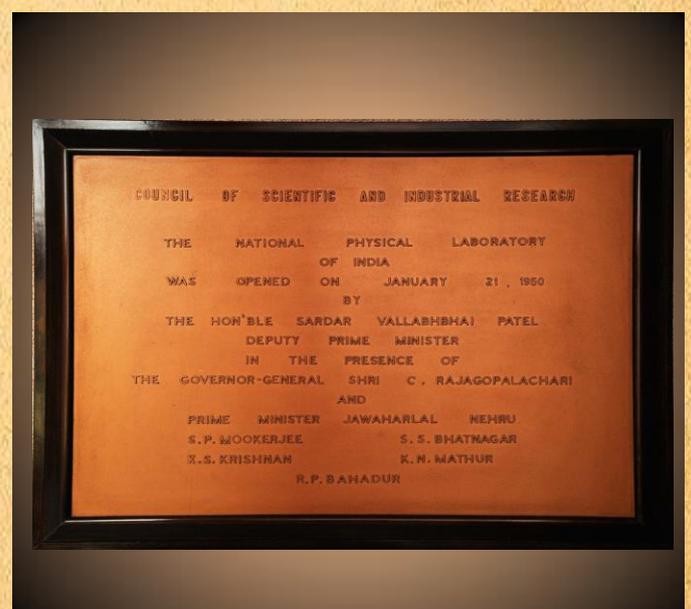
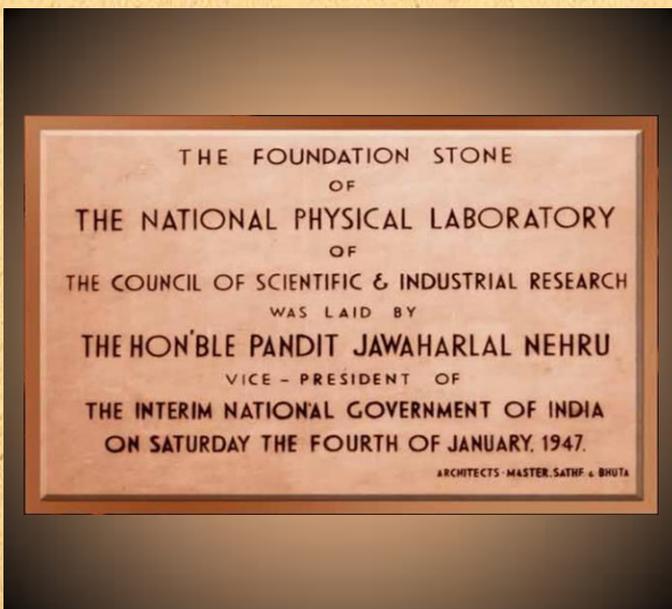


