BioSpectrum the business of Bio & Health Sciences ASIA EDITION

Researchers in Korea develop sweat resistant wearable robot sensor?

30 January 2024 | News

Through its excellent performance, the sensor is anticipated to be able to stably control wearable robots over along period of time

New electromyography (EMG) sensor technology that allows the long-term stable control of wearable robots and is not affected by the wearer's sweat and dead skin has gained attention recently. Wearable robots are devices used across a variety of rehabilitation treatments for the elderly and patients recovering from stroke or trauma.

A joint research team from the School of Electrical Engineering (EE) and Department of Mechanical Engineering (ME), at Korea Advanced Institute of Science & Technology, have developed a stretchable and adhesive microneedle sensor that can electrically sense physiological signals at a high level without being affected by the state of the user's skin.

For wearable robots to recognise the intentions behind human movement for their use in rehabilitation treatment, they require a wearable electrophysiological sensor that gives precise EMG measurements. However, existing sensors often show deteriorating signal quality over time and are greatly affected by the user's skin conditions.

The recently developed technology is expected to allow long-term and high-quality EMG measurements as it uses a stretchable and adhesive conducting substrate integrated with microneedle arrays that can easily penetrate the stratum corneum without causing discomfort.

The new technology can be used to control wearable robots with higher precision and stability, which will help the rehabilitation of patients who use robots.