SEMINAIRE ISMO

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Adsorption and thermal stability of germanium layers on Au(111) and Al(111) surfaces

In this work we present a characterization of Ge films grown on Au(111) and Al(111) by evaporation under UHV conditions. Surface crystallography and composition were analyzed by means of several experimental techniques including Scanning Tunneling Microscopy (STM), Time-of-Flight Direct Recoil Spectrometry (TOF-DRS), Low Energy Electron Diffraction (LEED), Electron Energy Loss Spectroscopy (EELS), Ultraviolet Photoelectron Spectroscopy (UPS), and by comparison with Density Functional Theory (DFT) calculations.

The LEED patterns indicate very well-ordered phases of the Ge films on both substrates. For Au(111) the STM also shows a big 5x8 unit cell but the formation of a honeycomb structure could not be unambiguously determined as proposed by different groups. Moreover, the high sensitivity of the TOF-DRS technique allowed us to show the presence of Au atoms in the Ge film and the diffusion of Ge atoms into the sample.

On the other hand, the preliminary results obtained for the growth of about a monolayer of Ge atoms on Al(111) show a 3x3 structure without diffusion of Ge atoms into the Al sample.
The comparison of the results obtained in our laboratory with data reported in recent literature is also presented, analyzing similarities and differences for both systems.

Attention
Jour inhabituel

Jeudi 24 mai 2018 à 11 h
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