GLIMPSES OF CSIR-NPL



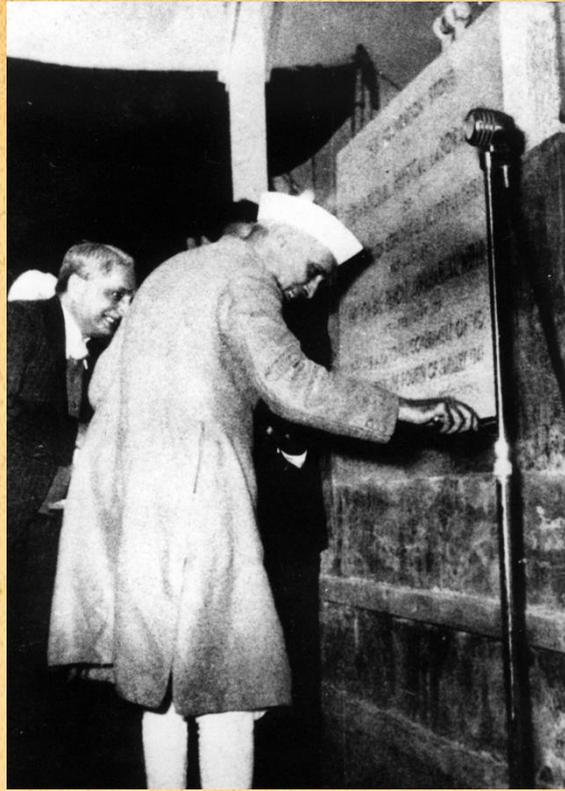
BRIEF HISTORY

The National Physical Laboratory was the first among the chain of national laboratories to be set under the Council of Scientific and Industrial Research (CSIR). The necessity for such a laboratory for the promotion of scientific and industrial research and the development of industries in the country was felt for quite some time, but it was only after independence that the plan matured. The laboratory, at its present site was formally opened by the late Deputy Prime Minister Sardar Vallabhbhai Patel in January 1950, although, it had started functioning earlier at the premises of the University of Delhi. The laboratory was fortunate in having as its first Director, the late Dr. K.S. Krishnan, and eminent physicist of international standing, whose guidance, during the formative stages of the laboratory contributed much to its present high stature.

Objectives

The scope and nature of work of the laboratory have been formulated after a close study of the functioning of similar institutions in advanced countries. As a result, the National Physical Laboratory has been entrusted with the setting up and maintenance of the basic standards of mass, length and time as well as the derived standards for electrical and electronic industries, thermometry, photometry and radiation.

Considerable amount of effort is necessarily directed towards the maintenance of standards and supplying working standards to industries, universities and research institutions. In addition, research of both pure and applied nature is actively pursued. Industries are also helped by the development of new processes, utilising as far as possible indigenous materials.



The foundation stone of the National Physical Laboratory was laid by the late Prime Minister, Shri Jawaharlal Nehru on the 4th January 1947 and the building was formally opened by the late Deputy Prime Minister, Sardar Vallabhbhai Patel on the 21st January 1950.

VISIONARIES OF NPL

Over the years, the Laboratory has more than realized that hope by not only fulfilling its primary mandate as the keeper of measurement standards but also substantially expanding its research activities to emerge as a leading national institution for research in a whole gamut of areas in the physical sciences. The credit for that goes to all the visionaries of NPL.

Dr. Shanti Swarup Bhatnagar



He was the first Director of the Board of Scientific and Industrial Research (BSIR) which was set up in 1940. He initiated structural changes in the management of the BSIR and, in the process, he visualized the need for an umbrella scientific body for steering science and technology developments in the country which led to the creation of the Council of Scientific and Industrial Research (CSIR). Established by a resolution of the then Central Legislative Assembly, the CSIR came into operation on September 26, 1942.

He was also the first Chairman of the University Grants Commission (1953-55). He was elected a Fellow of the Royal Society (FRS), London, in 1943. In the same year, the Society of Chemical Industry, London, elected Dr. Bhatnagar as an Honorary Member and later as Vice President. He was the President of the Indian Chemical Society, the National Institute of Sciences

