GOVERNMENT OF INDIA
MINISTRY OF CHEMICALS AND FERTILIZERS
DEPARTMENT OF CHEMICALS AND PETROCHEMICALS
RAJYA SABHA
UNSTARRED QUESTION No. 994
TO BE ANSWERED ON 12-12-2023

'RESEARCH AND DEVELOPMENT IN THE PETROCHEMICAL SECTOR'

994. SHRI AYODHYA RAMI REDDY ALLA:

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

(a) whether Government has formulated any policy or roadmap for enhancing Research and Development (R&D) in the petrochemical sector, if so, the details thereof;

(b) how emerging technologies such as artificial intelligence and machine learning are being integrated to optimize production and decision-making processes in the realm of petrochemical research; and

(c) the manner in which digital twins and simulation technologies are being leveraged in the design and optimization of petrochemical plants, and their impact on overall operational excellence?

ANSWER

THE MINISTER OF STATE FOR CHEMICALS & FERTILIZERS, NEW & RENEWABLE ENERGY

(SHRI BHAGWANTH KHUBA)

(a)   Yes, Sir. The Department of Chemicals and Petrochemicals has formulated the New Scheme of Petrochemicals with sub-schemes on (i) Scheme for setting up of Centres of Excellence; (ii) The Petrochemicals Research & Innovation Commendation Scheme; and (iii) Scheme for setting up of Plastic Parks.

Under the scheme for setting up of Centres of Excellence (CoEs), the Department provides grant-in-aid to identified research institutes with the objective of improving the existing petrochemicals technology and research in the country and to promote development of new applications of polymers and plastics. Under the scheme, the Government of India provides financial support upto 50 per cent of the total project cost subject to an upper limit of Rs. 6 crore. So far, 13 CoEs have been approved.

Under the Petrochemicals Research & Innovation Commendation (PRIC) Scheme, the Government felicitates meritorious innovations and inventions in the field of petrochemicals, products, processes and other related areas. The Scheme seeks to improve research and development in the petrochemical sector, leading to more efficient energy consumption, plastic waste management, and development of new products.

(b)   Emerging technologies such as artificial intelligence and machine learning have the potential to transform the landscape of petrochemical research, offering benefits for optimizing production and decision-making processes. The use of these technologies could assist in automated data analysis, scenario planning, risk mitigation as well as process optimization. Currently, the use of artificial intelligence and machine learning in the Indian petrochemical sector is limited.

(c)   Technological developments such as digital twins and simulation technologies help to improve the design and functioning of petrochemical plants, furthering operational excellence. These tools enable testing of different scenarios in the virtual space, leading to design optimization, reduction in construction cost, risk minimization, better decision making and improved project execution. These technologies can also be used to reduce emissions and waste, furthering the goals of sustainability.

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