

# IEEN Technical Seminar Series on Advanced Fabrication



## ***Electrodeposition: Fundamentals to Applications***

***Hercules, Inc./Thomas L. Gossage Chair and Regents' Professor Paul A. Kohl***

***Georgia Institute of Technology School of Chemical and Biomolecular Engineering***

***2 Day Event: Thursday April 3rd & Thursday April 10th, Time: 12:00-1:00pm***

***Marcus Nanotechnology Building Conference Room 1116***



**Abstract:** Electrodeposition is a well-established fabrication method for forming metals in a wide number of applications, including microelectronic devices. The properties of the electrodeposited metal are a function of the parameters used in the deposition process. Recipe-driven processes often contain a mysterious combination of chemicals and conditions leading where cause and effect relationships are unclear. The purpose of these two seminars is to describe the role of the components used in electrodeposition and provide a basis for understanding the process and its improvements. The topic will be broken down into two seminars. The first seminar will deal with fundamentals of electrodeposition, including the electrified interface, crystallization, transport during electrodeposition, and the basic components of an electro- and electroless deposition process. The second seminar will examine several case studies (e.g. copper, gold, chromium, and alloy plating) where the design of the plating bath/equipment and process-property relationships are described.

**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 ionic conducting polymers for electrochemical devices, high energy density batteries, electrodeposition, and new materials and processes for advanced interconnects for integrated circuits. He has 250 journal publication, 58 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 Letter, past Director of the MARCO Interconnect Focus Center, and President-Elect of the Electrochemical Society.

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