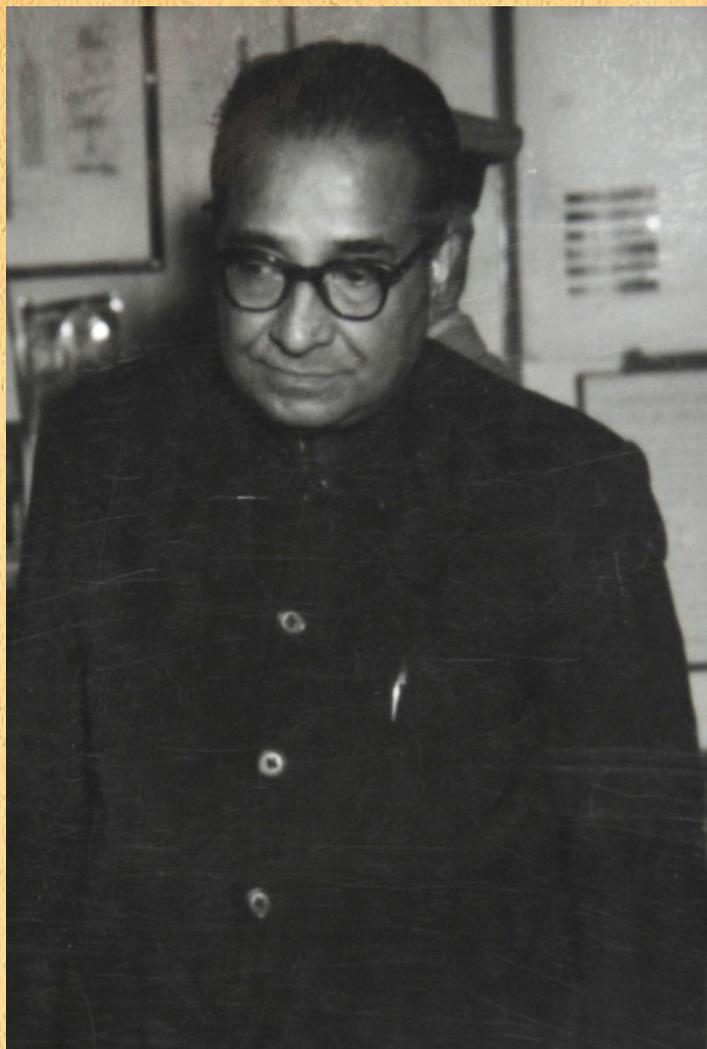
of India (now known as the Indian National Science Academy) and the Indian Science Congress. He was awarded the title Padma Vibhushan by the President of India in 1954 for Science and Engineering.

Dr. Bhatnagar is also hailed as the architect of the National Physical Laboratory (NPL). He had strong and firm belief that accurate and reliable measurements in manufacturing business, commercial activities and goods trading are crucial for keeping the markets competitive, assigning costs in commerce and trade as well as in strengthening the overall economy of the country. If the country has to flourish and make progress in manufacturing, business and trade, there is a need to put in place a proper measurement system that should ensure accurate and reliable measurements nationwide.

Dr. Bhatnagar, therefore, visualized the need for a standards laboratory that would serve as a national metrology institute offering national standards of physical measurements as well as conducting basic and applied research in measurement standards. It was in this context that Dr. Bhatnagar first mooted the idea of setting up a National Physical Laboratory as early as 1941.

Dr. Bhatnagar died on January 1, 1955. To pay tribute to this great scientist, the father of the CSIR family, the CSIR decided to institute an award in his memory, named The Shanti Swarup Bhatnagar Award. The awards are given in seven disciplines: (1) Biological Sciences; (2) Chemical Sciences; (3) Earth, Atmosphere, Ocean and Planetary Sciences; (4) Engineering Sciences; (5) Mathematical Sciences; (6) Medical Sciences; and, (7) Physical Sciences.

Dr. K.S. Krishnan



If Dr. Bhatnagar was the architect, Dr K.S Krishnan is justly acknowledged as the builder of the NPL. He laid down the roadmap for the Laboratory to become a premier physics research institution in the country. He was the first director of the NPL. Appointed in 1947, he continued to serve it for 14 years till his death in 1961. Dr Krishnan was a scientist of eminence, better known to the world as the co-discoverer of Raman Effect, a

discovery which brought the first and, till date, the only Nobel Prize in science to India. He was a pioneer in condensed matter physics, first to explore many interesting phenomena in the solid and liquid states of matter after the birth of quantum mechanics, in particular how heat is distributed in solids of various shapes, namely rods and coils, when heated in vacuum. He was elected a Fellow of the Royal Society (FRS) in 1940.

