

GOVERNMENT OF INDIA  
MINISTRY OF CHEMICALS AND FERTILIZERS  
**LOK SABHA**  
**UNSTARRED QUESTION No. 735**  
TO BE ANSWERED ON 07/02/2025

**CHEMICAL ENGINEERING RESEARCH PROJECTS**

735: THIRU D. M. KATHIR ANAND:

DR. T. SUMATHY ALIAS THAMIZHACHI THANGAPANDIAN

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

- (a) whether the Government has any plan to establish a special economic zone for Chemicals and Chemical engineering research in Tamil Nadu, if so, the details thereof;
- (b) whether the Government has initiated any special projects at CIPET, Chennai in Chennai South constituency and if so, the details thereof, if not, the reasons therefor;
- (c) whether the Government has any plan to establish special economic zone for Chemicals and Fertilizers and a Chemical Engineering Cluster in Tamil Nadu;
- (d) if so, the details thereof and the funds allocated for the same;
- (e) the important Chemical engineering research projects undertaken by the Ministry of Chemicals and Fertilizers through it's allied and subordinate offices; and
- (f) whether the Government has initiated any special projects pertaining to Chemical engineering research in and around Vellore and if so, the details thereof and if not, the reasons therefor?

**ANSWER**

THE MINISTER OF STATE CHEMICALS AND FERTILIZERS

(SMT. ANUPRIYA PATEL)

- (a) Currently, the Government does not have any plan to establish a special economic zone for chemicals and chemical engineering research in Tamil Nadu.
- (b) The Department has approved the construction of a New Technology Centre at Central Institute of Petrochemical Engineering & Technology: Institute of Petrochemicals Technology (CIPET: IPT), Chennai, at a total cost of Rs. 60 crore. Of this, the share of the Central Government is Rs. 54 crore while Rs. 6 crore

would be borne by CIPET. The said Technology Centre consists of various facilities including advanced plastics processing, tool room, smart classrooms, video conference facilities and digital library, to support the plastic and allied industry in the region.

(c) and (d) Currently, the Government does not have any plan to establish special economic zones for chemicals and fertilizers or a chemical engineering cluster in the State of Tamil Nadu.

(e) The important research projects undertaken in chemical engineering and allied fields by the Research & Development (R&D) wing of CIPET include:

- i. Scalable Micro Porous Polymer Film as a Separator for Secondary Lithium Battery Applications;
- ii. Optimization of Process Parameters and Analysis of Polymeric Nanocomposites for Viscoelastic Applications;
- iii. Development of Corrosion Resistant and Anti-Fouling Based Smart Zeolite Coatings for Marine Vehicles;
- iv. Development of Next Generation Hybrid Solar Cells;
- v. Poly Electrolyte Membrane for Fuel Cell Applications;
- vi. Transparent Heat Reflecting (THR) Nano-Hybrid Coating for Automobile Window Glasses;
- vii. Tuning of In-Plane 3D Porous Efficient Electrodes for Micro-super capacitors;
- viii. Hybrid 3D Architecture Electrodes for Smart and Flexible Supercapattery;
- ix. Development of novel, lightweight hybrid and green composites for the automotive sector;
- x. Design and Development of Poly (vinyl alcohol co-styrene sulfonic acid) based functional membranes for fuel cell applications; and
- xi. Fabrication and Design of Thermal Sensors assembled with in-house developed adhesive for Cryogenic long-range Temperature measurement.

(f) The Department of Chemicals and Petrochemicals implements a Scheme for Setting up of Centres of Excellence (CoEs) under the New Scheme of Petrochemicals. Under this Scheme, the Department provides grant-in-aid to reputed government research institutes with the objective of improving the existing technology and research in the country and to promote development of new applications. The emphasis is on modernization and upgradation of existing manufacturing processes as well as improving the quality of products involving Chemicals and Petrochemicals. The broad areas of research include updating products for new uses, product design changes using chemicals and petrochemicals, improvements in production processes, development of biodegradable and bio-based chemicals, enhancing efficiency and productivity through the optimization of chemical processes, including the use of advanced reactors, separation techniques, and process control strategies. The Department has approved two Centres of Excellence (CoEs) in the State of Tamil Nadu. The CoE approved in 2011 at the Central Institute of Petrochemicals Engineering & Technology (CIPET), Chennai focused on Green Transport Network while the recently approved CoE at the Indian Institute of Technology (IIT), Madras is for research on development of Biodegradable Packaging Materials.

For the purpose of setting up CoEs, the Department of Chemicals & Petrochemicals invites research proposals from various eminent institutes. The project proposals received from the institutes are evaluated based on relevance of the topic to the chemical and petrochemical sector, relevance to industry, depth of collaboration with the industry, measurable outcome with sustainable impact, differentiated research hypothesis, and potential for commercialization. So far, no CoE has been approved in the Vellore Parliamentary constituency.