

IIT-G develops cost-effective motion sensor for healthcare applications

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Gel-based device capable of wirelessly recording motion signals that can be used for healthcare applications

Researchers from the Indian Institute of Technology, Guwahati (IIT-G) have successfully engineered a cost-effective, gel-based wearable device that is capable of recording motion signals.

The Organohydrogel sensor, placed on the bodies of patients in comatose states or facing similar conditions, through a wireless device and a smartphone can monitor subtle movements over an extended period. This provides healthcare professionals with invaluable insights into patient conditions and appropriate interventions can be taken.

Speaking about the breakthrough research Prof. Debapratim Das, Department of Chemistry, IIT-G said, "We introduced a secondary cross-linking to significantly boost the mechanical properties of the gel and employed precise ratios of glycerol and water to ensure environmental tolerance from -20 to 40 °C. Furthermore, our findings reveal the gel's remarkable biocompatibility, allowing its safe application on human skin without any side effects."

The researchers fabricated a device that was connected through a smartphone via Bluetooth where signals were recorded upon deformation of the smart gel, which shows that the gel holds great promise as a wearable device.

Image caption- Prof. Debapratim Das, Department of Chemistry, IIT-G, and research scholar Ritvika Kushwaha