

IAS Distinguished Lecture

How do we Create and Process Materials for Flexible, Transparent Electronic Circuitry?

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Date : 19 January 2018 (Friday)

Time : 10:30am – 12:00nn (*Light refreshments will be served from 10:00am to 10:30am*)

Venue : Connie Fan Multi-media Conference Room, 4/F, Cheng Yick-chi Building,
City University of Hong Kong

Abstract

This lecture focuses on the challenging design, realization, understanding, and implementation of new materials families for unconventional electronics. Fabrication methodologies to achieve these goals include high-throughput, large-area, high-resolution printing techniques.

Materials design topics will include:

1. Rationally designed high-mobility p- and n-type organic semiconductors for printed organic CMOS,
2. Self-assembled high-*k* nanodielectrics enabling ultra-large capacitance, low leakage, high breakdown fields, minimal trapped interfacial charge, and device radiation hardness,
3. Polycrystalline and amorphous oxide semiconductors for printable transparent and mechanically flexible electronics,
4. Combining these materials sets to fabricate a thin-film transistor-based circuitries,
5. The relevance of these advances to unconventional photovoltaics.

Biography

Tobin Marks is Ipatieff Professor of Catalytic Chemistry, Professor of Materials Science and Engineering, Professor of Applied Physics, and Professor of Chemical and Biological Engineering at Northwestern University. He obtained a BS degree in Chemistry from the University of Maryland, and a PhD in Inorganic Chemistry from MIT. His recognitions include the U.S. National Medal of Science, the Spanish Principe de Asturias Prize, the Materials Research Society Von Hippel Award, the Dreyfus Prize in the Chemical Sciences, the National Academy of Sciences Award in Chemical Sciences, and the American Chemical Society Joseph Priestley Medal. He is a member of the U.S., German, and Indian National Academies of Sciences, the U.S. National Academy of Engineering, the American Academy of Arts and Sciences, and the U.S. National Academy of Inventors. He is a Fellow of the U.K. Royal Society of Chemistry, the Materials Research Society, and the American Chemical Society. Marks has published 1260 peer-reviewed articles and holds 260 issued U.S. patents. He holds Honorary Doctorate Degrees from Hong Kong University of Science and Technology, the University of South Carolina, the Ohio State University, and the Technical University of Munich.



All are welcome

Online registration: www.cityu.edu.hk/ias/event

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