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## Space Confined Polymer-Based Field Effect Transistors

Tech ID: 24594 / UC Case 2012-027-0

### INNOVATION

Professor Tolbert and colleagues have developed a polymer field effect transistor (FET) which employs a silica space-confinement structure to allow high carrier mobility. Prototype devices have demonstrated carrier mobilities of 10 cm<sup>2</sup>/Vs due to the device's conduction along a polymer chain, rather than through an inter-chain network. Fabrication method can potentially be used to create transistors as narrow as 5 nm. This technology is well suited for applications in thin, flexible or low-cost devices, including displays, sensors, RFID and smart textiles.

### PATENT STATUS

Country	Type	Number	Dated	Case
Japan	Issued Patent	JP4708861	06/22/2011	2012-027
United States Of America	Issued Patent	7,888,170	02/15/2011	2012-027

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### INVENTORS

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### OTHER INFORMATION

#### KEYWORDS

Polymer-based field effect transistors

#### CATEGORIZED AS

- ▶ **Materials & Chemicals**
  - ▶ Electronics Packaging
  - ▶ Other
  - ▶ Polymers
  - ▶ Textiles
- ▶ **Nanotechnology**
  - ▶ Electronics
  - ▶ Materials
  - ▶ Other

#### RELATED CASES

2012-027-0

### ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Robust Mesoporous Nife-Based Catalysts For Energy Applications](#)
- ▶ [Nanoporous Tin Powder For Energy Applications](#)

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