BioSpectrum
the business of Bi
24 years of leveraging the business of Bio
www.biospectrumindia.co

IIT Kanpur develops bio-inspired artificial muscle for medical prostheses

19 July 2022 | News

It will be utilised for adaptive robotic prostheses for bio-medical application in the country



The Smart Materials, Structures and Systems (SMSS) Lab at the Indian Institute of Technology (IIT), Kanpur, has developed a bio-inspired artificial muscle for next-generation space robots and medical prostheses.

The SMSS Lab at IIT Kanpur, inspired by the Portescap CSR funding, have expanded the design space of the SMA actuator by leveraging the characteristics of bi-pennate muscle architecture with about 70 per cent enhanced muscle force output per unit weight. This will result in the creation of a new class of Space Robots which will reinforce the
Indian Space Technology. The team is led by Prof Bishakh Bhattacharya, Professor, Department of Mechanical Engineering at IIT Kanpur, and consists Kanhaiya Lal Chaurasiya, Senior Project Engineer, Mechanical Engineering, IIT Kanpur; Abhishek Kumar Singh, Senior Project Mechanic; A Sri Harsha, and Yashaswi Sinha, Project Engineer, Mechanical Engineering, IIT Kanpur.

The primary goal of an actuator is to generate mechanical output, such as force and displacement, by transforming electrical energy. Shape memory alloys are a class of smart materials that can restore their shape after being exposed to high temperatures.