IEN Technical Seminar on Advanced Fabrication: Vanishing Devices – From Sensors to Drones Enabled by Transient Polymers



Professor Paul A. Kohl Hercules, Inc./Thomas L. Gossage Chair & Regents' Professor Georgia Institute of Technology Chemical and Biomolecular Engineering

Wednesday, December 6th, 2017 | 12:00pm - 1:00pm Marcus Nanotechnology Building | Room 1117-1118

Abstract: Transient materials are those designed for a specific end-of-life. The end-of-life can be triggered by a particular event (e.g. sunrise or the end of a mission) or the end-of-life can simply be planned obsolescence (don't clutter a land-fill). Transient polymers are particularly valuable in these devices because they can be used in structural applications (component backbone) or part of the active device (e.g. sensors). Low ceiling temperature poly(aldehydes) are particularly valuable because the can be depolymerized into liquids or gases at a variety of temperatures when exposed to thermal, chemical, or photochemical stimuli. The nature of transient polymers will be described including advances in the synthesis of poly(aldehydes), component formulations & physical properties, triggering mechanisms, and component processing. The applications include disappearing sensors and airborne delivery vehicles.

Biography: Paul Kohl received a Ph.D. from The University of Texas, in Chemistry in 1978. After graduation, Dr. Kohl was employed at AT&T Bell Laboratories in Murray Hill, NJ from 1978 to 1989. During that time, he was involved in new chemical processes for silicon and compound semiconductor devices and their packaging. In 1989, he joined the faculty of the Georgia Institute of Technology in the School of Chemical and Biomolecular Engineering, where he is currently a Regents' Professor and holder of the Hercules Inc./ Thomas L. Gossage Chair. Dr. Kohl's research interests include new materials and processes for advanced interconnects for integrated circuits, and electrochemical energy devices for energy conversion and storage. He has more than 270 journal publication, 64 US patents, and more than 400 conference presentations. Dr. Kohl is the past Editor of the Journal of the Electrochemical Society and Electrochemical and Solid-State Letters, past Director of the MARCO Interconnect Focus Center, and past President of the Electrochemical Society.



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Pizza lunch will be provided, however we ask that you limit yourself to two slices so that all attendees are accommodated.