye synthesis were successfully transferred to an Indian company. He is a Fellow of the Maharashtra Academy of Sciences (MASc), a Member of the National Academy of Sciences, India (NASI), and an Editorial Board Member for Scientific Reports (Nature). He also received **SMC Bronze Medal**, DAE Young Scientist Award, ANR Fellowship for postdoctoral research in France, Young Associateship Award of Maharashtra Academy of Sciences and Raman-Charpak Fellowship for doctoral research in France.



Dr. Srinivasu Kancharlapalli

Dr. Srinivasu Kancharlapalli, Scientific Officer, Chemistry Group, BARC has been awarded SMC bronze medal. He has been recognized for his research contributions in the field of computational chemistry and materials modeling, mainly focused on energy and environmental applications. He made important contributions in areas such as photocatalytic water splitting, hydrogen storage, computational catalysis, porous materials for separation and storage of gases, advanced nuclear materials, etc. He proposed an s-triazine based graphitic carbon nitride as a possible photocatalyst for solar water splitting which was experimentally verified later. Dr. Srinivasu explored varieties of metal decorated molecules and materials for efficient hydrogen adsorption. He also studied the electronic structure, surface oxidation and thermodynamic properties of nuclear fuel materials like U_3Si_2, UAl_3, U_2Mo, etc. Recently, he has been actively working on developing computational high-throughput screening strategies to screen large database of metal organic frameworks (MOFs) to identify the top performing MOFs for CO_2 capture, Xe/Kr separation and Iodine entrapment. He trained a machine learning model for fast and accurate calculation of atomic charges in MOFs which was deployed as a python library for open-source usage and is being used by many researches in the field. Considering the excellence of his contributions, he was awarded with 'Young Scientist Award' by DAE, India (2014), 'Outstanding PhD Theses Award' by HBNI (2015), Fulbright-Nehru postdoctoral Research Fellowship (2018-2020), Member of The National Academy of Sciences, India (NASI) (2020) and **Society for Materials Chemistry (SMC) - Bronze Medal** (2025).

<<< Dr. Sugam Kumar



Dr. Sugam Kumar is a Scientific Officer in Physics Group, BARC, and Associate Professor at Homi Bhabha National Institute (HBNI), Mumbai. He joined BARC in 2009 after completing the OCES (2008–09) program, where he secured first position in Physics and was awarded the prestigious Homi Bhabha Prize. He was University Medalist in both his undergraduate (B.Sc.) and postgraduate (M.Sc.) studies. He earned his Ph.D. from HBNI and received the Best Thesis Award of the Indian Physics Association. He subsequently carried out post-doctoral research at Stockholm University, Sweden. Dr. Kumar is an expert in neutron scattering methods, and his research focuses on elucidating the physical interactions and principles governing emergent properties and phenomena in multicomponent soft-matter systems using neutron scattering and complementary techniques. He has published more than 120 research articles in internationally reputed journals, contributing to understanding of structure–interaction–property correlations in complex soft materials. He has made significant contributions to the upgradation, operation, and nationwide utilization of the Small-Angle Neutron Scattering (SANS) instrument at Dhruva reactor. He also contributes to human-resource development through the supervision and mentoring of Ph.D scholars, master's students, and trainee scientific officer. His scientific contributions have been recognized through prestigious awards, including the Young Scientist Platinum Jubilee Award of the National Academy of Sciences, India (NASI), DAE Young Scientist Award, DAE–SSPS Young Achiever Award, and **Bronze Medal of the Society of Materials Chemistry**. He is a selected Associate of the Indian Academy of Sciences and Maharashtra Academy of Sciences, as well as member of NASI.



Dr. Swayam Kesari

Dr. Swayam Kesari is a Scientific Officer in Physics Group, BARC, and Assistant Professor, Homi Bhabha National Institute (HBNI) Mumbai. He joined BARC after graduating from the 57th batch of BARC Training School. He is also involved in teaching at BARC training school. Dr. Kesari has contributed significantly in developing state-of-the-art Raman spectroscopy laboratory of SSPD, BARC and has published about 45 research articles in various reputed journals. His field of research interests are structure & dynamics studies of quantum & energy materials under extreme conditions of pressure and temperatures. A notable scientific contribution of Dr. Kesari is the recent discovery of Giant Negative Linear Compressibility (NLC) in orthorhombic CuCN, which was published in Physical Review Letters in 2025. Dr. Kesari is a recipient of **Society of Materials Chemistry (SMC) Emerging Scientist Award** 2025 and best oral presentation award at International Conference on Recent Advances in High Pressure Science and Technology in 2022.

BARC Fire Services Section

The Director General, Civil Defence and Fire Services, Ministry of Home Affairs, Govt. of India recognised the services of BARC Fire Services Section personnel and honored the organisation with a key recognition. BARC secured the 'Director General (DG) DISC', which importantly recognised the exceptional services rendered by Mr. B.C. Sahoo (Divisional Chief Operator), Mr. S. B. Rahate (Leading Fireman) and Mr. D. B. Wagmare (Fireman) towards strengthening the fire and emergency response capabilities.