



GEMaC

Groupe d'Étude
de la Matière Condensée

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'Études de la Matière Condensée
(GEMaC)

Université de Versailles St Quentin en
Yvelines – CNRS

45, Av. des Etats-Unis - 78035 Versailles
Cedex

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.