

GOVERNMENT OF INDIA  
MINISTRY OF CHEMICALS AND FERTILIZERS  
DEPARTMENT OF CHEMICALS AND PETROCHEMICALS

**RAJYA SABHA**  
**UNSTARRED QUESTION No. 347**  
ANSWERED ON - 03/02/2026

**AI TECHNOLOGY TO BRING INNOVATION IN THE CHEMICAL SECTOR**

347. SHRI NEERAJ DANGI:

Will the Minister of CHEMICALS AND FERTILIZERS be pleased to state:

- (a) whether the growing demand for the chemical industry in the country has become an important and integral part of the Indian economy, if so, the details thereof;
- (b) whether it is a fact that the chemical industry is still highly dependent on imports, if so, the steps being taken to increase self-reliance; and
- (c) whether Government has any proposals to utilize Artificial Intelligence (AI) technology to bring innovation in the chemical sector?

**ANSWER**

THE MINISTER OF STATE IN THE MINISTRY OF CHEMICALS AND FERTILIZERS  
(SMT. ANUPRIYA PATEL)

**(a) and (b):** The chemical and petrochemical sector is highly diversified and plays a crucial role in supporting the Indian economy. With a growing economy, increasing cross-sectoral demand from industries such as pharmaceuticals, infrastructure, agriculture, construction, textiles, manufacturing, information and communication technology, and the food industry, along with rising consumer demand driven by urbanization and higher incomes, the chemical industry is a key driver of industrial growth and economic development in India.

The Indian Chemical Industry is closely integrated with the global supply chains of the chemical sector. The country has significant quantum of both exports and imports in the Chemical sector. The various measures that are being taken to promote self-reliance in the sector are as follows:

**Petroleum, Chemicals and Petrochemicals Investment Regions (PCPIR):** To attract investments in chemicals & petrochemicals sector, Department had notified the Petroleum, Chemicals and Petrochemical Investment Region (PCPIR) Policy. PCPIRs are conceptualized as cluster-based model of Development with common infrastructure and support services. Three PCPIRs have been set up at Dahej (Gujarat), Vishakhapatnam–Kakinada (Andhra Pradesh) and Paradeep (Odisha). Currently, 2,246 chemical units are functional in these PCPIRs having a cumulative investment of Rs. 3,49,192 crore and these regions have generated employment of 3.7 lakh persons.

**Plastic Parks:** The Department implements the Scheme for Setting up of Plastic Parks under the scheme of New Scheme of Petrochemicals. The Scheme promotes setting up of need-based Plastic Parks with requisite state-of-the-art infrastructure and enabling common facilities. The objective is to consolidate and synergize the capacities of downstream plastic processing industry to help increase investment, production and export in the sector as well as generate employment. Under the Scheme, the Government of India provides grant funding up to 50% of the project cost to the State government subject to a ceiling of Rs. 40 crore per project. In accordance with the Scheme Guidelines, 9 Plastic Parks have been approved so far and the same are at different levels of implementation.

**Centre of Excellence:** The Department of Chemicals and Petrochemicals has formulated a scheme on setting up of Centres of Excellence. The objective is to provide grant-in-aid to educational and research institutions to improve existing technology and promote development of new applications of polymers and plastics. The emphasis of the Scheme is on modernization and upgradation of existing manufacturing processes as well as improving the quality of products. Under the scheme, the Government of India provides financial support up to 50 per cent of the total project cost subject to an upper limit of Rs. 5 crores. So far, 18 CoEs have been approved under the Scheme. Earlier the CoE scheme was only available for petrochemical sector, now revised scheme includes chemicals sector also.

**Skilling and Human Resource Development through CIPET:** The Central Institute of Petrochemicals Engineering & Technology (CIPET) is a technical education institution under the Department of Chemicals & Petrochemicals, engaged in skill development, technology support, as well as academic and research activities for the promotion of the petrochemical and allied industry in the country. CIPET has 48 centers across the country. During 2024-25, CIPET provided training to 75,763 persons and during 2025-26 (till 15.01.2026), 46,381 persons have been imparted skill training.

**(c):** The Council of Scientific and Industrial Research (CSIR) laboratories are working closely with industry, premier academic institutions, and emerging start-ups in the field of Artificial Intelligence and Machine Learning (AI/ML) to develop a robust roadmap for the infusion of cutting-edge technologies in the chemical sector. Several CSIR constituent laboratories are leveraging AI-based approaches to enhance self-reliance and innovation in the chemical industry, such as:

- CSIR–Central Electrochemical Research Institute (CECRI), Karaikudi, focuses on development of specialty chemicals for corrosion prevention, extraction of critical metals and refurbishing spent battery electrode materials and Hydrogen (alternate fuel). CSIR-CECRI uses AI tools to predict the performance of advanced chemistry cells and batteries, as well as to screen various materials suitable for batteries and electrochemical power sources. Machine learning based tools have already been developed to predict the life of lithium-ion batteries made using different chemistries.
- CSIR–Indian Institute of Petroleum, Dehradun, is using machine learning models to screen and identify promising high-capacity hydrogen storage materials.

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