

SPEAKER

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**OIST Seminar**

Okinawa Institute of Science and Technology

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**New Materials and Fabrication Paradigms for Plastic Opto/Electronics**

Monday, November 10, 2014 15:30 – 16:30

@ Meeting Room Lab 1 [D014]

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**Abstract:** Solution processable semiconductors represent an important class of electronic materials that are expected to revolutionize the development of a wide range of fast emerging opto-electronic products such as flexible flat-panel displays, inexpensive photovoltaics, light-emitting diodes and unconventional semi/transparent optoelectronics. In this talk I will present our recent work on the development of high-performance opto/electronic devices based on a range of solution-processable organic and inorganic semiconductors as well as on the development and use of novel patterning methodologies for the fabrication of plastic nano-electronics. The presentation is divided into three parts. In the first part, I will discuss the development of organic transistors based on binary semiconducting blends and how this simple approach can be used, in combination with existing materials, to develop devices with record-breaking performance characteristics. In the second part I will present our recent work in the area of metal oxide semiconductors and transistors grown via solution-based techniques. Emphasis will be placed on our recent effort to circumvent fundamental charge transport limitations imposed by the physical properties of single oxide layers through the development of low-dimensional, solution-processed oxide superlattices. In the third and final part of my talk, I will describe the development of a novel patterning technique called adhesion lithography (a-Lith) for the manufacturing of plastic nano-scale electronics based on organic and inorganic semiconducting materials.

**Short Biography:** Thomas Anthopoulos is a Professor of Physics in the Department of Physics at Imperial College London. He has spent several years in industry and specifically at Philips Research Laboratories (The Netherlands) as Marie Curie Fellow before joining Imperial College as an Engineering and Physical Sciences Research Council (EPSRC) Advanced Fellow and later as Research Council UK (RCUK) Fellow/Lecturer. He is a recipient of a European Research Council (ERC) Starting Grant Award (2011), the Ben Sturgeon Award (Society for Information Display - SID), The Alfred Woodhead Best Paper Award and the Imperial College London Research Excellence Award. He has authored more than 160 scientific publications, several book chapters and has filed over 10 patents and patent applications. He is a co-founder of C-Change LLP and The Centre for Plastic Electronics (CPE). His current research is diverse and funded by numerous national/international funding agencies and companies.

For more information

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