The next generation of wearable devices might be as easy to use as a temporary tattoo.

McCormick engineers are part of a team that has demonstrated thin, soft, stick-on patches that stretch and move with the skin and incorporate electronics for sophisticated wireless health monitoring.

The patches stick to the skin and use a unique microfluidic construction with folded wires to allow the patch to bend and flex without being constrained by the rigid electronics components. The patches could be used for everyday health tracking and could revolutionize clinical monitoring, such as EKG and EEG testing.

“We designed this device to monitor human health 24/7, but without interfering with a person’s daily activity,” said Yonggang Huang, the Joseph Cumming Professor of Civil and Environmental Engineering and Mechanical Engineering. “This device is wirelessly powered and can send high quality data about the human body to a computer in real time.”

Huang, along with longtime collaborator John A. Rogers of the University of Illinois, compared the device to traditional EKG and EEG monitors and found the wireless patch performed equally to conventional sensors, but was significantly more comfortable for patients.