



Smart walls

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SMART WALLS REACT TO THE HUMAN TOUCH

 MANUFACTURING

Researchers have integrated sensory electrodes into walls that can sense activity in a room and create additional interactive surfaces.

Researchers at [Carnegie Mellon University](#) and [Disney Research](#) are changing the way we look at walls. No longer just the perimeter of a room, the team have created smart walls that sense activity within the space. Researchers found they could use conductive paint to create electrodes across the surface of a wall. This enables it to act as a touchpad to track users' touch and an electromagnetic sensor to track electrical devices. The innovation, called Wall++, could help users place or move light switches or other controls anywhere on a wall. Moreover, it could also be used to control videogames by simply using gestures.

The electrode wall can operate in two modes – capacitive sensing and electromagnetic (EM) sensing. In capacitive sensing, the wall functions like any other touchpad. When a person touches the wall, the touch distorts the wall's electrostatic field. In EM sensing mode, it can detect the electromagnetic signatures of electronic devices, enabling the system to identify the devices and their locations. Furthermore, if a person is wearing a device that emits an EM signature, the system can track the location of that person.

The technology costs just 20 USD per square meter, and is created using simple tools such as a paint roller. Wall++ hasn't yet been optimised for energy consumption. However, it is estimated the wall-sized electrodes consume about as much power as a standard touchscreen.

Touchscreen technology enables innovators to expand their offering to the public. Once simply an idea, the systems are now much more accessible and easy to integrate into products. From the touchscreen tablet in its rawest form that helps **elderly people** stay connected, to **the steering wheel** with an embedded touchscreen, technology is expanding constantly. How else could touchscreens be integrated into everyday appliances?

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Email: bspice@cs.cmu.edu

Website: www.cs.cmu.edu

Contact: www.cs.cmu.edu/key-contacts