

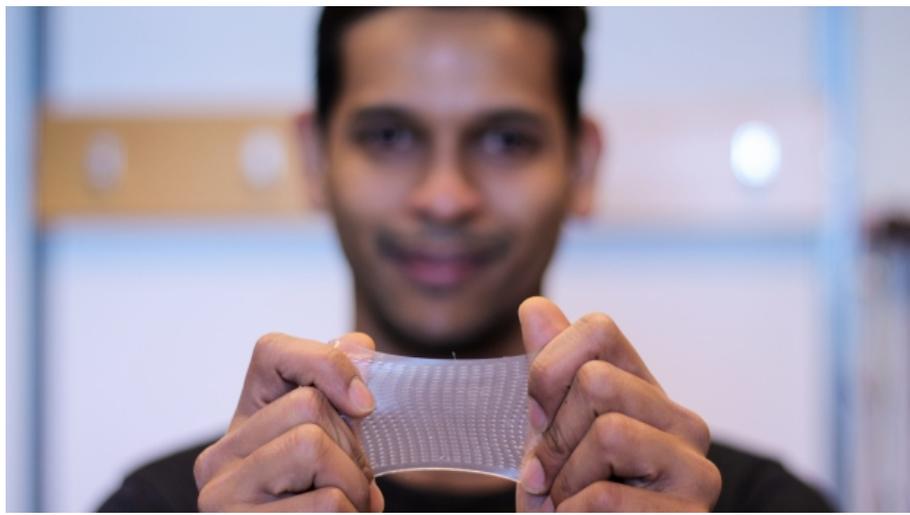
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# UBC researchers develop touch sensor that can be bent, stretched

Researchers say technology could be used to create foldable touch screens, wearable technology

By Gavin Fisher, CBC News Posted: Mar 15, 2017 8:00 PM PT | Last Updated: Mar 15, 2017 8:00 PM PT



PhD student Mirza Saquib Sarwar holds up the prototype of a bendable, stretchable touch sensor he helped develop. (Clare Kiernan/UBC Public Affairs)

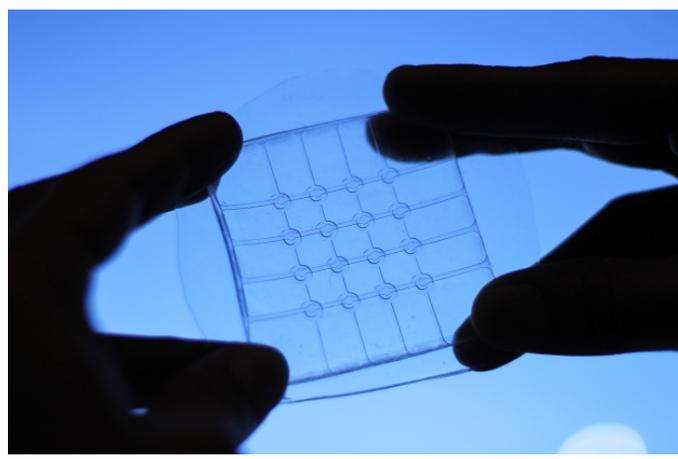
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Researchers at the University of B.C. have developed a touch sensor that works even when it is stretched or bent, and say the technology could be used to help create devices such as foldable touch screens or wearable technology that conform to one's body.

"It's the first transparent touch sensor that is still able to detect a touch while being actively deformed," said Mirza Saquib Sarwar, a PhD student in electrical and computer engineering at UBC.

Sarwar is the lead author of a **paper published March 16** in the online peer-reviewed journal Science Advances that discusses a prototype of the sensor, made using a highly conductive gel sandwiched between layers of silicone.



The prototype that Sarwar and his colleagues developed measures five centimetres by five centimetres. (Clare Kiernan/UBC Public Affairs)

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"It uses low-cost, widely available materials and a really simple fabrication process which enables us to fabricate these for roughly a dollar per meter squared."

The sensor, which can even detect a hovering finger, could change the future of tablets and wearable technology, Sarwar said.

"You can imagine handhold devices that you could roll up or fold and put away in your wallet or your pocket, and then when you need it you could fold it out and make it into a big tablet and use it."

## Could make robots safer

Sarwar said though their prototype measures five centimetres by five centimetres, it could easily be scaled up to a larger size.

"Being cheap, and being able to have large-area applications, you can imagine laying it down on floors and detecting the presence of people. Or even for elderly care — if an elderly [person] falls, you can detect that.

"So the applications actually are very widely ranged."



UBC professor John Madden (left) holds up the prototype that his graduate student Mirza Saquib Sarwar (right) helped develop. (Clare Kiernan/UBC Public Affairs)

John Madden, Sarwar's supervisor and a professor in UBC's faculty of applied science, said in a release that the sensor could also be integrated with robot to make them safer for use with humans.

"Currently, machines are kept separate from humans in the workplace because of the possibility that they could injure humans," Madden said.

"If a robot could detect our presence and be soft enough that they don't damage us during an interaction, we can safely exchange tools with them, they can pick up objects without damaging them, and they can safely probe their environment."



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With files from Brenna Rose



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