

## IIT-M with Portescap to develop medical innovation using robotics

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**The CSR Project, which also involves CMC Vellore, aims to develop solutions like ‘Arm Rehabilitation Robot’ to assist people with arm impairments and improve their quality of life**



Indian Institute of Technology Madras is collaborating with the Motion Technology Firm Portescap to develop medical innovation using robotics for rehabilitation. This CSR Project also involves Christian Medical College (CMC) Vellore, a premier medical institution located in Vellore.

The Project facilitated by the Office of Institutional Advancement, IIT Madras, will focus on creating an innovative rehabilitation robot – AREBO (Arm Rehabilitation Robot) – for people with arm impairments.

AREBO is a six-degrees-of-freedom robot for training individual joint movements at the shoulder and elbow for persons with neurological and musculoskeletal conditions such as stroke, arthritis, cerebral palsy, and Parkinson’s disease, among others. The design of this robot allows it to be easily connected to either the left or right arm of a user and provides safe training of the arm.

Led by Prof Sujatha Srinivasan, Faculty Head, TTK Center for Rehabilitation Research and Device Development (R2D2), IIT Madras, and Prof Sivakumar Balasubramanian, CMC Vellore, such innovations significantly improve the quality of life of persons with disabilities. They also serve as a tool for therapists to remotely monitor performance and plan therapy accordingly.

As a second project, also funded by Portescap, IIT Madras has partnered with the Institute of Neurosciences, Kolkata, to develop a lower limb exoskeleton for ‘Gait Training’ of Stroke and Spinal Cord Injury patients and the design is in progress. This project is being led by Prof Sourav Rakshit, Department of Mechanical Engineering, IIT Madras.