

**GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
LOK SABHA
UNSTARRED QUESTION NO.3576
TO BE ANSWERED ON 2/1/2019**

NEW INVENTION IN SCIENCE AND TECHNOLOGY

†3576. **SHRI SANJAY KAKA PATIL:**

Will the Minister of SCIENCE AND TECHNOLOGY विज्ञान और प्रौद्योगिकी मंत्री be pleased to state:

- (a) the steps taken by the Government to promote and implement new invention and technologies in science and technology sector;
- (b) whether any help is likely to be sought from the IITs and other institutions in this regard and if so, the details in this regard;
- (c) whether any funds have been earmarked/proposed to be earmarked by the Government to improve or to make the new technology error free; and
- (d) if so, the details thereof?

ANSWER

**MINISTER OF SCIENCE AND TECHNOLOGY, MINISTER OF EARTH SCIENCES AND MINISTER OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(DR. HARSH VARDHAN)**

विज्ञान और प्रौद्योगिकी मंत्री, पृथ्वी विज्ञान मंत्री और पर्यावरण, वन एवं जलवायु परिवर्तन मंत्री

(डा. हर्ष वर्धन)

(a) & (b): Ministry of Science and Technology and other Departments/Ministries have taken steps to promote and implement new invention and technologies in science and technology sector. To promote scientific fraternity, and inculcate scientific research and innovation in the country, R&D support is provided to the domains like biomedical devices, waste management, advance manufacturing, clean energy & water, nanotechnology, Geo Spatial Technology, Interdisciplinary Cyber Physical Systems covering entire technology value chain through national, bilateral and multilateral initiatives involving participation of several academic institutions including Indian Institute of Technology (IITs). Equal emphasis is given to involve IITs and other premier Institutions of S&T prominence to fine tune and deliver scalable technologies in challenging areas for societal benefits. Swarna Jayanti Fellowships Scheme to support Scientists up to 40 years, has been launched during 50th year of India's independence.

Mission Innovation is one such major step taken by Government to accelerate clean energy innovations through enhanced public funding, greater private sector participation and improved knowledge sharing and global partnership.

Department of Biotechnology has also been implementing numerous schemes, programmes and awards such as Ramalingaswami Re-entry Fellowship, Fellowships under Biomedical Research Career Programme (DBT-WT/ India Alliance), Innovative Young Biotechnologist Awards (IYBA), Biotechnology Career Advancement and Re-orientation Programme (BioCARE) through the competitive grant system for research & development and demonstration and translation research in laboratories across the country.

Biotechnology Industry Research Assistance Council (BIRAC) a Public Sector Undertaking of Department of Biotechnology also intend to promote scientist and scientific research in the country through various funding schemes such as Biotech Ignition Grant, Small Business Innovation Research Initiative (SBIRI), Biotechnology Industry Partnership Programme (BIPP), Social Innovation programme for Products: Affordable & Relevant to Societal Health (SPARSH), Promoting Academic Research Conversion to Enterprise (PACE), etc.

Department of Scientific and Industrial Research (DSIR) has been operating a programme called Patent Acquisition and Collaborative Research and Technology Development (PACE) since 12th five year plan, under which projects involving up-scaling of S&T innovations and industrial R&D from proof-of-concept or lab scale up to commercialization are supported. These projects are submitted by industries alone or in collaboration with public funded R&D organizations/institutions.

Under DSIR, Council of Scientific & Industrial Research (CSIR) R&D activities cover a wide spectrum of science and technology – from radio and space physics, oceanography, earth sciences, geophysics, chemicals, drugs,

genomics, biotechnology and nanotechnology to mining, materials, aeronautics, instrumentation, environmental engineering and information technology. The recent initiatives taken by CSIR includes: implementing Fast Track Translation Projects (FTTs) and Fast Track Commercialization (FTC) which provides execution of close to market, business driven projects, in any area of technology or application; Mission Mode Projects (MMPs) in order to put concerted and sustained efforts in an identified areas by synergizing the best competencies available in various CSIR labs and outside institutions and; Focused Basic Research (FBR) Projects and Niche Creating High Science/ High Technology (NCP) Projects.

