

# **New Materials Strategies for Creating Hybrid Electronic Circuitry (Presentation Video)**

**Tobin J. Marks**, Northwestern Univ. (United States)



## **ABSTRACT**

This lecture focuses on the challenging design and realization of new materials for creating unconventional electronic circuitry. Fabrication methodologies to achieve these goals include high-throughput, large-area printing techniques. Materials design topics to be discussed include: 1. Rationally designed high-mobility p- and n-type organic semiconductors for printed organic CMOS, 2. Polycrystalline and amorphous oxide semiconductors for transparent and mechanically flexible electronics, 3) Self-assembled and printable high-k nanodielectrics enabling ultra-large capacitance, low leakage, high breakdown fields, minimal trapped interfacial charge, and device radiation hardness. 4) Combining these materials sets to fabricate a variety of high-performance thin-film transistor-based devices.

View presentation video on SPIE's Digital Library: <http://dx.doi.org/10.1117/12.2050975>