

Human-like skin developed for robots

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A flexible, electronic skin developed by University of Tokyo researchers may provide robots with a nearly human sense of touch.

Last year, Takao Someya and colleagues reported the development of an artificial skin that could sense pressure. But since the human sense of touch is much more complex, different types of sensors and more flexible material was required for use on three-dimensional surfaces, such as robot fingers.

In the current study, Someya and colleagues embedded organic transistor-based electronic circuits in a thin plastic film. The circuits, along with organic semiconductors, are capable of sensing pressure, as well as temperature.

Someya said the net-like matrix is flexible enough to conform to the surface of an egg and can detect pressure and temperature simultaneously.

Since the organic transistors used were reportedly flexible, inexpensive, and easy to fabricate, they could potentially be used in manufacturing robot skin and other commercial products.

With further refinement, the researchers suggest it might be possible to create an electronic skin with superhuman abilities to sense light, humidity and sound.

The research appears in this week's online early edition of the

Proceedings of the National Academy of Sciences.

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