GOVERNMENT OF INDIA
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
RAJYA SABHA
UNSTARRED QUESTION NO. 1345
TO BE ANSWERED ON: 06.12.2024

NNetRA PROJECTS IN GOA

1345. SHRI SADANAND MHALU SHET TANAVADE:

Will the Minister of ELECTRONICS AND INFORMATION TECHNOLOGY be pleased to state: -

(a) the steps taken by Government to promote the development and deployment of indigenous nanoelectronics technologies, such as biosensors and healthcare devices, particularly in the healthcare and diagnostics sectors;
(b) whether Government has supported any projects in Goa under the Nanoelectronics Network for Research and Applications (NNetRA) initiative, if so, the details thereof; and
(c) whether Government is considering establishing a Centre of Excellence (CoE) in nanoelectronics in Goa in collaboration with academic institutions, if so, the details thereof?

ANSWER

MINISTER OF STATE FOR ELECTRONICS AND INFORMATION TECHNOLOGY
(SHRI JITIN PRASADA)

(a): Various steps are taken by Government to promote the development and deployment of indigenous nanoelectronics technologies, such as biosensors and healthcare devices, particularly in the healthcare and diagnostics sectors.

To promote the development and deployment of indigenous nanoelectronics technologies:

- Ministry of Electronics and Information Technology (MeitY) has a dedicated scheme for Research and Development(R&D) in Electronics and IT to promote the development and deployment of indigenous technologies. Under the scheme initiatives have been taken to support development of nanoelectronics technologies for healthcare and various other sectors such as agriculture, safety, environment, and energy.
- Department of Biotechnology (DBT) through BIRAC promotes innovative and entrepreneurial R&D for development of technologies including biosensors and healthcare devices for startups, innovators, incubation centres, academia, and industry across the country.
- Department of Science and Technology (DST) has a dedicated program for R&D in materials and nanotechnologies including biosensors and healthcare related projects under Nano and Advanced Materials Division (NAMD)[erstwhile National Program for Nano Science and Technology (NPNST)/Nano Mission].

i. Establishment of Centres of Excellence for Nanoelectronics (CENs):

MeitY has established six state-of-the-art Centres of Excellence for Nanoelectronics (CENs) at premier institutes in the country at IIT Bombay (IITB), IIT Delhi (IITD), IIT Madras (IITM), IIT Kharagpur (IITKgp), IIT Guwahati (IITG) and IISc Bangalore (IISc). This includes establishment of clean rooms, fabrication, characterisation and testing facilities.

ii.

iii. Indigenous technologies developed in the healthcare and diagnostics sectors

- The CEN facilities established by MeitYare being used for Research and Development of many healthcare technologies such as Smart Spirometer for

Respiratory analysis; Smart Mask for breath exercises; A portable device to detect Liver and Pancreatic Disorder; Portable PCR System for Molecular Diagnostics; Haemoglobin testing system; Painless Drug Delivery Systemetc. These technologies have been validated through the clinical trials and few of them have obtained ISO, CDSCO and other certifications.

- BIRAC supports development of affordable indigenous nanoelectronics technologies, such as biosensors and healthcare devices through its regular schemes such as Small Business Innovation Research Initiative (SBIRI), Biotechnology Industry Partnership Programme (BIPP), Biotechnology Ignition Grant Scheme (BIG), Promoting Academic Research Conversion to Enterprise (PACE) and through National Biopharma Mission Program (NBM), Early Translation Accelerators (ETAs) and Product Commercialization Program (PCP).
- DST under Nano and Advanced Materials Division (NAMD)supports R&D for nanoelectronics technologies including biosensors and healthcare related projects.

iv. Government support in facilitating the deployment of indigenous nanoelectronics technologies

- For the deployment of the indigenous nanoelectronics technologies developed, MeitY connects the technology developers with various government schemes for conducting clinical trials, certification, and validation processes, and enabling their manufacturing and commercialization.
- BIRAC through its PPP schemes promotes innovation and research in the field of biotechnology across the country through i4 programme (Intensifying the Impact of Industrial Innovation) and PACE Programme (Promoting Academic Research Conversion to Enterprise).

(b) and (c) **Nanoelectronics Network for Research & Applications (NNetRA)**

MeitY in collaboration with DST supported the R&D project "Nanoelectronics Network for Research & Applications (NNetRA)" at IISc, IITB, IITM, IITKgp and IITD since 2018.

Under NNetRA baseline nano technologies have been developed for application areas such as Safety, Energy & Environment, Healthcare, Agriculture and Nanodevices & Systems using the state-of-the-art CEN facilities established at IISc, IITB, IITM, IITKgp and IITD.

MeitY's support for R&D projects in Goa

- Researchers, faculties, students and start-up from IIT Goa, NIT Goa, BITS-Pilani, Goa andUniversity of Goa have availed facilities of CENs for R&D projects and obtained training in Nanotechnology.

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