



SACLAY



DIRECTION DES SCIENCES DE LA MATIERE,
DEPARTEMENT DE RECHERCHE SUR L'ETAT CONDENSE,
LES ATOMES ET LES MOLECULES,
SERVICE DE PHYSIQUE ET DE CHIMIE DES SURFACES ET DES INTERFACES

SEMINAIRE *

Vendredi 16 novembre 2007 à 11h00

Bâtiment 466, salle 111 - CEA Saclay, 91191, Gif sur Yvette

Principles and applications of X-ray Photoemission electron Microscopy

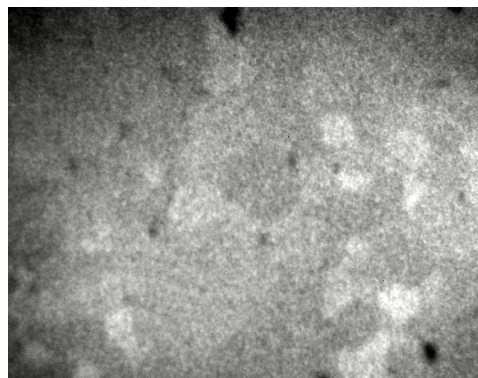
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Résumé:

The development of high energy and spatial resolution x-ray photoemission electron microscopes (XPEEM) provides a new and interesting tool for nanosciences. All the analytical power of photoemission electron spectroscopy is in this way associated with spatial resolution. In this talk this microscope is shown into context and into use.

A general overview of analytical microscopes is given with special attention to chemical sensibility. Most applied techniques are described with some relevant comparison information like resolution, acquisition time, chemical sensibility and sample throughput. The XPEEM is inserted in such framework and its particularities are highlighted. At this point the instrumental concept is put into focus and different approaches for energy filtered imaging are discussed with special emphasis on the NanoESCA. Bearing in mind its capabilities, some of the results obtained with the XPEEM illustrate its contribution to some scientific problems. Initially a polymer grafted on metallic multilayer deposited over silicon is discussed as a demonstration of elemental and chemical sensibility in a system with high contrast. Going to the other extreme, a homogenous strontium titanate polycrystal is analysed to discover a particular form of imaging contrast. Following some laborious sample preparation, some breakthrough experiments are proposed to profit all the excellence of this technique. Finally, other contrast methods are explored. The broad application range of energy filtered XPEEM put this instrument in a comfortable position among others in the field. Along side with its use as a routine microscope in some cases, decisive answers can be provided by this technique when its full capacity is exploited.



*** SERA PRECEDE D'UNE PAUSE-CAFE A PARTIR DE 10H30**

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