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**Experimental approach to search magnetic pinning in YBCO films grown by chemical deposition method** CARLOS MONTON, ANNA PALAU, JONE ZABALETA, NARCIS MESTRES, TERESA PUIG, XAVIER OBRADORS, Institut de Ciencia de Materiales de Barcelona, CSIC, 08193 Bellaterra, Spain — In the last 10 years we have developed experience in generating $YBa_2Cu_3O_7$ (YBCO) films and coated conductors by chemical solution deposition (CSD) capable to carry current densities in the range of 3 to 4 MA/cm$^2$ (at 77K and H=0). To improve these performances specific defects were grown by chemical nanostructurated routes. Interfacial pinning was obtained by the growth of nanostructurated templates generated by strain induced or assisted self-assembled processes [1]. On the other hand isotropic defect pinning contribution was increased by adding nanocomposites with second phase within the YBCO matrix. These samples were grown by modified solution precursors [2] reaching the maximum value of the critical current density, Jc (1T, 77K) = 2.2MA/cm$^2$, reported so far [2]. However recent theoretical works suggest that vortex pinning can be improved even more by using hybrids superconductor/ferromagnetic (Sc/FM) materials. In this work we explore the interaction of FM random distributed CSD $La_{0.7}Sr_{0.3}MnO_3$ nanoislands with the YBCO film and their effect on vortex pinning.

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