



भौतिक अनुसंधान प्रयोगशाला, अहमदाबाद Physical Research Laboratory, Ahmedabad

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69_PRL Ka Amrut Vyakhyaan

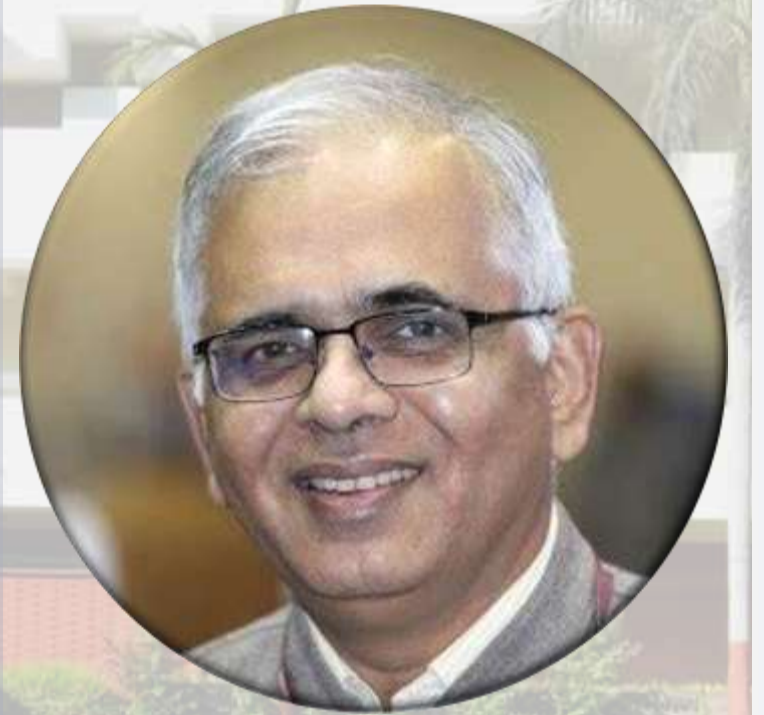
Tuesday, 22 November 2022

@ 04:00 PM (IST)

**“Addressing Indian Societal
problems through Science,
Technology and Innovation in
post-Independent India”**

Dr. Shekhar C. Mande

Distinguished Professor, Bioinformatics Centre, Savitribai
Phule Pune University, Pune and Honorary Distinguished
Scientist, National Centre for Cell Science, Pune.



<https://youtu.be/IOGzzYSDIsM>



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Title: “Addressing Indian Societal problems through Science, Technology and Innovation in post-Independent India”

Speaker: Dr. Shekhar C. Mande

Distinguished Professor, Bioinformatics Centre, Savitribai Phule Pune University, Pune and Honorary Distinguished Scientist, National Centre for Cell Science, Pune.

On Tuesday, 22 November 2022

Abstract

At the time of Independence in 1947, India's GDP was mere Rs. 2.7 lakh Crore, with very few education institutions, industry and means of social support. The societal challenges to uplift people out of poverty, provide adequate food, healthcare and jobs remained daunting. Under these circumstances, India adopted Science, Technology and Innovation as one the primary vehicles to address these challenges. Large infrastructure was created in the initial decades, appropriate global practices were adopted in agriculture, and several innovative technologies were developed. As a result, it is estimated that India lifted more than 400 million people out of poverty between 2005 and 2020 alone. Many of the challenges faced by the society required local technologies and local innovations. India's S&T community rose spectacularly to these challenges and found innovative solutions to each of them. Dr. Mande will highlight a few examples during his talk.

The Speaker

Dr. Shekhar C. Mande is a structural biologist and an X-ray crystallographer of international repute. He is well-known worldwide for his research on the structural characterization of mycobacterium tuberculosis proteins and the computational analysis of genome-wide protein interactions. Dr. Shekhar Mande holds a PhD in molecular biophysics from the Indian Institute of Science in Bangalore. He worked with Professor Wim G. J. Hol for his post-doctoral research at University of Groningen, Netherlands, and then as a senior fellow at the University of Washington, Seattle, USA.

After returning to India in 1995, he served at Institute of Microbial Technology, Chandigarh; Centre for DNA Fingerprinting and Diagnostics, Hyderabad; and the National Centre for Cell Science, Pune. He was the Director of the National Centre for Cell Science, Pune.

From 2018 to April, 2022, Dr. Mande was the Director General of Council of Scientific and Industrial Research (CSIR) and Secretary of the Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology. Dr. Mande is currently a Distinguished Professor at Bioinformatics Centre, Savitribai Phule Pune University at Pune, and an Honorary Distinguished Scientist, National Centre for Cell Science, Pune.

He is a Fellow of all the three National Academies of Sciences in India. He is the recipient of the prestigious Shanti Swarup Bhatnagar Prize for Science and Technology. He was awarded Wellcome Trust International Senior Fellowship. In addition to these achievements, he is highly acclaimed scientist, science educator and science administrator, with several national and international awards and honours to his credit, which are too numerous to name individually.



About PRL

The Physical Research Laboratory (PRL), known as the “cradle of space science” in India, is one



of the premier research institutes founded in 1947 by Prof. Vikram Sarabhai, a renowned Cosmic Ray Scientist, a great visionary and institution builder. PRL played a seminal role in producing a highly motivated cadre of space scientists and the technologists of highest international repute. The first scientific rocket launched from Thumba on 21st November-1963 and many other rockets launched thereafter contained payloads developed at PRL. Dr. Sarabhai initiated many of these scientific and technical activities at PRL which eventually led to the formation of the Indian Space Research Organization (ISRO). Therefore, PRL is known as the “cradle of space science” in India. Further, the research in the area

of Plasma Physics expanded to the formation of the Institute of Plasma Research (IPR).

As an institution PRL is unique in that it conducts fundamental research in a wide range of research areas from the Earth to the cosmos, and comprising Astronomy and Astrophysics; Solar Physics; Space and Atmospheric Sciences; Theoretical Physics; Geosciences; Atomic, Molecular and Optical Physics, Astrochemistry; and Planetary Sciences and Space Exploration. PRL is one of the rare research institutes of international repute wherein research in such diverse fields of sciences is carried out using several state-of-the-art experimental facilities that exist under one umbrella.

Along with the ongoing research, several new initiatives have been taken up during the last few years. The Multi-Application Solar Telescope (MAST) at Udaipur Solar Observatory has been operationalized. PRL initiated scientific programmes in frontier areas of research, which include a search for exo-planets, laboratory studies of interstellar grains, laboratory synthesis of cold astro-molecules and experimental studies in the field of quantum optics. PRL is also developing several scientific payloads as a part of ISRO’s larger vision and contributing to roadmap for competitive scientific exploration of the solar system and beyond. In particular, PRL has been contributing significantly not only in building instruments for space missions, such as Chandrayaan-1, Chandrayaan-2, AstroSat and upcoming Aditya-L1, Chandrayaan-3 and planetary and space missions, but also by bringing out new and insightful science results.

PRL contributes to several national and international research programmes and to human resource development through its Doctoral and Post-Doctoral Programmes, capacity building programmes, such as UN Course on Space Science, and science and engineering internship programmes. PRL contributes significantly to society through its Outreach Programmes by periodically organizing science exhibitions and Open Houses, planned visits of students of various school and college to PRL, and popular talks at various institutions to not only share the excitements of the advancements of contemporary scientific findings but also to encourage students to take up sciences as their research career.

