# ‘ESTIC 2026’ Concludes with a call by Dr Jitendra Singh for transformation through technology;

## Dr Jitendra Singh reaffirms PM Sh Narendra Modi’s advice to work on Measurable Outcomes for Viksit Bharat 2047:

## Union Minister Calls for Indigenous Research, Stronger Industry-Academia Collaboration and Time-Bound Translation of Technologies into Societal Solutions

## Two Landmark Documents Released: National Vision for Science, Technology and Innovation and India’s STI Outlook 2026

## Minister Emphasises Capacity Building, Emerging Technologies and a Stronger Link Between Scientific Institutions, Industry and Society

## ESTIC to Evolve into a Global Platform for Scientific Excellence, Innovation and Technology-Led Transformation

Posted On: 29 OCT 2026 7:13PM by PIB Delhi

Addressing the valedictory session of the “Emerging Science, Technology and Innovation Conclave” (ESTIC), 2026, at Bharat Mandapam here today, Union Minister of State (Independent Charge) for Science & Technology and Earth Sciences, and Minister of State in the Prime Minister’s Office, Personnel, Public Grievances and Pensions, Atomic Energy and Space, Dr Jitendra Singh called for transformation through technology. He also reaffirmed PM Sh Narendra Modi’s advice to work on measurable outcomes for Viksit Bharat 2047.

Emphasising the need to move beyond scientific discoveries towards their practical application, the Minister said that the success of India’s research and innovation ecosystem must increasingly be assessed through its tangible contributions to national development and the vision of Viksit Bharat 2047. Building on Prime Minister Narendra Modi’s vision of outcome-oriented science and technology, Dr. Jitendra Singh emphasised the importance of identifying clear, measurable targets for the next three years to assess the country’s progress and strengthen its long-term scientific and technological capabilities.

The valedictory session was attended by Principal Scientific Adviser to the Government of India, Prof. Ajay K. Sood; Secretary, Department of Scientific and Industrial Research (DSIR) and Director General, Council of Scientific and Industrial Research (CSIR), Dr. (Mrs.) N. Kalaiselvi; Secretary, Department of Biotechnology (DBT), Dr. Rajesh S. Gokhale; Secretary, Department of Science and Technology (DST), Prof. Umesh V. Waghmare; Secretary, Ministry of Earth Sciences (MoES), Dr. Srinivasa Kumar Tummala; and Secretary, Department of Agricultural Research and Education (DARE) and Director General, Indian Council of Agricultural Research (ICAR), Dr. Mangi Lal Jat, besides scientists, senior officials, industry representatives, startups and other stakeholders. The session featured presentations on key recommendations emerging from ESTIC 2026, followed by the release of two landmark documents and the valedictory address by Union Minister Dr. Jitendra Singh.

Dr. Jitendra Singh said that ESTIC must progressively evolve into a globally recognised scientific platform where researchers, academicians and innovators actively seek opportunities to participate, reflecting the quality and credibility of its scientific programme. Commending the organisers for bringing together a wide range of scientific disciplines and international experts, including Nobel laureates, he stressed that India's research priorities must increasingly focus on indigenous resources, indigenous methodologies and technologies developed within the country. He also emphasised the importance of strengthening capacity building in science administration, enabling scientists and researchers entrusted with institutional leadership to develop the managerial and administrative capabilities required to guide scientific organisations effectively.

The Minister said that emerging areas of science and technology offer opportunities to accelerate India's technological progress and improve the quality of life of its citizens. Referring to developments in biotechnology, genomics and space research, he emphasised the need to anticipate future scientific requirements, including space medicine, as human space missions become more complex and prolonged. He also drew attention to the wider applications of nuclear science and technology, including nuclear medicine, and stressed that their potential extends well beyond energy and strategic applications to healthcare and other societal needs. Dr. Jitendra Singh further emphasised the strategic importance of ocean science and the blue economy in shaping India's future economic and geopolitical position, while calling for affordable and accessible nutrition to remain a national priority.

Dr. Jitendra Singh also congratulated the startup award winners and certificate recipients at the valedictory session. Referring to the Prime Minister's interaction with startups during the inaugural day, he emphasised the need for deeper engagement among academia, research institutions, industry and emerging enterprises. He said that the discussions and recommendations emerging from ESTIC should contribute to a more integrated innovation ecosystem, with greater emphasis on developing technologies, facilitating their adoption and advancing India's scientific capabilities towards the targets of Viksit Bharat 2047.

Earlier, Principal Scientific Adviser Prof. Ajay K. Sood said that the central objective of scientific research must be to move beyond discoveries and develop solutions that address real-world challenges. He emphasised stronger collaboration among government departments, universities, industry and local communities, along with more effective

support systems for innovation. He also presented the two landmark knowledge documents prepared through inter-ministerial collaboration and a whole-of-government approach.

