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30. 04. 2018

Researchers at Carnegie Mellon University and Disney Research have a means to transform walls into a smart home control interface-- and all it requires is conductive paint and some electronics.

"Walls are usually the largest surface area in a room, yet we don't make much use of them other than to separate spaces, and perhaps hold up pictures and shelves," the researchers say. "As the internet of things and ubiquitous computing become reality, it is tempting to think that walls can become active parts of our living and work environments.

Dubbed Wall++, the system involves the application of conductive paint and a sensor board to a wall. The paint is water-based and contains nickel for conductivity. First, one creates a crosshatch pattern on the wall using painter's tape. After the application of two coats of conductive paint with a roller, the tape is removed and the sensor board is connected. Finally the wall is painted again with a top coat of standard latex paint to hide the conductive paint pattern.

The electrode wall operates in 2 modes-- capacitive sensing and electromagnetic sensing. Capacitive sensing turns the wall into a capacitive touchpad. Electromagnetic sensing has the electrodes detect the electromagnetic signatures of electronic devices, allowing the Wall++ system to identify and locate devices.

The Wall++ is still at its early stages, and is not optimised for energy consumption (the current version consumes as much power as a standard touchscreen). But the idea of controlling a device such as a TV by simply gesturing on the wall poses an interesting control alternative to shouting at a smart speaker.

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