



## Gate Insulator Material for Low Voltage Printed Electronics

This transparent, polymer-based gate insulator material for field effect transistors (FETs) can be easily applied to plastic substrates for low cost, low voltage flexible electronics applications.

Organic semiconductors are a viable option for low-cost, flexible substrate electronic applications including RFID, display, sensor, lighting and memory applications. Printable electronics (PE) have the potential to enable electronics 'anywhere'. Using the new gate insulator polymer electrolyte with inherent very large capacitance enables low operating voltages as compared to traditional OFET dielectric materials opening the avenue for numerous new applications such as electronic signage which require inexpensive electronics.

### Features & Benefits

- Low voltage operation – 0 to 4V.
- High current – very high current in the ON state, more than can be achieved with conventional amorphous Si thin film transistors, supplies enough current for organic light emitting diodes (OLEDs).
- Solution processable – materials can be easily printed and adaptable for manufacturing. The thickness of the layer can be controlled and is not critical to performance.
- Fewer Shorts – the smoother amorphous material layer facilitates inverting the transistor geometry to allow the gate electrode to be put down first.

### Technology Status

Can be utilized in current state. Prototype produces more current than amorphous silicon traditionally used in transistors. Devices produced using several printing methods.

### IP Status

Patents pending worldwide.

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