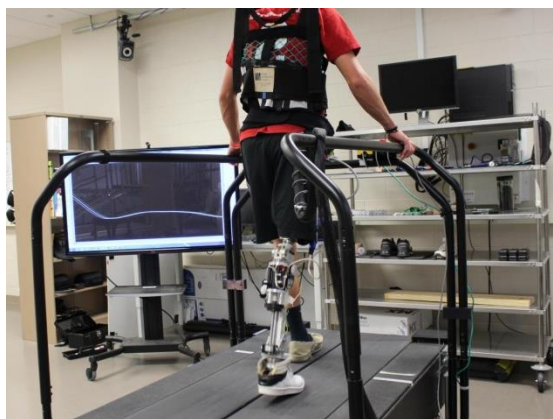


Biomedical Engineering for designing of Bio-medical Devices, Diagnostics and Implants

The Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India has recognized the biomedical engineering as one of its multi-disciplinary thrust domains which involves application of engineering techniques for basic understandings and development of innovative technologies for the public welfare. The discipline seeks fostering and supporting of innovative ideas for designing biomaterials for application of therapeutic and biomedical. Other bio-designed materials include affordable healthcare products such as bio-medical devices, implants & bioinstrumentation; bio-medical sensors, bio-imaging, tissue engineering etc.



It has been observed that the demand for medical devices and implants is growing rapidly in India and globally. Innovations in such fields are required to develop solution for local problems and ensure availability of affordable, simple, robust, reliable and flexible and workable setups in small towns, clinics and government health centres. The DBT has encouraged innovations to promote indigenous affordable medical technologies, bio-design programmes and building capacity for innovative research, prototyping, validation and testing of medical technologies.

Some of the important centres of such innovations are School of International Biodesign (SIB) programme; Healthcare Technology Innovation Centre, IIT-M; Centre for Bioscience and Bioengineering, IISc., Bangalore; and Centre for Biodesign, Translational Health Science & Technological Institute, Faridabad. The initiative focused on invention and early-stage

development of affordable implants and devices and promotion of innovation through multi-disciplinary approach. The institutes provide hands-on-training to med-tech innovators in bio-designing, and to create readily accessible processes and facilities to support the entire innovation process. Program also increases industry participation for scale-up of technology transfer and commercialization, and establish linkages with other national and international partners.

During last financial year (2018-19), two technologies developed under Stanford-India Biodesign (SIB) programme have been transferred to private players. The “Intraosseous Device” technology was transferred to M/s. RCupe Lifesciences Pvt. Ltd., Bangalore, and the second technology, “pleuraGoh-“has been transferred to M/s UNINO Healthcare Pvt. Ltd, Mumbai. During same time period, development of Cuffless blood pressure measurement, non-contact neonatal vitals monitoring, automated immunodiagnostics, minimally invasive image guided surgery and deep learning and AI based medical image computing has taken place.

Some of the technologies commercialized under partnership programmes and startups are immunodiagnostic analyzers with minimal sample preparation, image guided minimally invasive spine surgery system, fever monitor, endoscopy video processor etc.

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