

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

STARRED QUESTION NO:341  
ANSWERED ON:07.09.2007  
PROMOTION OF NANO TECHNOLOGY  
Ahir Shri Hansraj Gangaram

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

- (a) whether the Government proposes to formulate any Action Plan for development and promotion of nano-technology in the country;
- (b) if so, the details thereof;
- (c) whether the Government has taken any steps to facilitate study, teaching and use of nano-technology in the country; and
- (d) if so, the details thereof?

**Answer**

MINISTER OF SCIENCE AND TECHNOLOGY AND MINISTER OF EARTH SCIENCES (KAPIL SIBAL)

(a) to (d) A Statement is laid on the Table of the House.

STATEMENT AS REFERRED IN REPLY TO PARTS (a) to (d) OF LOK SABHA STARRED QUESTION NO.341 FOR 07.09.2007 REGARDING "PROMOTION OF NANO-TECHNOLOGY"

(a) to (d): The Government has been quite active in promoting development and applications of nanotechnology in the country. The applications of nanotechnology developed in the country so far include

- (a) drug delivery utilizing nanoparticles for ocular applications;
- (b) viable method of producing nano titanium dioxide from indigenously available ilmenite ore;
- (c) water filters using nano silver coated candles for household applications;
- (d) nanomaterials for reducing pollution from automobiles under public private partnership model;
- (e) diagnostic kit based on nano bio sensors for tuberculosis and ophthalmology; and (f) carbon nanotube based flow sensors. Some collaborative projects between educational and research institutions and industry have been started on high performance rubber nanocomposites for tyre engineering and innovative textiles. The Nano Mission, launched in May 2007, with an allocation of Rs. 1000 crore for 5 years, plans to put further emphasis on development and commercialization of Nano Technology, not only through public private partnerships but also by encouraging and enabling the private sector to invest in, and leverage, this sunrise technology.

With the help of the research projects and post-doctoral fellowships already funded, a core community of about 150 researchers and research students has been nurtured in this field. A programme for M.Tech. courses in Nano Technology has also been started. About 20 centres of excellence have also been established in important areas such as biosensors, printable electronics, drug delivery, smart textiles, etc. The Government has already spent approximately Rs. 350 crore over the past 5 years to promote R&D in nanotechnology. These scientists, facilities and centres will catalyze further accelerated growth of nanotechnology in the country.