



Professor INDRANIL MANNA

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Professor Indranil Manna, the Vice Chancellor of BIT Mesra, an academic with a four-decade-long career span and an active proponent of translational research in engineering is deeply involved in several national and international committees and initiatives on engineering education and technology mission, serves as a member of several national academies and policy-making initiatives, and chairs multiple review and monitoring committees on engineering sciences.

By training, Professor Manna is a metallurgical and materials engineer associated with teaching, research and academic administration since 1984. He obtained his B. Engg. Degree from Calcutta University (BE College) in 1983, M. Tech. from IIT Kanpur in 1984 and PhD from IIT Kharagpur in 1990. He was a Premchand Roychand Scholar (1992) and a Mouat Medal awardee (1999) of Calcutta University and received Honorary Doctor of Science Degrees DSc (hc) from the University of Kalyani and Kazi Nazrul University, Asansol, West Bengal, both in 2017. He was an INAE Visvesvaraya Chair Professor (2009-2011) and INAE-AICTE Distinguished Industry Professor (2007-2009) at IIT Kharagpur.

After a brief stint at Mishra Dhatu Nigam, Hyderabad (1984-85), he joined IIT, Kharagpur in November 1985 as a Lecturer and rose to the position of Full Professor in 2003 and HAG Professor in 2009. He continued to serve IIT Kharagpur until he joined CSIR-CGCRI as the Director on March 1 2010, which he continued till October 31 2012. Subsequently, he served as the Director of IIT Kanpur for five years between 7-Nov-2012 and 6-Nov-2017. During this period, he concurrently served as the National Coordinator of IMPacting Research INnovation & Technology (IMPRINT), a national technology development initiative of the MHRD, Government of India. He played an active role in several other MHRD initiatives like UAY, SPARC, UBA, RUSA, PMMMTTP, Namame Gange, etc. He was the Chairman of the Research Council of CSIR-AMPRI, Bhopal and CSIR-NML, Jamshedpur, Member of the Research Councils of BHEL, CSIR-National Physical Laboratory (NPL), Society of IIM Indore, Board of Governors of IIM Lucknow, IISER Pune, IEST Shibpur and IISER Kolkata. He was a member of the Governing Body of the Indo-US Science and Technology Forum (IUSSTF), Executive Council of AICTE, the Administrative Council of the Abdul Kalam Technical University (UP), and SAMAVESH, a NITI AAYOG Think-Tank Group. He has been actively associated with various Science and Technology (S&T) organizations in the country in various capacity like Chairman, INSA-INSPIRE Faculty Fellow Scheme (Engineering Sciences) of the Department of Science and Technology (DST), Chairman of the Program Advisory Committee (PAC) of the Metals, Materials, Mining Engineering Section of SERB-DST, Member of the Board of the Steel Research Technology Mission Initiative (SRTMI), PM Trophy Committee and R&D Board of the Ministry of Steel, and Member of the Research Council of ARCI, Hyderabad (DST) and Research Advisory Board of GAIL India and R&D of BHEL, Hyderabad. He was an active member of the committee on Science Technology Innovation Policy (STIP) of India and chaired the Surface Engineering (V12H3) group under the Advanced Manufacturing Forum of Vaishvik Bharatiya Vaigyanik (VAIBHAV) scheme inaugurated by the Hon'ble Prime Minister on 2nd October 2020. Earlier, he briefly served as an expert in NAAC and NBA. He was a Member of the Academic Council of Homi Bhabha National Institute (Department of Atomic Energy), Ramakrishna Mission Vidyamandir at Belur, and currently serves the National University of Study and Research in Law and Indian Institute of Coal Management in Ranchi in a similar capacity.

Academic and Research Contributions:

Before taking up administrative responsibility, Professor Manna taught subjects related to physical metallurgy, phase transformations, material characterisation, and surface engineering at IIT Kharagpur for 25 years (1985-2010). During this period, he visited different renowned R&D institutions and universities abroad as a guest scientist like Max Planck Institute at Stuttgart and Technical University of Clausthal (Germany), Unipress in Warsaw (Poland), Liverpool University (UK), Nanyang Technological University (Singapore), Ecole Polytechnic de Mines (France), National Institute of Materials Science at Tsukuba (Japan),

University of Tennessee (USA), and University of Ulm (Germany) with teaching or research assignments. Professor Manna has been a renowned and prolific researcher with wide-ranging research interests concerning microstructure-property correlation and modelling in structural and functional materials, including additive manufacturing, nanometric metals/composites, laser/plasma assisted surface engineering, nano/ferro-fluid and bainitic steel. His significant contributions on amorphous Al-alloys, laser surface engineering of steel/Mg/Ti alloys and thermal and magnetic properties of nanofluid and ferrofluid received keen attention from the scientific community and are highly lauded. His early contributions in moving boundary phase transformation are still widely cited. Professor Manna has authored over 325 peer-reviewed research publications, supervised 30 PhD theses, conducted about 35 sponsored projects from agencies and industry in India and abroad worth over Rupees 25 crore (\$ 3 million) and holds 3 patents.