Dr. Krishnan was not new to the Laboratory when he took over as its Director. Prior to his appointment, he was actively associated with the formation of the Laboratory as a member of the Planning Committee, which was constituted by the CSIR for drawing up its plan. The biggest challenge

before Dr. Krishnan was how to raise the Laboratory from scratch. He and Dr K.N. Mathur, who was earlier a member secretary of the Planning Committee and later Deputy Director of the Laboratory, were able to get the NPL built, establish the scientific infrastructure and also build the necessary scientific manpower for leading the Laboratory to national and international prominence in measurement standards, applied research and low temperature physics.

In 1956, Dr Krishnan was elected a Foreign Associate of the U.S. National Academy of Sciences. He was the first recipient of the Bhatnagar Award in 1958. The Government of India made him a National Professor in 1958. He was a founder member of the International Union of Crystallography. Among the other members were Max Theodor Felix Von Laue (1879- 1960) and William Lawrence Bragg (1890-1971). He was the President of the National Academy of Sciences and also of the National Institute of Sciences of India (now known as the Indian National Science Academy). He was the Vice President of the International Union of Pure and Applied Physics (IUPAP) and the International Council of Scientific Unions (ICSU), now known as the International Council for Science. Dr Krishnan breathed his last on June 13, 1961, when he was still the Director of the NPL.

PLEASANT MEMORIES



Sardar Vallabhbhai Patel, Dr. Shyama Prasad Mookerjee and Dr. S.S. Bhatnagar during the Inaugural Ceremony on January 21, 1950



Sardar Patel delivering the Inaugural Speech on January 21, 1950



National Anthem during the Inauguration of NPL



Sir C. Rajagopalachari speaking on the occasion of the opening ceremony of the Laboratory on January 21, 1950



Sh. Triguna Sen, Union Minister for Education, Government of India cutting the ribbon to declare NPL open for the visitors (10/08/1968)



NPL Open Day: Demonstration of 3D Photographs prepared in the Laboratory (15/08/1972)

FEW MILESTONES



Standard weights and measures, designed by NPL and manufactured by the Government Mint, for the use of Legal Metrology Departments



Development of Indelible Ink is NPL's significant contribution to democracy



Prototype Electrostatic Photocopying Machine developed at NPL in 1970



Glass Receptacles with original manuscript of the Constitution of India for its long term preservation

SPECIAL MOMENTS



Lord Halifax, Ex. Viceroy of India and Lady Halifax in NPL (1952)



Clement Attlee, Prime Minister of United Kingdom with Dr. K. S. Krishnan, Director, NPL (1953)



S. R. Sidky, Minister for Agriculture, Egypt in NPL (1954)



Marshal J. B. Tito, President of Yugoslavia with Dr. K. S. Krishnan (1954)



G. A. Nasser, President of Egypt with Dr. K.N. Mathur, Deputy Director, NPL (1955)



The Crown Prince of Saudi Arabia in NPL (1955)



The Princess of Laos in NPL (1955)



Queen Ratna of Nepal in NPL (1955)



Zhou Enlai (Chou En-Lai), Premier of People's Republic of China in NPL (1956)



Tanka Prasad Acharya, Prime Minister of Nepal in NPL (1956)



Harold Macmillan, Prime Minister of United Kingdom with Dr. W. M. Vaidya, Head, Optics Division (1958)



Prince Philip, Duke of Edinburgh in NPL (1959)



Prince Akihito of Japan in NPL (1960)



U. Nu, Prime Minister of Burma in NPL (1961)



King Hussein I of Jordan with Dr. P. K. Kichlu, Director, NPL (1963)



Georges Raymond Pompidou, Prime Minister of France along with delegation in NPL (1965)



Ms. Indira Gandhi, Prime Minister of India presenting Bhatnagar Award to Dr. A. R. Verma, Director, NPL (1966)



Ms. Ne Win, wife of Prime Minister of Burma with Dr. A. R. Verma (1968)



