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 cm2/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
United States Of America	Issued Patent	7,888,170	02/15/2011	2012-027

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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

- Novel Metal Chalcogenides For Pseudocapacitive Applications
- Robust Mesoporous Nife-Based Catalysts For Energy Applications
- Nanoporous Tin Powder For Energy Applications