

**GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT AND HIGHWAYS**

**LOK SABHA
UNSTARRED QUESTION NO. 4720
ANSWERED ON 21ST AUGUST, 2025**

INNOVATION IN ROAD CONSTRUCTION

4720. SHRI MADHAVANENI RAGHUNANDAN RAO:

Will the Minister of ROAD TRANSPORT AND HIGHWAYS

सड़क परिवहन और राजमार्ग मंत्री

be pleased to state:

- (a) the incentives and policies being implemented to promote Research and Development (R&D) in the road sector in the country;**
- (b) the key initiatives and schemes that have been successful in driving innovation and growth; and**
- (c) the notable achievements and outcomes of these efforts?**

ANSWER

THE MINISTER OF ROAD TRANSPORT AND HIGHWAYS

(SHRI NITIN JAIRAM GADKARI)

(a) Government in the Ministry of Road Transport and Highways undertakes need-based and futuristic research to identify and develop new materials, processes, innovative technology in the road sector. The research works are undertaken through research and academic institutions of repute and excellence such as IITs/NITs/ Central Road Research Institute (CRRI). The research schemes cover different aspects such as planning, design, construction, operation and maintenance of roads, bridges, tunnels, etc.

Memorandum of Understanding (MoU) has been signed with different academic institutes namely IIT Madras, IIT BHU, IIT Roorkee and JNTU, Anantpur to establish Chairprofessor for academic collaboration, research & development, teaching and training in the area of development of highway sector. Also a Center of Excellence for Road Safety has been established at IIT Madras to work on development of new products, capacity building, knowledge sharing, collaborations, research and strategic initiatives focused towards improving road safety and reducing road fatalities in the Country. National Highways Authority of India (NHAI) has also established Transportation Research and Innovation Hub (TRIHUB) - a Center of Excellence (CoE) at IIT Hyderabad. Hackathon has also been conducted to promote research ecosystem and winner certificates have been awarded as an incentive to the innovators.

(b) The key initiatives and schemes that have been undertaken in driving innovation and growth are data-driven practice guidebook on mid-term and long-term freight traffic forecasting, national facility for accelerated testing of pavements and vehicle (NATPaVeD), bio-bitumen from agricultural waste, utilisation of waste plastic in bituminous mixtures, use of slag and construction and demolition wastes including municipal landfill inert material, use of red mud (bauxite residue) for embankment construction, application of geosynthetics in road construction, evaluation of impact of electronic toll collection system on vehicular emissions, FASTag tolling, bridge health monitoring system, development of AI tool on e- DAR, etc.

(c) The notable successful achievements and outcomes of these efforts in the recent past are development of Indian Roads Congress (IRC) guidelines such as Guidelines for High Performance Bituminous Mixes for High Volume Roads IRC: SP: 139-2023 and Guidelines for Design of Short Slab Concrete Pavements IRC: SP: 140-2024.
