

SEMINAIRE *

Mardi 19 juin 2007 à 11h00

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

High Resolution Microscopy of Surface Nucleation, Growth, and Phase Transitions

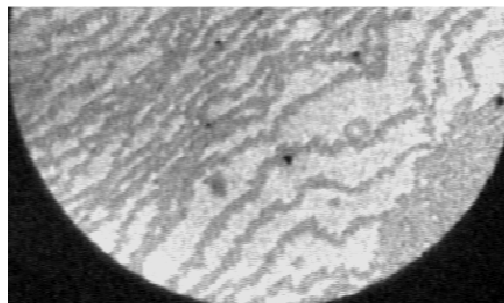
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Invité par P. SOUKASSIAN

Résumé:

Using a unique ultrahigh vacuum system, we have used both scanning tunneling microscopy (STM) and low energy electron microscopy (LEEM) to study the Stranski-Krastanov growth of Pb on W(110). LEEM has also been used to study the surface structural phase transitions of Pb on the Ge(111) surface, for which we have discovered a novel phase separation during the reversible β to (1X1) phase transition. For Pb coverage just under 1.33ML, β and (1X1) phases coexist for a range of temperatures, and the transformation occurs from 232°C to 181°C. When the coverage is again reduced by ~ 0.01 ML, a dramatic change in the transformation happens, with small domains of the new phase appearing and disappearing, due to fluctuations between the two phases. We attribute the fluctuating domains to thermal fluctuations in the density of Pb atoms within a domain. Finally, we have recently obtained preliminary LEEM data on the growth of Ag on Ge(111). Video rate LEEM data of phase transitions at the Ag desorption temperature show small domains of Ag abruptly changing from the $(\sqrt{3}\times\sqrt{3})R30^\circ$ to the (4x4) phase and then from the (4x4) to a disordered 2D gas phase.



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