

Organic transistors on polymer created

by UPI

GAITHERSBURG, Md. - U.S. scientists have developed a technique that might offer a low-cost way to mass produce organic electronic transistors on polymer sheets. Researchers from the National Institute of Standards and Technology, Penn State University and the University of Kentucky said their technique potentially offers an inexpensive way to mass produce such transistors for a wide range of applications including flexible displays, "intelligent paper" and flexible sheets of biosensor arrays for field diagnostics. The scientists discovered a chemical pretreatment of electrical contacts can induce self-assembly of molecular crystals to both improve the performance of organic semiconductor devices and provide electrical isolation between devices. In addition to its potential as a commercially important manufacturing process, the researchers said the chemically engineered self-ordering of organic semiconductor molecules can be used to create test structures for fundamental studies of charge transport and other properties of a range of organic electronic systems. The findings are detailed in the online issue of the journal *Nature Materials*.

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