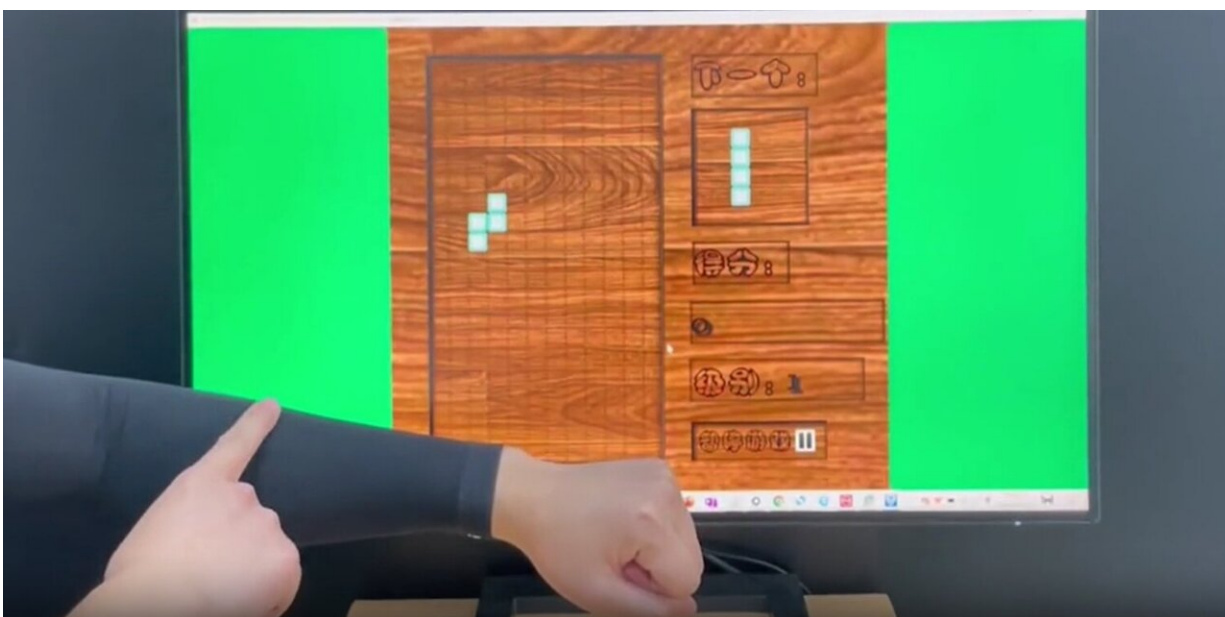


A touch-responsive fabric armband for flexible keyboards, wearable sketchpads

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Credit: *ACS Nano* (2023). DOI: 10.1021/acsnano.2c12612

It's time to roll up your sleeves for the next advance in wearable technology—a fabric armband that's actually a touch pad.

In *ACS Nano*, researchers say they have devised a way to make playing video games, sketching cartoons and signing documents easier.

Their proof-of-concept silk armband turns a person's forearm into a

keyboard or sketchpad. The three-layer, touch-responsive material interprets what a user draws or types and converts it into images on a computer.

Computer trackpads and electronic signature-capture devices seem to be everywhere, but they aren't as widely used in wearables.

Researchers have suggested making flexible touch-responsive panels from clear, electrically conductive hydrogels, but these substances are sticky, making them hard to write on and irritating to the skin. So, Xueji Zhang, Lijun Qu, Mingwei Tian and colleagues wanted to incorporate a similar hydrogel into a comfortable fabric sleeve for drawing or playing games on a computer.

The researchers sandwiched a pressure-sensitive hydrogel between layers of knit silk. The top piece was coated in graphene nanosheets to make the fabric electrically conductive. Attaching the sensing panel to electrodes and a data collection system produced a pressure-responsive pad with real-time, rapid sensing when a finger slid over it, writing numbers and letters.

The device was then incorporated into an arm-length silk sleeve with a touch-responsive area on the forearm. In experiments, a user controlled the direction of blocks in a computer game and sketched colorful cartoons in a computer drawing program from the armband. The researchers say that their proof-of-concept [wearable](#) touch panel could inspire the next generation of flexible keyboards and wearable sketchpads.

More information: Ruidong Xu et al, Skin-Friendly and Wearable Iontronic Touch Panel for Virtual-Real Handwriting Interaction, *ACS Nano* (2023). [DOI: 10.1021/acsnano.2c12612](https://doi.org/10.1021/acsnano.2c12612)

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