

'Snapping' Footwear Prevents Diabetic Foot Complications



(a) Footwear with a self-offloading insole underneath the top sole (b) one of the volunteers wearing the self-offloading footwear

Image Credit: Priyabrata Maharana, Jyoti Sonawane

A team of researchers in the Department of Mechanical Engineering, Indian Institute of Science (IISc), Bengaluru, in collaboration with the Karnataka Institute of Endocrinology and Research (KIER), have developed a set of unique self-regulating footwear for people who suffer from nerve damage caused by diabetes, leading to a loss of sensation in the foot. Snapping mechanism in these footwear keeps the feet well-balanced, enabling faster healing of the injured region and preventing injuries from arising in other areas of the feet. The study was published in *Wearable Technologies*.

Source: IISc, Press release

Flexible, highly sensitive motion device



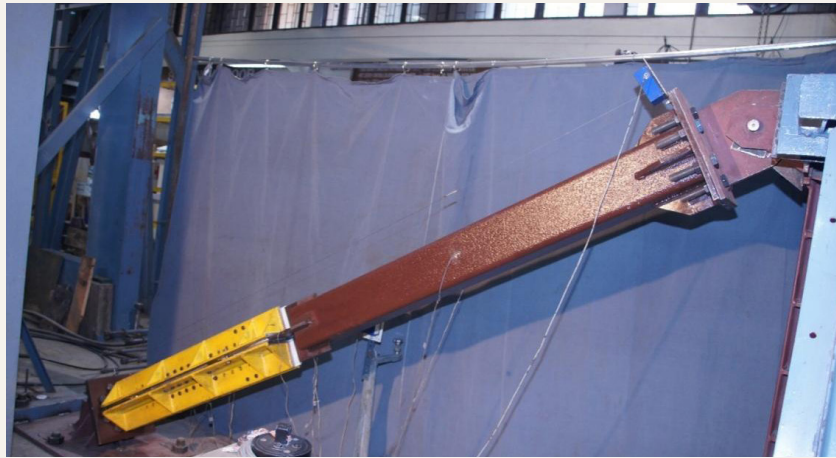
Image credit: UBCO

UBCO doctoral student Ahmadreza Ghaffarkhah uses a 3D printer to create small and highly-accurate sensors that can be integrated into clothing and equipment

WEARABLE technology — smartwatches, heart monitors, sleep aid devices, even step counters — have become part of everyday life. And researchers with UBC Okanagan's Nanomaterials and Polymer Nanocomposites Laboratory have created even smaller, lighter and highly-accurate sensors that can be integrated into clothing and equipment. Tiny and lightweight, these EMI shields can have applications in the health care, aerospace and automotive industries, explains Dr Mohammad Arjmand, Assistant Professor and Canada Research Chair in Advanced Materials and Polymer Engineering at UBC Okanagan's School of Engineering. The research was published in *Carbon*.

Source: University of British Columbia Okanagan campus, Media release

Hybrid Buckling-Restrained Braces (HBRBs) — Improve Earthquake Resistance of Structures



RESEARCHERS from the India Institute of Technology Delhi (IIT Delhi) have developed a novel, low-cost, Hybrid Buckling-restrained Brace (HBRB) that can provide improved protection to constructions from earthquakes. These braces have higher strength, better energy dissipation potential, and excellent ductility.

Source: IIT Delhi, Press release

Flexible Microprobe for Neural Interfacing

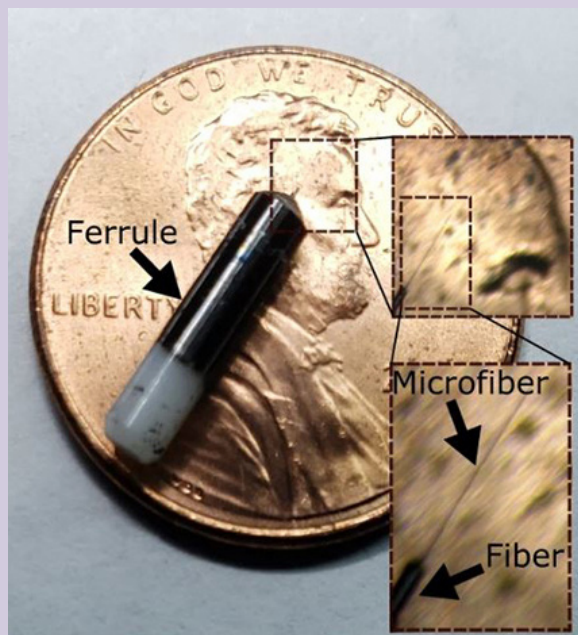


Image Credit: Spencer Ward

Photograph of a small capsule supporting the neural probe, with a close up of the microfibre tip.

RESEARCHERS at the University of California San Diego and the Salk Institute for Biological Studies have developed a tiny neural probe that is approximately one-fifth of the width of a human hair. It can be implanted for a longer duration to record and stimulate neural activity while minimising injury to the surrounding tissue. The team says that this type of neural probe would be ideal for studying small and dynamic areas of the nervous system like peripheral nerves or the spinal cord. The details are published in the journal *Nature Communications*.

Source: University of California San Diego, Press release