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Scientists in Guwahati develop new device for wearable sensors and point-of-care testing

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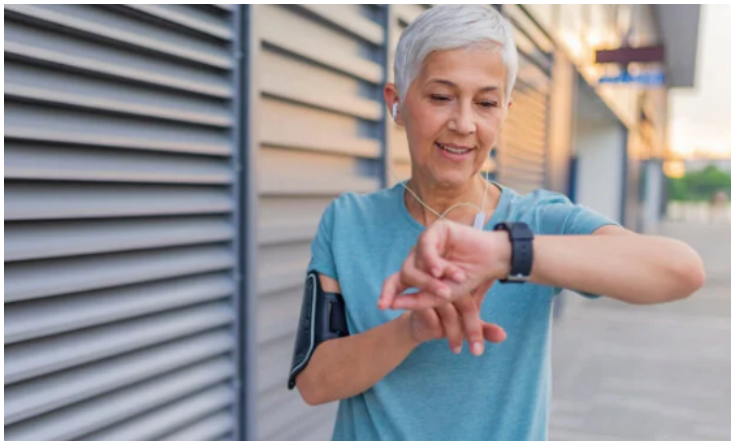

A new flexible bio-electronic uric acid detecting device has been fabricated by the researchers from the Institute of Advanced Study in Science and Technology (IASST), Guwahati that can be used for various applications such as wearable sensors and point-of-care diagnostics.

Uric acid is one of the most important antioxidants that maintain blood pressure stability and reduce oxidative stress in living beings. However, the fluctuation of uric acid levels due to the lack of balancing between the production and excretion causes several diseases like hyperuricemia, which in turn may lead to gout disease, type 2 diabetes, increase risk of cardiovascular diseases, Lesch–Nyhan syndrome, hypertension, and renal disorders.

The fabricated device shows reversibility in interaction with the uric acid, which repeatedly enables the use of the device for sensing experiments. It outperforms all currently available ones in terms of effectiveness and cost because it doesn't need any enzymes.

The response of the fabricated device was investigated with real samples like human blood serum and artificial urine. The device thus developed is simple, portable, cost-effective, and easy to fabricate for detecting uric acid with a limit of about 0.809 µM.