

**GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA**

UNSTARRED QUESTION NO:3923

ANSWERED ON:06.08.2014

DISCOVERIES IN S&T

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Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

- (a) the details of the new discoveries made in the field of Science and Technology (S&T) during each of the last three years and the current year;
- (b) the steps taken for commercialisation of these discoveries; and
- (c) the extent to which the Government has been successful in this regard?

Answer

MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF SCIENCE AND TECHNOLOGY; MINISTER OF STATE (INDEPENDENT CHARGE) OF THE MINISTRY OF EARTH SCIENCES; MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE; AND MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS; (DR. JITENDRA SINGH)

(a) Several discoveries have been made by Indian researchers during the last three years and current year. Some of them include: new materials for highly effective hydrogen generation; novel molecules as efficient sensitizers in photodynamic therapy; smart nanoparticles based drug delivery for treatment of fungal keratitis; new technique to predict solar cycle; and discovery of 3-dimensional spheroidal shape of nearby small galaxy, the Small Magellanic Cloud. Indian scientists have also made significant contributions in the discovery of 'Higgs Boson', popularly known as 'God Particle' at CERN, Geneva.

(b) The process of commercialization of any discovery involves several steps in technology development chain. The Ministry has set up 'Patent Facilitating Cell' for filing of patents and also established 'Technology Development Board' and 'National Research Development Corporation' for commercialization of indigenously developed technology. To accelerate successful product development and commercialization of translated research platform, a section 25 company, namely, Biotechnology Industry Research Assistance Council (BIRAC) and schemes for promoting Public-Private Partnerships have also been implemented.

(c) The Ministry has filed about 2000 patents both in India and abroad during the last 3 years and current year. In this period, around 300 patents filed in India and 900 patents filed abroad have been granted. Several technologies have also been developed which include:

cost-effective lead-carbon hybrid ultracapacitors for rural lighting; test bed for simultaneous production of potassium sulphate fertilizer, ammonium sulfate fertilizer and ultrapure magnesia; use of glass fibre reinforced gypsum (GFRG) as building material; heteropolyacid based catalyst for selective alkylation of phenols; infant ventilator; humidity sensor devices; aerosol spray from anti-arthritis herbs; ROTOVAC - first indigenous rotavirus vaccine; micro-ELISA based diagnostic assay; patient transfer device and Bioscoop - a semiautomatic device for liver biopsies. Some of the technologies commercialized include : POSHAN - a micronutrient formulation for correcting nutrition deficiencies in mulberry; liquid biofertilizer, colour based method for detection of detergents in milk; low cost disposable laparoscopy trocars; colloidal micro crystalline cellulose; virtual comet simulator; and advanced drug delivery based anticancer product (Paclitaxel).