# CSIR gets first woman director general

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**In news–** Recently, senior electrochemical scientist Nallathamby Kalaiselvi has become the first woman director general of the Council of Scientific and Industrial Research(CSIR).

**About the CSIR-**

- **Pioneer of India's intellectual property movement, the Council of Scientific and Industrial Research(CSIR) was** established by the Government of India in September 1942 as an autonomous body.
- The CSIR, known for its cutting edge R&D knowledge base in diverse S&T areas, is a contemporary R&D organization.
- **It covers a wide spectrum of science and technology –** from oceanography, geophysics, chemicals, drugs, genomics, biotechnology and nanotechnology to mining, aeronautics, instrumentation, environmental engineering and information technology.
- **It provides significant technological intervention in many areas concerning** societal efforts, which include environment, health, drinking water, food, housing, energy, farm and non-farm sectors.
- CSIR today is strengthening its patent portfolio to carve out global niches for the country in select technology domains.
- CSIR filed about 225 Indian patents and 250 foreign patents per year during 2015-20.
- **It has put in place CSIR@80: Vision & Strategy 2022** – New CSIR for New India.
- **CSIR's mission is "to build a new CSIR for a new**

**India”,** and CSIR’s vision is to “Pursue science which strives for global impact, the technology that enables innovation-driven industry and nurtures trans-disciplinary leadership thereby catalyzing inclusive economic development for the people of India”.

- Prior to CSIR, the Industrial Intelligence and Research Bureau was set up in April 1935.
- At the onset of World War II in 1939, by the efforts of Arcot Ramaswamy Muda**liar, a member Board of Scientific and Industrial Research(BSIR) was created** on 1 April 1940 for a period of two years.
- Mudaliar became the chair of the board.
- It was at this point that Shanti Swaroop Bhatnagar was appointed as the Director.
- Major achievements of BSIR included development of the techniques for the purification of Balochistan sulphur anti-gas cloth manufacture, vegetable oil blends as fuel and lubricants, plastic packing cases for army boots and ammunition, dyes for uniforms and the preparation of vitamins, and the invention of a pyrethrum emulsifier and cream.
- **Bhatnagar persuaded the government to set up an Industrial Research Utilisation Committee (IRUC) in early 1941** for further investment into industrial research.
- The constitution of the CSIR as an autonomous body was prepared under Mudaliar and Bhatnagar which came into operation on 26 September 1942.

- **The BSIR and IRUC became the advisory bodies to the governing body of the CSIR.**
    - In 1943, the governing body of CSIR approved the proposal of Bhatnagar to establish **five national laboratories –** the National Chemical Laboratory,

the National Physical Laboratory, the Fuel Research Station, the Glass & Ceramics Research Institute and the National Metallurgical Laboratory.

- **CSIR, today is perhaps among the world's largest publicly funded R&D organisations.**
- It has a chain of 38 world class R&D establishments with 80 field stations spread across India. Its patrons and partners hail from over 50 countries.

## Organisational structure of CSIR:

- **President:** Prime Minister (Ex-Officio)
- **Vice President:** Minister of Science & Technology, India (Ex-Officio)
- **Governing Body:** The Director General is the head of the governing body. The other ex-officio member is the finance secretary (expenditures). Other members' terms are three years.
- **CSIR Advisory Board:** 15-member body (with a term of 3 years each) composed of prominent members from respective fields of science and technology. Its function is to provide S&T inputs to the governing body.

## CSIR achievements:

- CSIR has granted 90% of US patents granted to any Indian publicly funded R&D organization.
- On an average CSIR file about 200 Indian patents and 250 foreign patents per year. About 13.86% of CSIR patents are licensed – a number which is above the global average.
- **CSIR is the only Indian organization among the top 100 global institutions**, according to the Scimago Institutions Ranking World Report 2014. It holds the 17th rank in Asia and leads the country at the first position.

**CSIR milestones:**

- Developed **India's first synthetic drug, methaqualone in 1950.**
- Developed Optical Glass at CGCRI for defence purposes.
- **The Shanti Swarup Bhatnagar Prize was established by CSIR in 1958.** The prize is named after the Founder Director Shanti Swarup Bhatnagar.
- Developed the **first Indian tractor Swaraj in 1967** completely based on indigenous know-how.
- Achieved the first breakthrough of **flowering of Bamboo within weeks** as against twenty years in nature.
- First to analyse genetic diversity of the indigenous Andamanese tribes and to establish their origin out of Africa 60,000 years ago.
- Developed the first transgenic Drosophila model for drug screening for cancer in humans.
- Invented, once a week non-steroidal family planning pill Saheli and non-steroidal herbal pill for asthma called Asmon.
- CSIR developed cheaper processes for manufacture of anti-HIV drugs and transferred the technology to CIPLA, which introduced the drug in India and other third world countries at a fraction of the original price of expensive drugs.
- Flosolver, India's first parallel computer to get supercomputing power was built in 1986.
- Rejuvenated India's one-hundred-year-old refinery at Digboi using the most modern molecular distillation technology.
- With TCS, developed a versatile portable PC-based software 'Bio-Suite' for bioinformatics.
- Design of **14 seater plane 'SARAS'.**
- **Established first ever in the world 'Traditional Knowledge Digital Library'** accessible in five international languages, English, German, French, Japanese and Spanish.

- Successfully challenged the grant of patent in the US for use of haldi (turmeric) for wound healing and neem as insecticide.
- In 2009, completed the sequencing of the Human Genome.
- In 2011, successfully tested India’s 1st indigenous civilian aircraft, NAL NM5 made in association with National Aerospace Laboratories and Mahindra Aerospace.
- In 2020, initiated clinical trials to evaluate Sepsivac’s efficacy to reduce mortality rate in COVID-19 patients.