The National Vision Document for ESTIC 2026 brings together the long-term science, technology and innovation priorities of 12 ministries and departments across 12 thematic areas aligned with Viksit Bharat 2047. The India: Science, Technology and Innovation Outlook 2026 provide a comprehensive, evidence-based account of India's evolving science, technology and innovation ecosystem, with quantifiable information intended to support policymaking and strengthen engagement with international partners. The STI Outlook is envisaged as a dynamic resource that will be updated annually.

Dr. (Mrs.) N. Kalaiselvi, Secretary, DSIR, and Director General, CSIR, presented the key takeaways from the session on advanced manufacturing. The discussions emphasised the need to expand the contribution of advanced manufacturing to India's economy, accelerate the transition of successful technologies from development to deployment, and extend scientific and technological solutions to rural and underserved communities. Participants called for stronger collaboration between research laboratories and industry, common performance indicators for researchers and industrial partners, greater exploration of conventional materials for advanced applications, and capacity building in specialised manufacturing tools and technologies. The session also stressed the importance of translating indigenous research into solutions that generate measurable economic and societal benefits.

The Secretary, Ministry of Earth Sciences, outlined the recommendations emerging from the session on ocean science and maritime technologies. The discussions called for strengthening ocean observation systems through satellites, research vessels, buoys and autonomous platforms, supported by advanced modelling and artificial intelligence, to convert scientific observations into actionable ocean intelligence. The session emphasised bridging the gap between research and operational applications in maritime safety, weather and climate services, coastal protection, fisheries and strategic maritime capabilities. It also called for wider deployment of indigenous technologies in underwater robotics, deep-sea exploration, ocean energy and desalination, alongside stronger industry collaboration, accessible data systems, international cooperation and sustainable management of marine resources. The recommendations placed coastal communities and the sustainable development of the blue economy at the centre of India's ocean science priorities.

The Secretary, Department of Biotechnology, presented the key recommendations from the session on systems and synthetic biology. The discussions focused on integrating systems biology, synthetic biology and artificial intelligence to improve biological research, experimental design and predictive capabilities. Participants emphasised strengthening shared research infrastructure by connecting bio-AI hubs, bio-foundries and biomanufacturing facilities, while improving process development, scale-up and reproducible testing. The session also called for developing a skilled workforce in engineering biology through interdisciplinary education and practical training, and for stronger academia-industry partnerships with clearly defined milestones to improve the

scalability, affordability and industrial adoption of biotechnology solutions. The discussions explored the potential of biotechnology to address challenges in healthcare, agriculture, energy and the environment.

The Secretary, Department of Science and Technology, outlined the outcomes of the session on autonomous systems, physical artificial intelligence and robotics. The recommendations focused on strengthening the 25 technology hubs established under the National Mission on Interdisciplinary Cyber-Physical Systems, particularly in preparation for the Mission's next phase beginning in January 2028. The session called for stronger testbeds connecting researchers and industry, the development of India-specific datasets, and closer collaboration among academic institutions, startups and industrial partners. It also emphasised patient capital for indigenous hardware, multidisciplinary hands-on training, safety-by-design principles, early customer engagement and viable business models. The draft vision envisages validation of pilot technologies by 2030, wider deployment and manufacturing by 2035, and global competitiveness in these technologies by 2047.

The Director General, Indian Council of Agricultural Research (ICAR), presented the takeaways from the session on agri-tech, food systems and nutrition. The discussions emphasised an integrated approach to the agri-food system, bringing together multiple ministries, departments, research institutions and industry stakeholders. Participants called for unlocking the potential of gene-bank resources to develop nutritious and climate-resilient crop varieties, accelerating the application of frontier sciences such as genome editing, and strengthening collaboration between agricultural and medical research. The session also emphasised the need for appropriate regulatory frameworks, particularly for public-private partnerships, greater international cooperation through South-South learning, and enhanced human-capital development across the agri-food value chain. A theory-of-change approach was proposed to define the contributions of different departments towards a more sustainable, affordable and accessible food and nutrition ecosystem.

The valedictory session reaffirmed ESTIC 2026's emphasis on strengthening India's science, technology and innovation ecosystem through coordinated action across ministries, scientific institutions, industry and academia. With its recommendations spanning advanced manufacturing, ocean science and maritime technologies, biotechnology, autonomous systems, robotics, agriculture and nutrition, the conclave provided a platform for identifying priority areas for future research, technological development and deployment. The discussions also reinforced the need to connect scientific excellence with industrial adoption, national priorities and societal needs.

Dr. Jitendra Singh called upon the scientific community to carry forward the vision articulated by Prime Minister Narendra Modi and ensure that India's scientific achievements translate into tangible outcomes for citizens, strengthen the country's global leadership in science and technology, and contribute to the realisation of Viksit Bharat 2047.


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