



Stella Kennou

Material interfaces for applications in microelectronic devices

Solid surfaces and interfaces are important in a number of modern technological applications from microelectronics to nanomaterials and heterogeneous catalysis. The quantitative and qualitative chemical composition of the first atomic layers, the crystal structure of solid surfaces, as well as the study of different interfacial electronic structures which are strongly related with material behavior can be determined by using a number of surface sensitive experimental techniques. Interfaces of semiconducting and insulating oxides are widely used in microelectronic applications, especially as gate oxide layers and in photovoltaic devices, to prevent electron-hole recombination. Interfaces are affecting the leakage currents and the gate capacitance in MOSFET arrays, as well as the electron and hole diffusion in solar cells. Some case studies of interfaces between ultrathin layers of high- k oxides with Ge and interfaces of oxides in hybrid organic solar cells will be discussed.

Speaker

Stella Kennou, Professor

Dr. S. Kennou is a physicist with a Ph.D. from the Physics Department, University of Ioannina, where she was a faculty member (Assist. Professor) up to 1999. In 1999 she moved to the Chemical Engineering Department, University of Patras and since 2008 she is a Professor. She has been a postdoc researcher in CNRS, Grenoble, and in the Fritz-Haber Institute of the Max-Planck Society in Berlin with the group of Prof. G. Ertl (Nobel Prize in Chemistry, 2007). Her research is focused on the study of solid surfaces and interfaces using a combination of surface sensitive experimental techniques,



and she has a research collaboration with several research groups mainly in Greek and European Research Centers and Universities. She has published 160 papers in international journals and has an h-factor of 33. She has participated in and/or coordinated 40 European and National research programs. She has acted as secretary and president of the scientific society Micro&Nano and as coordinator of the intra-university network "Nanomaterials and Devices, NANO-DEMA" at the University of Patras.