During his initial stint at IIT Kharagpur, he is credited to have developed various research facilities and laboratories in the Metallurgical and Materials Engineering Department comprising characterization and processing tools like FEG-SEM, PLD, PIII, SOFC, electron beam welding, mechanical alloying mills, wear and erosion testing units, vacuum sealing set up, high temperature furnaces, plasma nitriding unit, etc. He was the Institute Coordinator for the Nanoscience and Technology Mission Project (2004-10), and the Vice Chairman (2004-06) and Chairman (2006-09) of the Central Research facility at IIT Kharagpur. With a major research grant from the DST, he has recently developed a well-equipped laser material processing facility at IIT Kharagpur in 2018 with a 6-kW fibre delivered diode laser with several allied analytical and processing equipment to develop structurally and functionally graded materials, composites, coatings and additively manufactured (3d printed) metallic components.

Professor Manna is a passionate teacher. His teaching interest covers subjects related to physical metallurgy, phase transformations, material characterisation and surface engineering. Besides IIT Kharagpur (1985-2020), Professor Manna has taught at Nanyang Technological University, Singapore (2000-01) and IIT Kanpur (2013-17). He continues teaching even now at BIT Mesra despite his administrative commitment. At IIT Kharagpur, he introduced two new courses on Introduction to Materials and Surface Engineering and took an active role in developing several new teaching laboratories and experimental manuals. His lectures on Surface Engineering, available in NPTEL, SWAYAM and SPARC platforms are widely referred to by the students and professionals.

Awards and Honours, and Professional Contributions:

Professor Manna is a recipient of several awards and honours, including the MRSI Distinguished Lecture Prize 2017, the Gopal Tripathy Memorial Lecture Award of Banaras Hindu University in 2015, the TWAS Prize in Engineering Sciences in 2015, and the Platinum

Jubilee Medal Lecture Award in the 98th Session of the Indian Science Congress in 2011. Earlier, he was the Sectional President of the Materials Science Section in 2009-10 and Recorder in 1998-2000 of the Indian Science Congress Association. He received the G D Birla Gold Medal of IIM in 2008, MRSI Medal in 2000, Binani Gold Medal of IIM in 1999, AICTE Career Award for Young Teachers in 1995, and INSA Medal for Young Scientist in 1992.

He received the Distinguished Alumnus Award from IIT Kharagpur in 2016 and from IEST, Shibpur in 2014. He has been a JC Bose Fellow of DST between 2012 and 2022. He was elected a Fellow of all the National Academies in India: Indian National Academy of Engineering, Delhi (INAE-FNAE) in 2005, National Academy of Sciences in India, Allahabad (NASI-FNASc) in 2005, Indian Academy of Sciences, Bangalore (IASc-FASc) in 2008 and Indian National Science Academy, Delhi (INSA-FNA) in 2010. He is a recipient of the Alexander von Humboldt Fellowship (2001-2002), DAAD Fellowship (1988-1990), DAAD Honorary Advisor (2006-09) and GTZ Research Grant (1997-99) from Germany (for independent research). He is a former Vice President (2013-16) and President (2016-17) of the Indian Institute of Metals (IIM). He was felicitated by the Ministry of Steel with the Young Metallurgist (1991), Metallurgist of the Year (2002) and National Metallurgist Award (2018). He was elected a Fellow of The World Academy of Sciences (TWAS) in 2016 and a Member of the Asia Pacific Academy of Materials (APAM) in 2014. Currently, he is serving as Vice-President (Science and Society), Indian National Science Academy (INSA), New Delhi.

Professor Manna played a pivotal role as the 14th President of INAE to make the Academy both functionally and financially autonomous. Earlier, he served as the Vice President (Fellowship and Awards) between 2015-2020 and led the INAE delegation to the USA in 2014 and the Republic of Korea in 2018. He is currently the Chair of the Working Group on Engineering Education of the CAETS and a member of the CAETS Ad hoc Committee on Policy. Recently, he played a key role as the National Coordinator in establishing the Centre for Engineering Education & Excellence (CEEE), a unique initiative of the INAE with generous funding from the Infosys Foundation and in collaboration with the 5 premier IITs (at Kharagpur, Bombay, Madras, Kanpur and Delhi) and the AICTE to improve teaching quality in Engineering Colleges under AICTE.

Personal:

Professor Manna was born on January 22, 1961 in Kolkata, is married to Mrs. Snigdha Manna and has a son (Rudroneel), a daughter (Oindrila), a son-in-law (Matthew) and a grandson (Edward). He was an active sportsperson in his student days, is an avid sports and music lover and is passionate about technology development for the nation and society.