Under Department of Health Research, Indian Council of Medical Research (ICMR) has recently established Innovation and Translation Division in 2015 at ICMR head quarters to support the translation of research outcomes from its 26 institutes. In an effort to meet the growing demand in the healthcare sector, IITs and other research institutes are working in close collaboration (along with industries) to build process platforms that which will ensure delivery of quality and affordable healthcare.

Under Department of Agricultural Research and Education, Indian Council of Agricultural Research (ICAR) through its constituent Institutes and All India Coordinated Research Centers across the country have developed various improved technologies, implements and machines for improving the crop yield and reducing labour requirement and drudgery in farm operations. Awareness of the new technologies among farmers is being done regularly through training, demonstration, kishan melas and Mera Gaon Mera Gaurav programmes etc. by respective Institutes.

Department of Atomic Energy (DAE) with its four Research and Development (R&D) units covers the entire spectrum of Nuclear Power Programme, Nuclear Science and Engineering related areas. The areas of R&D include Physical Sciences, Chemical Sciences, Biosciences, agriculture, food preservation, water desalination, water purification, Nuclear reactor technologies, reprocessing and waste management. DAE has entered into MoUs with academic institutes and research organizations for development of new technology. Spinoff technologies are also generated for betterment of society and transferred to interested entrepreneurs for commercialization. DAE is running various schemes like DAE Graduate Fellowship Scheme (DGFS), PhD DGFS, Dr K S Krishna Research Associates Fellowship (KSKRA), DAE Scientific Research Council (SRC) and Prospective Research Funding (PRF) for promoting research work.

Department of Heavy Industry launched a scheme for the ‘Enhancement of Competitiveness in the Indian Capital Goods Sector’ in November, 2014. The Scheme aims to increase competitiveness of the Indian Capital Goods Sector through development and acquisition of the latest technological. The Scheme addresses the creation of technological depth in the Capital Goods Sector by setting up of Centers of Excellence (CoE) for technology development, Common Engineering Facility Centers (CEFC) and sector specific Integrated Industrial Infrastructure Facility (IIIF). The Scheme also has a financial component namely, the Technology Acquisition Fund Programme (TAFP) for acquisition/ transfer of technology. It envisages Public Private Partnership for implementation of most of its components with a budgetary support of Rs. 581.22 crore. The Scheme encourages the development of indigenous technology and manufacturing, cost competitiveness, generation in collaboration with the user Industry and academic institutions like IITs and other such institutions of academic excellence.

Ministry of Human Resource Development is providing support for promoting and implementing new invention and technology, for all the participating institutions under the Project, Technical Education Quality Improvement Programme (TEQIP-III). Hackathons are being conducted so that innovative ideas would emerge and can be incubated in the start-up Centre as per All India Council for Technical Education (AICTE) 10-point Mandate.

The Government has launched national flagship program such as IMPacting Research Innovation and Technology (IMPRINT) and Uchhatar Avishkar Yojana (UAY) which aim at providing solutions to the most relevant engineering challenges faced by the nation by translating knowledge into a viable technology. These are joint initiatives with Ministry of Human Resource Development (MHRD). Memorandum of Understanding (MOU) was executed on 31st March 2016 for joint action for promoting research in premier technical institutions through the IMPRINT programme.

The Government has also taken various steps to strengthen the IP ecosystem in the country, which in turn has a positive impact on new inventions and technology in Science and technology sector. A comprehensive National IPR policy has been approved in 2016 to stimulate innovation and creativity across sectors.

Ministry of Electronics & Information Technology (MeitY) is implementing a scheme titled “Support for International Patent Protection in E&IT (SIP-EIT)” for MSMEs and Technology Start-up Units to facilitate international patent filing. As of now, 34 International patent applications have been approved under the scheme since the inception of the scheme in December 2014.

(c) & (d): Upgrading of technologies as per emerging needs is a continuous process under various schemes under implementation and therefore, no need has been felt to create a separate scheme for the purpose.
