CityU 香港城市大學 City University of Hong Kong

Hong Kong Institute for Advanced Study 香港高等研究院

HKIAS Distinguished Lecture Series

Making Mechanically Agile Electronics, Opto–Electronics, and Iontronics a Reality. Electroactive Polymers and Amorphous Oxides

Prof Tobin J. Marks,
Northwestern University

Date: 9 January 2024 (Tuesday)
Time: 4:30pm-5:30pm (Light refreshment will be served from 4:00pm-4:30pm)
Venue: LT-8, F.A.M. Lecture Theatre
Yeung Kin Man Academic Building, City University of Hong Kong

Abstract This lecture focuses on the challenging, understanding-based design, creation, and realization of new materials combinations for unconventional, flexible/bendable/stretchable electronic circuitry. Fabrication methodologies include high-throughput, large-area, high-resolution patterning techniques. Materials design issues for next-generation electronics and sensors build upon the above findings and include: 1. Designing mechanical agility into semiconducting molecular and polymeric electronics, 2. Harmonizing electron/hole and ion conduction for iontronic circuitry, 3. Hybridizing organic and oxide electronics for flexible optically transparent circuitry. In all areas, the symbiosis of green materials synthesis, computational modeling and simulation, and materials characterization over multiple length and time scales are central to progress.

Biography Chemistry BS from University of Maryland, Inorganic Chemistry PhD from MIT. Recognitions: U.S. National Medal of Science, Spanish Asturias Prize, MRS Von Hippel Award, Dreyfus Chemical Sciences Prize, NAS Chemical Sciences Award, ACS Priestley Medal, Israel Harvey Prize, German Chemical Society Ziegler Prize. Fellow: U.S., German, Italian, European, and Indian Academies of Sciences, U.S. National Academy of Engineering, American Academy of Arts and Sciences, American Philosophical Society, and U.S. National Academy of Inventors. Fellow: U.K. ACS, Chinese, Israel Chemical Societies; MRS Fellow; ~250 other awards/recognitions; 1500 peer-reviewed publications; 210 U.S. patents. Honorary Doctorates: HKUST, University of South Carolina, Ohio State University, and Technical University Munich. Founded/co-founded 15 start-ups; his technologies generated ~$100 billion in sales.

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