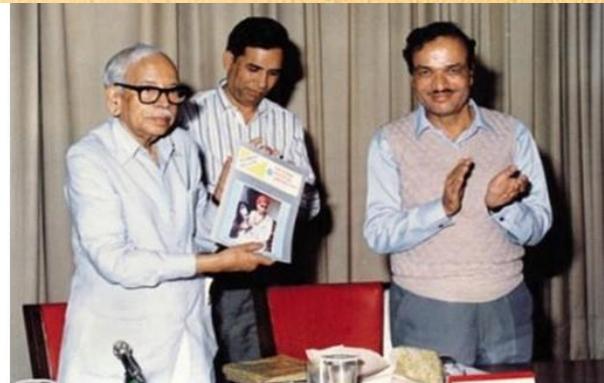
Dr. P.M.S. Blackett with Dr. A. R. Verma and Dr. A. P. Mitra (1971)



Dr. C. V. Raman in NPL (1971)



Dr. Nurul Hassan, Minister of Science & Technology in Force Standards Laboratory (1977)



Dr. D. S. Kothari, Chancellor, JNU releasing NPL Technical Bulletin. Also seen are Dr. S. K. Joshi, Director, NPL and Dr. Krishan Lal (1988)



Sh. Chandra Shekhar, Prime Minister of India inaugurating an International Workshop at NPL (1991)



Dr. P. Rama Rao, Secretary, DST releasing Indian Reference Materials. Also seen are Dr. E. S. R. Gopal, Director, NPL, Dr. Krishan Lal and Dr. P.K. Gupta (1992)



Dr. R. A. Mashelkar, DG, CSIR launching NPL website (2001)



Dr. A. P. J. Abdul Kalam, President of India, visiting X-ray characterization laboratory (2003)



Sh. Kapil Sibal, Minister of Science & Technology and Ocean Development, delivering an address at the CSIR Foundation Day in NPL (2004)



School students during NPL Open Day in NPL (2005)



Signing ceremony of MoU between NPL and KRISS, Korea, in the field of Metrology (2006)



Inauguration of National Conference on Radio Science on the occasion of Diamond Jubilee of Radio Science Division (2007)



India International Science Festival (IISF 2016) held at CSIR-NPL



Smt. Renuka Chowdhury, Chairperson Parliamentary Committee on Science and Technology, Environment & Forests at CSIR-NPL (2016)



Inauguration of AC Power & Energy Standard (2017)



CSIR Leadership Meet at CSIR-NPL (2017)



School students during NPL Open Day (2017)



Visit of Prof. K. Vijay Raghavan, Principal Scientific Adviser to the Govt. of India (2018)



Visit of Hon'ble Minister of State Dr. Jitendra Singh (2018)



Inauguration of Wind Tunnel Facility by Hon'ble Dr. Harsh Vardhan (2018)



Release of BND by Hon'ble Dr. Harsh Vardhan (2018)



School students during NPL Open Day (2019)



Signing of MoU between CSIR-NPL and BPCL for Petroleum BND (2019)



Visit of Dr. Shekhar C. Mande, DG CSIR (2020)



AdMet-2020



Hon'ble PM Shri Narendra Modi delivered the inaugural address at the National Metrology Conclave 2021 on the 75th Foundation Day of CSIR-NPL.



Inauguration of the Poster Gallery by Hon'ble Minister Dr. Harsh Vardhan (4th January 2021)



Hon'ble Minister Dr. Harsh Vardhan releases the Book titled, 'Metrology for Inclusive Growth of India' (4th January 2021)



Hon'ble Minister Dr. Harsh Vardhan releases 'Thesaurus of NPL' (4th January 2021)



80th CSIR Foundation Day was celebrated at the CSIR-NPL. Shri Venkaiah Naidu, the Hon'ble Vice President of India, was the chief guest of the occasion, and Dr Jitendra Singh, Hon'ble Minister (S&T, ES, PMO, DOPT), graced the occasion with his august presence (26th September 2021)

Science knows no
country, because
knowledge belongs to
humanity, and is the torch
which illuminates the
world.

-Louis Pasteur



CSIR- National Physical Laboratory

Dr. K.S. Krishnan Marg

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