IBS Center for Multidimensional Carbon Materials

Special Guest Speaker

Prof. Paul WEISS

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Precise Chemical, Physical, and Electronic Nanoscale Contacts

AUG 3 WED
2 P.M.

Engineering Building the 1st E207

The chemical, physical, and electronic connections that materials make to one another and to the outside world are critical. Just as the properties and applications of conventional semiconductor devices depend on these contacts, so do nanomaterials, many nanoscale measurements, and devices of the future. We discuss the important role that chemistry can play in making and optimizing precise contacts that preserve key transport and other properties. Initial nanoscale connections and measurements guide the path to future opportunities and challenges ahead. Band alignment and minimally disruptive connections are both targets and can be characterized in both experiment and theory.

Paul S. Weiss holds a UC Presidential Chair and is a distinguished professor of chemistry & biochemistry and of materials science & engineering at UCLA. He received his S.B. and S.M. degrees in chemistry from MIT in 1980 and his Ph.D. in chemistry from the University of California at Berkeley in 1986. He was a postdoctoral member of technical staff at Bell Laboratories from 1986-88 and a visiting scientist at IBM Almaden Research Center from 1988-89. He served as the director of the California NanoSystems Institute and held the Fred Kavli Chair in NanoSystems Sciences at UCLA from 2009-2014. Before coming to UCLA, he was a distinguished professor of chemistry and physics at the Pennsylvania State University, where he began his academic career in 1989. His interdisciplinary research group includes chemists, physicists, biologists, materials scientists, mathematicians, electrical and mechanical engineers, and computer scientists. Their work focuses on the ultimate limits of miniaturization, exploring the atomic-scale chemical, physical, optical, mechanical, and electronic properties of surfaces and supramolecular assemblies. He and his students have developed new techniques to expand the applicability and chemical specificity of scanning probe microscopies. They have applied these and other tools to the study of catalysis, self- and directed assembly, and molecular and nanoscale devices. They work to advance nanofabrication down to ever smaller scales and greater chemical specificity in order to operate and to test functional molecular assemblies, and to connect these to the biological and chemical worlds. Two current major themes in his laboratory are cooperativity in functional molecules and single-molecule biological structural and functional measurements. He has written over 300 publications, holds over 20 patents, and has given over 600 invited, plenary, keynote, and named lectures.

You are cordially invited to attend!