



भौतिक अनुसंधान प्रयोगशाला, अहमदाबाद

Physical Research Laboratory, Ahmedabad

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PRL Ka Amrut Vyakhyan-22

Wednesday, 29 December 2021

@ 16:00 hrs. (IST)

**“From P. C. Ray to the present:
Chemistry in Action”**

Prof. V. Chandrasekhar

Centre Director,
TIFR Centre for Interdisciplinary Sciences, Hyderabad,
Department of Chemistry,
Indian Institute of Technology Kanpur, Kanpur



<https://youtu.be/hfbIGXp14RM>

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Title: “From P. C. Ray to the present: Chemistry in Action”

Speaker: Prof. V. Chandrasekhar

Centre Director, TIFR Centre for Interdisciplinary Sciences, Hyderabad,
Department of Chemistry, Indian Institute of Technology Kanpur, Kanpur

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Abstract

We will trace the history of modern chemistry in India through the life and works of Acharya Prafulla Chandra Ray. Although India had a rich tradition in metallurgy and medicine, it was Acharya Ray who set up the first modern Chemistry School in the country. Among his students include famous physicists, S. N. Bose and M. Saha. Acharya Ray is extremely well known for his work on mercurous nitrite. But he did much more. He worked on diverse topics ranging from inorganic chemistry to some aspects of organic chemistry. He was conscious of the role of science in the development of industry. He set up the first chemical industry in the country, the Bengal Pharmaceuticals, and Chemicals. Acharya Ray was also a great Nationalist and Philanthropist. He left an indelible impression on many of his colleagues and the younger generation. We will also look at the development of chemistry post-Indian independence and will look at some representative Indian contributions. Finally, we will also examine how chemistry has contributed to the country's economy.

The Speaker

Prof. Vadapalli Chandrasekhar was born at Calcutta (now Kolkata) in November 1958. He obtained his M.Sc. from Osmania University, Hyderabad, India, in 1977. He received his Ph.D. degree in 1982 from the Indian Institute of Science, Bangalore under the supervision of Prof. S. S. Krishnamurthy. He worked as a post-doctoral research associate with Professor R. R. Holmes at the University of Massachusetts, Amherst, USA (1983-1986) and then as a senior research officer in the Indian Petrochemicals Corporation at Vadodara for a year. He then joined the Department of Chemistry at the Indian Institute of Technology, Kanpur in 1987 where he has been a full professor since 1995. He served as the Head of the Department of Chemistry, IIT Kanpur (2008-10), and as the Dean of Faculty Affairs, IIT Kanpur (2011-12). He also worked at the Tata Institute of Fundamental Research, Centre for Interdisciplinary Sciences, Hyderabad, as a Senior Professor/Dean (2012-14) and as the Director (2014-17), National Institute of Science Education and Research (NISER), Bhubaneswar, India. Currently he is the Centre Director of the Tata Institute of Fundamental Research, Hyderabad. His research interests are in the area of molecular materials, inorganic rings and polymers, main-group organometallic chemistry and polynuclear metal assemblies. He has been a recipient of several national and international awards including the Shanti Swarup Bhatnagar Award of the Council and Scientific Industrial Research, India, and the Friedrich-Wilhelm-Bessel Research Award of the Alexander von Humboldt Foundation, Germany.

He is an elected Fellow of the Indian Academy of Sciences, Bangalore, the National Academy of Sciences, Allahabad, the Indian National Science Academy, New Delhi and the World Academy of Sciences, Trieste, Italy. He has been on the editorial board of several journals including, Organometallics. Currently, he is on the editorial board of Dalton Transactions as its Associate Editor. His research work is documented in 360+ publications.

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 astromolecules 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.