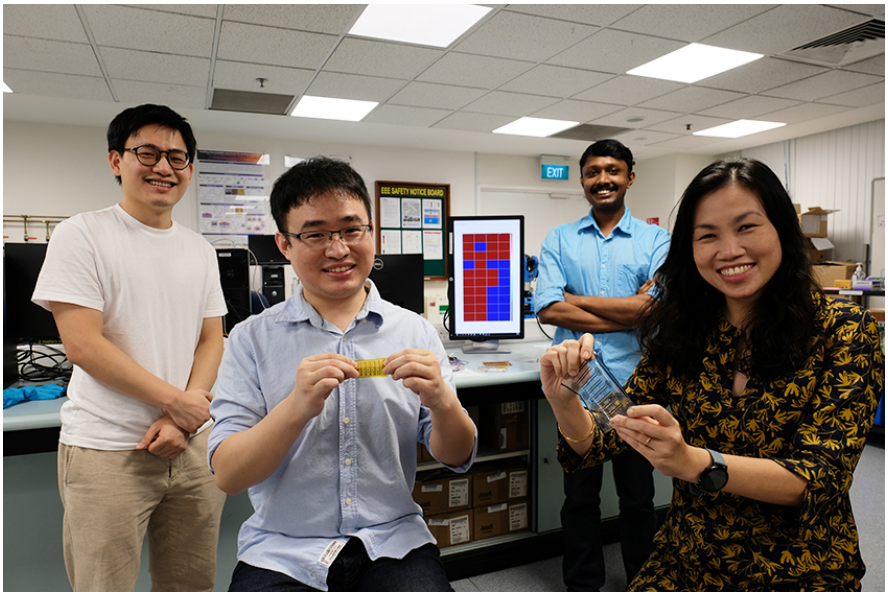
Science JUNE 17, 2021 12:50 PM AEST

Ultrasensitive pressure sensors pave way for 'skin'



Robots could soon have 'skin' so sensitive it can detect a flower petal or a grain of rice.

Researchers from NTU Singapore have invented a pressure sensor that can be 'printed' material such as paper or plastic film, and which are 100 times more sensitive than exist commercial sensors.

A working prototype of the sensor has been integrated into a robotic hand that is capab gripping delicate objects, such as an egg.

These sensors can be printed onto large, flexible patches, which can then be used as a 's autonomous robots for real-time feedback and touch sensing. Robots covered in such a react to stimuli the same way that humans do, making them safer and more responsive deployed in crowds.

Led by Assistant Professor Leong Wei Lin from the School of Electrical and Electronic Eng the team, comprising research fellow Dr Chen Shuai and PhD students Surendran Abhiji Xihu, is developing these further applications for their breakthrough based on a grant fr Singapore's National Robotics Programme.

These sensors are enabled by a breakthrough in a type of transistors called organic elec transistors (OECTs). While traditional OECTs contain liquid electrolytes, the NTU team's s solid polymer electrolytes instead, which can conduct ions and electrons just as effective based OECTs while overcoming their limitations.

Timeline

Chester joint release – Veteran health boost with Fussell House opening in NSW
12:01 PM AEST

NSW latest Covid-19 update as at 18 June
12:00 PM AEST

Thousands of jobs and millions of dollars foregone by NSW Government project offshoring
12:00 PM AEST

Western Australia coronovirus update as at 18 June 2021
11:55 AM AEST

Woolworths supports Australia's dairy farming innovators with more than $2 million in grants
11:54 AM AEST

Carringbush student portraits: learn about refugee experiences in our local community
11:54 AM AEST