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India Has Moved from Technology Follower to Global Leader in Emerging Technologies: Dr. Jitendra Singh

India's Space Economy Grows to 9 billion Dollars, Projected to Reach 40-45 billion dollars in 8–9 Years, says Dr. Jitendra Singh

प्रविष्टि तिथि: 09 AUG 2026 2:35PM by PIB Delhi

India will be an essential player in the next industrial revolution which will be biotechnology and AI driven, unlike the last industrial revolution which was IT driven and India was late in becoming a part of that, Union Minister of State (Independent Charge) for Science & Technology and Earth Sciences and MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr. Jitendra Singh, said today.

Speaking at a media conclave, he said India is now among the first few countries in the world to have a dedicated Biotechnology policy, that is BiOE3. We also have a National Quantum Mission, India AI Mission and have made rapid advances in Space and other frontier areas. He said India's space economy, which was earlier almost negligible, has grown to around USD 9 billion and is projected to reach USD 40–45 billion within the next eight to nine years.

Dr. Jitendra Singh participated in an interaction with the media at the conclave, attended by technology developers, industry leaders and other stakeholders. The discussion focused on India's emergence as a global manufacturing and technology hub, the rapid pace of technological change, innovation, private-sector participation and the opportunities emerging in frontier sectors. The Minister also congratulated the winners of the Digital Appliance Awards.

The Minister said India's technological journey has undergone a significant transformation, with the country now operating against global benchmarks in several areas. Referring to India's progress in space, he cited the Chandrayaan mission's detection of evidence of water molecules on the Moon as an example

of the country contributing to global scientific knowledge. He said India had never lacked human talent or scientific capability, but what was required was an enabling policy environment that could translate these capabilities into outcomes.

Dr. Jitendra Singh said the global economy is witnessing a gradual shift towards emerging domains such as biotechnology, circular economy, recycling and other technology-driven sectors alongside traditional manufacturing. He said the next phase of industrial transformation is increasingly likely to be driven by artificial intelligence and biotechnology.

India, he said, is already part of this transition and is among the few countries with a dedicated biotechnology policy. The Government's BioE3 initiative, Biotechnology for Economy, Employment and Environment, is aimed at strengthening the biotechnology ecosystem. Biotechnology, he said, will increasingly influence medical science, agriculture and food production and create new opportunities for economic growth and employment.

Referring to the opening of the space sector to private participation in 2020, Dr. Jitendra Singh said the decision has demonstrated the potential of an enabling policy framework to unlock capabilities within the country. He said India's space economy, earlier almost negligible, has grown to around USD 9 billion and is expanding rapidly, with projections of reaching USD 40-45 billion in the next eight to nine years.

The Minister cited the emergence of Indian space start-ups as an example of this transformation, including companies that have developed rockets and achieved unicorn status within a few years. He said India had the talent and capability, but the enabling environment required to harness that potential is now being created.

Dr. Jitendra Singh said the Government is increasingly bringing the private sector into areas that were earlier largely outside the scope of private enterprise. Referring to the opening of the nuclear sector to private players, he said the move creates new opportunities but also requires industry to prepare itself for emerging areas and develop the necessary capabilities.

Dr. Jitendra Singh said India has limited time to prepare itself for the opportunities associated with the vision of 2047. If the country is to strengthen its position globally, every sector will have to evolve and the private sector will have to be ready to participate in new areas. The Government, he said, is creating the enabling conditions for this transition.

The Minister said technology is also transforming access to education and opportunities, particularly for young people outside major metropolitan centres. Recalling his interaction with a student from a financially constrained family who had cleared IIT-JEE using digital learning resources, he said technology has democratised access to educational opportunities that were earlier difficult to obtain.

He also said the growth of India's start-up ecosystem demonstrates that innovation is no longer confined to major cities, with many young entrepreneurs emerging from smaller towns. The ability to access and effectively use technology, he said, is creating new opportunities for young Indians.

Dr. Jitendra Singh also spoke about the Government's efforts to remove outdated laws and procedures. He said nearly 2,000 obsolete laws have been removed, including provisions that had continued from an earlier era despite changes in society and governance.

The Minister referred to reforms relating to family pension rights for single daughters, nomination rights for women government employees and pension provisions for families of employees who die before completing ten years of service. He also recalled the decision to end the requirement for gazetted officer attestation for a large number of documents, saying the reform represented greater trust in citizens and the youth.

Dr. Jitendra Singh said India's ambition for 2047 requires the country to move beyond the role of a follower and strengthen its position as a country whose capabilities and innovations can be adopted by others. This, he said, requires closer collaboration between government and industry.

Calling for an extensive partnership between the public and private sectors, the Minister said the earlier scepticism between the two sides needs to give way to mutual learning and collaboration. Government and industry, he said, must learn from each other, adopt effective practices and work together with greater synergy.

Dr. Jitendra Singh said a "whole of government plus whole of nation" approach will be essential for India to achieve its larger developmental, technological and economic ambitions.


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