NIT Rourkela secures two SPARC projects worth Rs 1.82 Cr to strengthen international research engagement

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To design affordable, scalable, and easy-to-use exosuits tailored for elderly individuals and post-stroke patients

National Institute of Technology (NIT) Rourkela has been awarded two research projects under the Scheme for Promotion of Academic and Research Collaboration (SPARC) of the Ministry of Education, Government of India, with a total sanctioned funding of over Rs 1.82 crore. Each project has a duration of two years.

SPARC is a national initiative aimed at strengthening India's research ecosystem by promoting structured collaboration between Indian higher education institutions and leading global universities, enabling joint research, academic exchange, and research capacity building in identified priority areas.

The first SPARC project, "Smart Exoskeletons in Healthcare: Principle and Practices for Developing Scalable Exosuits for Rural Applications" (Rs 95.16 lakh), focuses on developing wearable robotic devices, known as exoskeletons, that assist individuals in regaining or improving mobility following illness or injury.

Researchers from NIT Rourkela will be working closely with international experts to design affordable, scalable, and easy-to-use exosuits tailored for elderly individuals and post-stroke patients, particularly in local clinical and rural healthcare contexts. The wearable systems aim to support lower-limb movement and use smart sensors and artificial intelligence to analyse patient motion and assist in correcting movement patterns during rehabilitation. This institutional partnership includes joint coursework, hands-on design and prototyping workshops, and student and researcher exchanges.

The second SPARC project, "Novel Disruptive Technology: Design and Development of Smart and Sustainable Technology for Agri-Food Systems" (Rs 87.24 lakh), aims to develop a simple, rapid, and non-destructive technology for assessing the quality and safety of agri-food products, without cutting, cooking, or chemically testing them. Scientists from NIT Rourkela will be collaborating with foreign researchers to create a smart sensing system that uses mild electrical signals to evaluate food quality, similar in principle to a medical scan, but applied to food products. The technology is expected to enable real-time detection of freshness, spoilage, and quality variations across farms, markets, and food processing units. By making food testing quicker, more reliable, and field-deployable, the project seeks to improve food safety, reduce wastage, and support farmers, food processors, and consumers, particularly in resource-limited environments.