

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Vortex lattice matching effects in superconducting Mo<sub>3</sub>Si films with magnetic pinning centers.** DAVID PEREZ DE LARA, Dept. Fisica de Materiales, Universidad Complutense, 28040 Madrid (Spain), ALEJANDRO ALIJA, ALEJANDRO JUNQUERA, Dept. Fisica, Universidad Oviedo, 33007 Oviedo (Spain), JOSE M. COLINO, Dept. de Fisica, Universidad de Castilla la Mancha, 13071 Ciudad Real (Spain), JOSE I. MARTIN, Dept. Fisica, Universidad Oviedo, 33007 Oviedo (Spain), ELENA NAVARRO, Dept. Fisica de Materiales, Universidad Complutense, 28040 Madrid (Spain), MARIA VELEZ, Dept. Fisica, Universidad Oviedo, 33007 Oviedo (Spain), JOSE V. ANGUIA, Instituto Microelectronica, CSIC, Tres Cantos, 28760, JOSE L. VICENT, Dept. Fisica de Materiales, Universidad Complutense, 28040 Madrid (Spain) — Electron Beam Lithography and sputtering techniques have been used to fabricate arrays of Ni nanodots on Si (100) substrate. Nb films and amorphous Mo<sub>3</sub>Si films were grown on top of the magnetic array by magnetron sputtering. The same arrays were used in both superconducting systems; therefore the same periodic pinning potential is induced in both systems. Magnetotransport and (I, V) curves were measured close to the films critical temperatures. Matching effects are observed between the periodic array of pinning potentials and the driving vortex lattice. The different vortex dynamics will be discussed in both systems. We want to thank Spanish Ministerio Educacion y Ciencia grants NAN2004-09087, FIS2005-07392.

David Perez de Lara  
Departamento Fisica de Materiales, Universidad Complutense

Date submitted: 20 Dec 2007

Electronic form version 1.4