


Name of the Partnering Organization:	Institut de Ciència de Materials de Barcelona (CSIC)	
Location (town, country):	Bellaterra, Catalunya, Spain	
Web site address:	http://www.icmab.es/icmab	
Brief description of the organization		
<p>The ICMAB is a research institute of the Consejo Superior de Investigaciones Científicas (CSIC), the largest research organization of Spain focusing on basic and applied research. At present the ICMAB includes about 200 people with 53 scientists as permanent staff. The initial and ongoing mission of the ICMAB is “to generate new knowledge in Materials Science and transfer it to the society, particularly to industry within the European Research Area“. To foster its mission the ICMAB is integrated in the Barcelona Nanocluster at Bellaterra (BNC-b), a virtual network of research centers integrated in the Research Park of the Universitat Autònoma de Barcelona (PRUAB). The Strategic Plan of the ICMAB for 2010-13 defines four research lines, three of them focusing on the materials finality and the fourth one having a methodological character. These are: the materials for information science and electronics , materials for energy and environment, biomaterials for drug delivery, therapy, diagnostics and sensing and, finally, methodologies for materials science and nanotechnology.</p>		
Description of the research group		
<p>Laboratory of Magnetic Materials and Functional Oxides (MuFoX). MuFoX has a long standing experience on functional oxides, with major emphasis on the study of the magnetic, electric and optical properties and their intimate relation with structure and microstructure. Experimental equipment accessible to MuFoX include: RHEED-assisted Pulsed Laser Deposition and sputtering clusters for thin film growth, X-ray facilities for thin film characterization and magnetometers for advanced magnetic and magneto-optic characterization, and various Electron Microscopy tools. MuFoX is worldwide recognized by its contributions to Oxide Electronics and has largely contributed to the new knowledge on magnetic and multiferroic oxides. Hallmarks of MuFoX activity include: discovery of electronic phase separation in manganites, engineered oxide heterostructures acting as spin filters, multiferroic tunnel barriers, magnetophotonic crystals, electric control of magnetic materials and the dynamics of multiferroic domains. At present, the group is formed by 3 Staff scientist and 9 PhD students.</p>		
Selected list of relevant publications		
<p>Magnetization Reversal by Electric-Field Decoupling of Magnetic and Ferroelectric Domains Walls in Multiferroic-Based Heterostructures, V. Skumryev, V. Laukhin, I. Fina, X. Martí, F. Sánchez, M. Gospodinov, J. Fontcuberta, <i>Physical Review Letters</i>, 106, 057206 (2011)</p> <p>Tunnel Junction with multiferroic barriers, M. Gajek, M. Bibes, S. Fusil, K. Bouzehouane, J. Fontcuberta, A. Barthélémy and A. Fert, <i>Nature Materials</i>, 6, 296 (2007)</p> <p>Electric-field control of exchange bias in multiferroic epitaxial heterostructures, V. Laukhin, V. Skumryev, X. Martí, D. Hrabovsky, F. Sánchez, <i>Physical Review Lett.</i> 97, 227201 (2006)</p> <p>NiFe₂O₄: A versatile spinel magterial brings new opportunities for Spintronics, U. Lüders, A. Barthelemy, M. Bibes, K. Bouzehouane, S. Fusil, E. Jacquet, J.P. Contour, J.-F- Bobo, J. Fontcuberta and A. Fert. <i>Adv. Mater.</i> 18, 1733-1736 (2006)</p>		
Key researcher's CV		
<p>Professor Josep Fontcuberta– Head of the Group of Magnetic materials and functional oxides. Over 350 peer-reviewed scientific papers, around 100 invited talks at Workshops and Conferences , director of 15 PhD Thesis works, co-author of several patents, Editor of Solid State Communications (Elsevier). Actively involved in several scientific projects, European and national.</p>		