

Shanti Swarup Bhatnagar Award

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Shanti Swarup Bhatnagar was a great Indian scientist and is known as '**The Father of Research Laboratories**'. He was also the Founder-Director of the **Council of Scientific & Industrial Research (CSIR)**. His contributions to the magnetochemistry and physical chemistry of emulsions were widely acknowledged. Dr. Shanti Swarup Bhatnagar also did commendable work in applied chemistry. In his honor, the prestigious "**Shanti Swarup Bhatnagar (SSB) Prize for Science & Technology**" was established.

Life of Shanti Swarup Bhatnagar

Shanti Swarup Bhatnagar was **born on February 21, 1894, in Bhera**, Punjab (now in Pakistan). At an early age, he developed an interest in **engineering and science**, geometry and algebra, and in making mechanical toys.

Education and Career

Shanti Swarup Bhatnagar enrolled at **Forman Christian College in 1913** to pursue a BSc degree. He studied **physics and chemistry**. In 1921, he went to England to complete his DSc (Doctor of Science) at London University after finishing his Master's degree.

- Bhatnagar returned to India in 1921, joined **Banaras Hindu University**, and created an active school of **physico-chemical research**.

Contribution of Shanti Shanti Swarup Bhatnagar

Dr. Bhatnagar played a significant role in building **post-independent Science and Technology** infrastructure and in the formulation of India's Science and Technology policies.

- **He held a number of important positions in the Government:**
 - First chairman of the University Grants Commission (UGC).
 - Secretary of the Ministry of Education and the Government's Educational Advisor
 - Secretary of the Atomic Energy Commission
 - First Secretary to the Ministry of Natural Resources and Scientific Research
- He played a significant role in the establishment of **India's National Research Development Corporation (NRDC)**.
- After Independence, he was an ardent proponent of industrial research, and his negotiations with the oil industries resulted in the establishment of several **oil refineries in India**.

Contribution to Chemistry

His contributions to magnetochemistry and the physical chemistry of emulsions were widely acknowledged.

- **Magnetic Chemistry:** Bhatnagar and K.N. Mathur jointly invented the **Bhatnagar-Mathur Magnetic Interference Balance** in 1928.
 - It was one of the most sensitive instruments for determining magnetic properties.
- **Work in applied and industrial chemistry:**
 - The first industrial problem undertaken by Bhatnagar was the development of a process to **convert bagasse (peelings of sugarcane) into food cake for cattle**.
 - **Attock Oil Company** was having difficulty drilling for crude oil because the thick, viscous agent used to prevent oil leakage into the drill bit kept solidifying. Shanti Swarup Bhatnagar asked Attock to add **acacia gum**, also called Indian gum, obtained from the sap of the acacia tree, to the mixture to reduce the viscosity of the fluid.
- **During World War II**, Bhatnagar worked on innovations for the British army and Indian troops.
 - He developed **anti-gas cloth and plastic from waste**, as well as a method to use petroleum extraction byproducts in the oil industry.

Honours

Shanti Swarup Bhatnagar's contributions to science were acknowledged with several prominent **honours**.

- Fellow of **Indian Academy of Sciences, 1934**
- Awarded the 'Order of the British Empire' (OBE) in 1936.
- Fellow of the Royal Society in 1943.

- President of the Indian Chemical Society, National Institute of Sciences of India, and Indian National Science Congress
- Padma Bhushan in 1954.

Shanti Swarup Bhatnagar Award

The prestigious **Shanti Swarup Bhatnagar Prize**, instituted in 1958 by the Council of Scientific and Industrial Research (CSIR), is awarded for excellence in the sciences and is a tribute to the first Director-General of CSIR, Shanti Swarup Bhatnagar.

- **Eligibility Criteria:** Any citizen of India engaged in research in any field of science and technology **up to the age of 45 years** as reckoned on December 31st of the year preceding the year of the Prize.
 - **Persons of Indian Origin (PIO) and Overseas Citizens of India (OCI)** working in India are also eligible.
- **Nature of the Prize:** SSB Prizes, each of the value of **Rs 5 lacs**, are awarded annually for notable and outstanding research, applied or fundamental, in the **following disciplines**:
 - Biological Sciences
 - Chemical Sciences
 - Earth, Atmosphere, Ocean and Planetary Sciences
 - Engineering Sciences
 - Mathematical Sciences
 - Medical Sciences
 - Physical Sciences
- **Presentation of the Award:** The names of the recipients are announced on **September 26**, the **CSIR Foundation Day**, and awarded at a formal presentation ceremony arranged by CSIR.

Shanti Swarup Bhatnagar Award 2022

Category	List of recipients
Biological Sciences	- Dr Ashwani Kumar - Dr Maddika Subba Reddy
Chemical Sciences	- Dr Akkattu T Biju - Dr Debabrata Maiti
Earth, Atmosphere, Ocean and Planetary Sciences	- Dr Vimal Mishra
Engineering Sciences	- Dr Dipti Ranjan Sahoo - Dr Rajnish Kumar

Mathematical Sciences	- Dr Apoorva Khare - Dr Neeraj Kayal
Medical Sciences	- Dr Dipyaman Ganguli
Physical Sciences	- Dr Anindya Das - Dr Basudeb Dasgupta

However, the 23 winners across disciplines in 2021 and 2022 are **all men**. For the second time in a row, **CSIR failed to honour a single woman** scientist for outstanding contribution to science and technology.

Source: <https://vajiramandravi.com/upsc-exam/shanti-swarup-bhatnagar-award/>

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