



Remembering Sir K.S. Krishnan
Sir Krishnan's 125th Birth Year Lecture Series

**“Establishing a Platform for Solution
Engineering Redefining Innovation”**

By

Distinguished Professor Suresh K. Bhargava,
(Member of Order of Australia)
Queens Honour 2022, FRSC, FTSE, FAAS, FNAE, FTWAS-UNESCO
RMIT University, Melbourne, Australia
Academy Professor, AcSIR

December 12, 2022

15:30 IST

at

Auditorium, CSIR-National Physical Laboratory
Dr. K.S. Krishnan Marg, New Delhi

Organised by

Academy of Scientific & Innovative Research, Ghaziabad, India
and
CSIR – National Physical Laboratory, New Dehli India

Brief Biography of Sir K.S. Krishnan

Padma Bhushan Sir K.S. Krishnan was born on December 4, 1898, in Tamil Nadu. After finishing his degree in Physics, he became a demonstrator in Chemistry as there were no positions available in physics. In 1920 he went to work as a research scholar at the Indian Association for the Cultivation of Sciences (IACS) Kolkata with C.V. Raman. There he carried out light scattering experiments. He moved to Decca university (now in Bangladesh) in 1928 and worked on Magnetic Properties of Crystals. He came back to IACS in 1933 as Professor, where he continued research on magnetic properties of liquids in reaction to their structure. Sir Krishnan was elected fellow of Royal Society (FRS) in 1940. He joined Allahabad University in 1942 where he took up Physics of solids. In 1947, National Physical Laboratory was founded and he was appointed as its first director.



Sir Krishnan's breadth of interest was remarkable. He worked on areas as diverse as scattering of light from liquids and gases, magnetism and structure of matter, thermionic emission and optical and transport properties of the condensed phase of matter.

Sir Krishnan rose to prominence as Raman's collaborator after Raman's seven-year effort to discover molecular scattering accompanied by changes in wavelength, now known as the Raman Effect, was successful.

Not one to relax on the strength of his role in the discovery of the Raman effect, Sir Krishnan turned towards the magnetic properties of molecular crystals and graphite. **Prof. Shoenberg** in his lecture "sealing wax and string" highlighted the ingenuity and experimental skill with which Sir Krishnan teased out small quantitative changes and correlated them with changes in molecular orientation and structure. This was well before the development of magnetic resonance, Fourier transform infrared spectroscopy, and the tunnelling microscope.

Sir Krishnan was the first and foremost Indian scientist to investigate quantum approaches in condensed matter phenomena; his work with Prof. A.B. Bhatia on the resistibility of metals, alloys, and liquid metals foreshadowed modern Green's function approaches by more than two decades. His unwavering commitment to high-quality physics until the end was unusual among famous Indian scientists.

CSIR NPL had the fortune to have Sir Krishnan as director for about 14 years. These were the formative and eventful years that decided the mandate of the laboratory. CSIR NPL became a premier Physics laboratory and custodian standards of physical measurements under his direction. While being science administrator and director, he continued research and published several papers in the prestigious journal Nature on experimental and theoretical studies of metal work functions and energy and temperature distributions of heated solids.

Sir Krishnan received numerous honours for his scientific achievements, including the fellowship of almost all Indian academics and of several academics and societies abroad, the Knighthood of the British Government, Fellow of Royal Society and the first Bhatnagar Memorial Award. In 1954 He was awarded Padma Bhushan by Government of India.

About The Speaker

Distinguished Professor Suresh K Bhargava

Academy Professor, AcSIR

Distinguished Professor Suresh Bhargava is a world-renowned interdisciplinary scientist with decades of leadership in academia and industry and a lifelong commitment to Australia's relations with India.

In 1990, Professor Bhargava started at RMIT, where he established a state-of-the-art research centre that is now world-renowned as CAMIC. The centre has developed new products and technologies that benefit society and produced real-world graduates. Professor Bhargava has been an inspiring mentor to some of the greatest minds who have served at institutions such as Stanford and Oxford, as well as multinationals such as Alcoa, BHP Billiton and Rio Tinto.



He is the most publishing Prof. of RMIT. He has authored/co-authored over 600 highly cited refereed journal articles, one book, 16 book chapters, 12 relevant patents, more than 150 keynote/ plenary lectures and is a solution provider to many industries. His h-index is 79, i-10 index 421, RG score 51.84 and Citation over 22600 with 10/day rate of rise. His contributions to academia have been truly unrivalled. He is author of the first book of its own kind - Additive Manufacturing in Chemical Sciences and Chemical Engineering- a hit book in the market. He is holding distinguished professorships at top universities in 6 countries, he is an outstanding ambassador of Australian higher education around the world.

He has always had a lifelong commitment in connecting India and Australia. Through advisory roles with Australian PMs, Premiers and Governors on Indo-Australian relations, he has been a founding architect of the Australia-India Strategic Research Fund. Recently, he developed an award-winning Global PhD program connecting RMIT with AcSIR and thus 39 national CSIR research laboratories of India, providing a platform for nurturing high-quality, globally agile PhD students through collaborative research and international engagement.

Recently in 2022, he received the prestigious distinction of the “Member of the Order of Australia”. As a winner of some of the most prestigious awards in engineering, including the ‘CHEMECA medal’, he is the first RMIT researcher ever to receive the RMIT University Vice-Chancellor’s Research Excellence Award twice. He was also honoured in 2014 with the ‘P.C. Ray Chair’ by the Indian National Science Academy. He received Honoris Causa D.Sc. Degree from Rajasthan University, presented by the President of India. An inspirational figure to many, he pushed at boundaries and developed innovative ways for how universities should work with industry, creating jobs and changing lives.

Remembering Sir K.S. Krishnan

Sir Krishnan's 125th Birth Year Lecture Series

On December 12, 2022 (Monday)
at 15:30 IST onwards

at Auditorium, CSIR- National Physical Laboratory,
Dr K S Krishnan Marg, New Delhi 110012

Programme

- 15:30 hours Welcome and Remembering Sir K.S. Krishnan
Prof. Venu Gopal Achanta,
Director, CSIR-National Physical Laboratory
- 15:50 hours Address and Introduction of Prof. Suresh K. Bhargava
Prof. Ajay Dhar
Director, Academy of Scientific and Innovative
Research
- 16:00 hours. Establishing a Platform for Solution Engineering
Redefining Innovation
Prof Suresh K Bhargava,
Academy Professor, AcSIR
Distinguished Professor, RMIT Australia
- 16:50 hours Vote of Thanks
Prof. Rina Sharma,
AcSIR Coordinator
Chief Scientist, CSIR National Physical Laboratory
- 17:00 hours Tea

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all are cordially invited