

**GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
LOK SABHA  
UNSTARRED QUESTION No. 3049  
TO BE ANSWERED ON 06/08/2021**

**PROMOTION OF SUSTAINABLE INNOVATION IN SCIENCE AND  
TECHNOLOGY**

**3049. MS. RAMYA HARIDAS:**

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

- (a) whether the Government has framed any policy to encourage the students/ youth towards the field of Science and Technology;**
- (b) if so, the details thereof along with the achievements made so far in this field; and**
- (c) the steps taken by the Government for promoting affordable and sustainable innovation in the field of Science and Technology?**

**ANSWER**

**MINISTER OF STATE (INDEPENDENT CHARGE) OF  
SCIENCE AND TECHNOLOGY AND EARTH SCIENCES  
(DR. JITENDRA SINGH)**

विज्ञान और प्रौद्योगिकी तथा पृथ्वी विज्ञान के राज्य मंत्री (स्वतंत्र प्रभार)  
(डॉ. जितेंद्र सिंह)

- (a) Yes, Sir. It has been a part of Government's Science and Technology (S&T) policy to encourage students/youth of the country towards the field of science and technology.**
- (b) The key elements of Science, Technology, and Innovation (STI) Policy of 2013 include promoting the spread of scientific temper amongst all sections of society, enhancing skill for application of science among the youth from all social strata, making careers in science, research and innovation attractive enough for talented and bright minds.**

**Government has been implementing several schemes to encourage students/ youth of the country towards the field of science and technology. The "Innovation in Science Pursuit for Inspired Research (INSPIRE)" is a major scheme in operation to attract, motivate, nurture and train talented and meritorious students to study science subjects and opt for careers in Research and Development (R&D) to build a pipeline of**

quality manpower, thereby widening the R&D manpower base of the country. Close to 42,000 young students of class 6<sup>th</sup> - 10<sup>th</sup> receive the INSPIRE Award MANAK (Million Minds Augmenting National Aspiration and Knowledge) per year from recognized schools across the country. About 20,000 students per year attend INSPIRE Internship Camps to experience the joys of creative pursuit of science. About 10,000 students in top 1% of Class 12<sup>th</sup> Board examinations receive Scholarships For Higher Education (SHE) every year to pursue B.Sc and M.Sc courses in Basic and Natural Sciences. Every year, about 1,000 students are availing INSPIRE Fellowships for pursuing Ph.D. degree. 100 young researchers per year are availing INSPIRE Faculty Fellowships to establish themselves as independent post-doctoral researchers. In order to attract and motivate young students, several international programmes are also being implemented by the Department of Science and Technology (DST) such as Lindau meeting with Nobel Laureates, Asian Science Camps, Raman Charpak Fellowships, Sakura Exchange programme, etc.

The Autonomous Institutions under DST also train large numbers of summer research interns, Ph.D. and post-doctoral fellows, organize large number of important national/international conferences, outreach programmes for school and college students including lectures by their scientists, orientation programmes etc.

The Science and Engineering Research Board (SERB), a statutory body under DST supports young researchers in a big way, through early career grants, core research grants, doctoral and post-doctoral fellowships etc. Some of the notable programmes targeted at young scientists include: National Post-doctoral Fellowship (N-PDF), Start-up Research Grant (SRG), the Prime Minister's Fellowship for Doctoral Research, Swarnajayanti Fellowships etc. These schemes are designed to identify promising young researchers and provide them with training and research opportunities in frontier areas of science and engineering. Close to 250 young researchers receive National Post-doctoral Fellowships annually. Majority of the 500 scientists supported under the Start-up Research Grant have been budding young researchers who take up high-end R&D in the country. There are 100 slots of fellowships available annually to researchers to pursue Ph.D.in partnership with Industry under the PM Fellowship for Doctoral Research.

The Council for Scientific and Industrial Research (CSIR) has been providing doctoral and postdoctoral fellowships to young and budding researchers through its various fellowship programmes such as Junior Research Fellowship – National Eligibility Test (JRF- NET), Shyama Prasad Mukherjee Fellowship (SPMF), Senior Research Fellowship (SRF- Direct), Research Associateships and CSIR-Nehru Science Postdoctoral Research

**Fellowship (CSIR-NSPDF). Annually, CSIR offers about 4500-5000 such fellowships to young students who are going to be future scientists. At any given time, CSIR supports about 8000 to 9000 young researchers in their pursuit for doctoral and postdoctoral research in the field of science and technology.**

**The Department of Biotechnology (DBT) has implemented integrated Human Resource Development Programme in Biotechnology including Star College Scheme for strengthening of Undergraduate Science Education, Postgraduate Teaching Programme, DBT-Junior Research Fellowship Programme, DBT-Research Associateship and DBT-Biotechnology Industry Training (Apprenticeship) Programme in areas of Biotechnology and Life Sciences.**

**(c) Government has taken several steps to promote affordable and sustainable innovations in the field of science and technology. DST has launched National Initiative for Developing and Harnessing Innovations' (NIDHI) programme to strengthen the innovation value chain through Technology Business Incubators (TBIs). NIDHI provides much-needed support to innovators and entrepreneurs at different stages of their journey to take their innovative ideas to market and further scale up its operations. The program aims to provide state-of-the art infrastructure for nurturing startups along with mentoring and funding support during pre-incubation, incubation and post incubation periods. NIDHI-TBI (Technology Business Incubator) are centres established in academic setups to provide incubation support to startups through technical and business mentoring, IPR support, legal & regulatory guidance and seed funding for startup's growth. These incubators support startups in various technology domains like agritech, manufacturing, electronics, IoT, health-tech, biotech, AI/ML, deep-tech etc.**

**NIDHI-PRAYAS Shala specially assists innovators in their 'idea to prototype journey' through grant funding of up to Rs. 10 lakh. PRAYAS Centres have been setup in various academic institutions to support innovators and entrepreneurs to test their ideas and make prototypes which is further developed as products and a startup.**

**For promoting affordable sustainable innovation in the field of science and technology, the National Innovation Foundation (NIF), an autonomous institution under DST organizes a biennial National Grassroots Innovation and Outstanding Traditional Knowledge Awards and for it, common people (including youth) share their ideas and innovations. NIF provides value-addition and incubation support to the innovators so that their technologies can reach the market. NIF has also**

**set up NIF Incubation and Entrepreneurship Council (NIFientreC), a Technology Business Incubator, for setting up and incubating commercial ventures based on innovative technologies of common people of the country.**

**CSIR is implementing R&D as well as translational projects in various categories, namely, Focused Basic Research, Niche Creating Projects, Fast Track Translational Projects, Fast Track Commercialization Projects, HARIT Projects and Mission Projects for the purpose.**

**DBT is supporting affordable Healthcare R&D towards understanding the cause of human diseases at genetic and molecular level that enable the development of innovative therapies or preventive measures and early detection in areas like infectious diseases, chronic diseases, human genetics and genome analysis, maternal and child health, public health and nutrition, vaccine research, bioengineering and bio design, stem cells and regenerative medicine. DBT is also supporting translational research for application development under Accelerated Translational Grant for Commercialization (ATGC) program. ATGC enables academic researchers to take their laboratory research leads with established proof-of-concept to the next phase.**

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