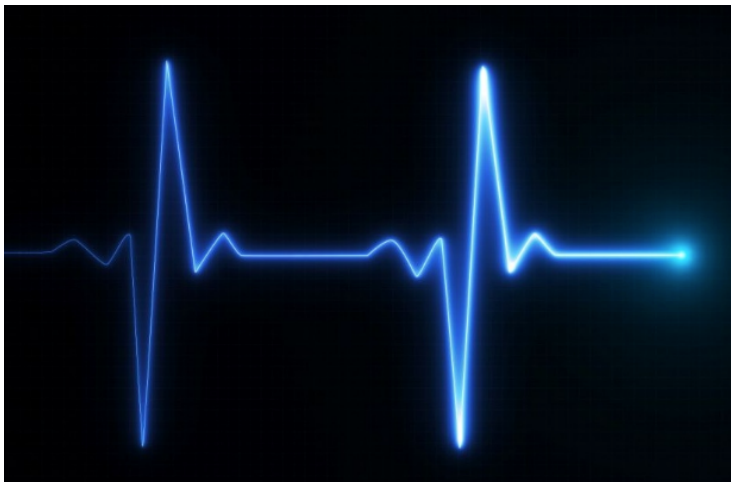
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Korea designs hair-thin patch for measuring pulse waves

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The newly developed technology allows for at-home diagnosis of diseases that are usually performed only at hospitals



A team of scientists at the Pohang University of Science and Technology (POSTECH) in South Korea has developed a wearable sensor patch, thinner than a hair strand, that can measure pulse wave signals with high precision.

What is notable about this research is that the patch was printed using inkjet printing that we are familiar with. This printing technology is also well known as a next-generation semiconductor manufacturing method that can dramatically reduce cost. Using this technology, wearable electronic devices can be made by simply printing conductive ink on a very thin substrate.

The research team fabricated a pressure sensor that mimics skin's tactility and used it to enable physical pulse waves to be detected by the patch just as they are detected by the fingers. The researchers also used a patch-type device with 100 sensor pixels to obtain a two-dimensional (2D) pressure map on the wrist. Conventional wearable pulse wave sensors are designed to measure signals only at a single location, making it difficult to accurately place them on the artery, leading to less precise measurements.

Professor Sung-Min Park of POSTECH, said, "it can be used for medical applications such as pre-diagnosis of cardiovascular diseases and arterial catheter injections in daily life."