



# International Conference on Novel Materials and Technologies for Energy and Environment Applications (NMTE2A-2022)

Organised by:

Department of Chemical Engineering

Birla Institute of Technology & Science, Pilani - Hyderabad Campus

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## Keynote Speaker

**Prof. Ashutosh Sharma**

*Institute Chair Professor IIT Kanpur*

*J C Bose National Fellow*

*Former Secretary at Department of Science  
and Technology, Government of India*

### **Science, Technology and Innovation in the New Millennium**

This talk is NOT about a specific area or product of science, but an examination of some of the compelling processes of doing science and its translation to useful applications. Such processes include, but are not limited to: the power of lateral thinking and scientific commonsense; connecting the dots, creativity, being interdisciplinary; relating a narrow domain of research to the larger concerns of science and, while doing all this, putting some fun, quality and excitement back in research starting at PhD level! In short, everything not addressed in classrooms or even in labs! The talk will indicate some major oncoming challenges, opportunities and directions in scientific research such as: Sustainable Development, Convergence of technologies, Rise of Intelligent Machines & Industry 4.0/Society 5.0, Managing Data and information and knowledge: Science Communication and Popularization; Connecting Science to Innovation and Society; and Nurturing Diversity. To meet these and other challenges, some concepts such as these are useful: Invention vs innovation; knowledge pyramid and circle; Tool centric vs Problem centric science; Connecting to Startups, Industry; Research with relevance and direction; Incremental vs profound research; Reward and recognition structures in academia, R&D; Balance of Juggad, Dhandha, Panga; and Scientific Social Responsibility. The idea is to encourage awareness and debate on some of the issues that concern the principles, processes and practice of science in the future which is rushing at us at ever faster (even exponential) rate!

*Prof. Ashutosh Sharma is a prominent academician and researcher with some path-breaking contributions in nanotechnology and its interdisciplinary applications. He is presently the Institute Chair Professor in Chemical Engineering at the Indian Institute of Technology at Kanpur. Prof. Sharma received his B. Tech in Chemical Engineering from IIT Kanpur (1982), MS from the Pennsylvania State University (1984), and Ph.D. from the State University of New York at Buffalo (1987). He joined IIT Kanpur as an Assistant Professor in Chemical Engineering in 1990, becoming a full Professor in 1997. Prof. Sharma served as Secretary to the Government of India from 2015 to 2021, heading the Department of Science and Technology (DST), where he helped initiate several new and innovative research programs. He is the recipient of many prestigious national and international awards.*

[Link for online session \(Webex\)](#)