Abstract of Presentation

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Presentation Title:

Chemical solution approaches to self-assembled and nanocomposite oxide nanostructured superconductors*

Abstract :

Chemical solution deposition (CSD) has emerged in the last years as a very competitive technique to obtain epitaxial films, multilayers, nanocomposite films and interfacial templates with controlled nanostructures. In particular, the all CSD approach has been shown to be one of the most promising ways for low-cost production of second generation superconducting wires with high performances.

The development of high performance nanostructured superconductors with enhanced vortex pinning properties requires the preparation of either nanocomposite epitaxial films or epitaxial films grown on interfacial nanotemplates.

In this presentation I will stress different approaches to the preparation of oxide interfacial nanotemplates grown by CSD and of nanocomposite films.

The capabilities of CSD routes to obtain novel nanostructures in epitaxial films and coated conductors with enhanced critical currents will be discussed.

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