GROWTH OF EMBEDDED 5 NM-DIAMETER CO NANOWIRES

This seminar present the growth of embedded Co nanowires with diameters in the 3-6 nm range and length up to 400 nm.

Tuesday 23th June 2009 at 10:30 am

Groupe d'Etudes de la Matière Condensée (GEMaC)
Université de Versailles St Quentin en Yvelines – CNRS
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In this contribution, we report on the growth of embedded Co nanowires with diameters in the 3-6 nm range and length up to 400 nm. Such nanowires were observed to form spontaneously upon pulsed laser deposition of CoO and CeO2 on SrTiO3(001) in reducing conditions. The obtained samples consist in Co nanowires oriented along the growth direction embedded in an epitaxial CeO2/SrTiO3(001) film exhibiting good crystalline quality. The structure of the Co nanowires was characterized by high resolution transmission electron microscopy (HRTEM) and extended x-ray absorption fine

structure. Magnetic measurements revealed pronounced magnetic anisotropy and blocking temperatures in excess of 300 K. These results will be discussed in the framework of the widely debated "diluted magnetic oxides" issue.

ADDITIONAL INFORMATION

Seminary presented by Franck Vidal from the Institute of NanoSciences of Paris.