



UNIVERSITAT DE BARCELONA

FACULTAT DE QUÍMICA

DEPARTAMENT DE CIÈNCIA DELS MATERIALS I ENGINYERIA METAL·LURGICA

PROGRAMA: TECNOLOGÍA DE MATERIALES
BIENIO: 2001- 2003

CO-DIRECTORES: DR. FERRAN ESPIELL ÀLVAREZ
DRA. MERCÈ SEGARRA I RUBÍ
DR. ALBERTO CALLEJA LÁZARO

“SÍNTESIS DE CERÁMICOS TECNOLÓGICOS MEDIANTE MÉTODOS DE COMBUSTIÓN DE GELES DE ACRILAMIDA”

Memória presentada por :
D. Javier García Capdevila
Para optar al grado de Doctor por la
Universitat de Barcelona.

Barcelona, Febrero de 2007

APÉNDICE.

Artículos en revistas incluidas en el Science Citation Index derivados de este trabajo.

2006

1. D. Rubí, A. Calleja, J. Arbiol, X.G. Capdevila, M. Segarra, Ll. Aragonés, J. Fontcuberta. **Structural and magnetic properties of ZnO:TM (TM:Co, Mn).** *Journal of Magnetism and Magnetic Materials.* Aceptado, en prensa.
2. X.G. Capdevila, J.Folch, A.Calleja, J.Llorens, M. Segarra, F. Espiell, J.R. Morante. **Multifolding lamination for YSZ ceramic processing.** *Ceramics International.* Enviado, pendiente de corrección.
3. J. Folch, X.G. Capdevila, M. Segarra, J.R. Morante. **Solid electrolyte multisensor device for detection of combustion gases.** *Journal of the Electrochemical Society.* Enviado, pendiente de corrección.
4. D. Rubí, J. Fontcuberta, M. Lacaba, A.M. González, J. Batzán, A. Calleja, Ll. Aragonés, X.G. Capdevila, M. Segarra. **On-off magnetoresistive sensor based on screen-printed $\text{La}_{2/3}\text{Sr}_{1/3}\text{MnO}_3$ manganite.** *Sensors and Actuators: A- Physical.* **132**, (2006), 52 – 55.
5. M. Giot, C. Frontera, J.L. García-Muñoz, M. Hervieu, A. Calleja, X.G. Capdevila, M. Raspaud . **Investigating ferromagnetism and charge order in $\text{Bi}_{1-x}\text{Sr}_x\text{MnO}_3$ ($x<0.3$) ceramic oxides.** *Boletín de la Sociedad Española de Cerámica y Vidrio.* **45(3)**, (2006), 233 – 237.
6. J.L. García-Muñoz, C. Frontera, P. Beran, N. Bellido, X.G. Capdevila, A. Calleja, J.S. Lord, C. Ritter. **Comparative study of the magnetic and electronic properties of $\text{Bi}_{0.75}\text{A}_{0.25}\text{MnO}_3$ ($x<2/8$) with A = Ca and Sr.** *Physica B.* **374 – 375**, (2006), 91 – 94.

2005

7. J.L. García-Muñoz, C. Frontera, M. Raspaud, M. Guiot, C. Ritter, X.G. Capdevila. **Magnetic properties of $\text{Bi}_{0.75}\text{Sr}_{0.25}\text{MnO}_3$ ($x\approx2/8$, $T_{co}=600$ K): Ferromagnetism and charge order.** *Physical Review B.* **72** (2005) 054432.
8. A.I. Fernández, A. Calleja, J.M. Chimenos, M.A. Fernández, X.G. Capdevila, M. Segarra, H. Xuriguera, F. Espiell. **Preparation of ultra-fine CuO: Comparison of polymer gel methods and conventional precipitation processes.** *Journal of Sol-Gel Science and Technology.* **36** (2005) 11-17.

9. C. Frontera, J.L. García-Muñoz, M.A.G. Aranda, M. Hervieu, C. Ritter, A. Calleja, X.G. Capdevila, M. Raspaud. **Magnetism in the low-doping regime ($x<0.5$) of $\text{Bi}_{1-x}\text{Sr}_x\text{MnO}_3$ perovskites.** *Journal of Applied Physics* . **97** (2005) 10C105.
10. J. Folch, X.G. Capdevila, M. Segarra, J.R. Morante. **Non-nernstian planar YSZ-based electrochemical sensors using semiconducting oxide electrodes.** *Proceedings of the 5th Spanish Conference on Electron Devices.*, Tarragona, 2 – 4 de Febrero 2005.

2004

11. An. Magrasó, A. Calleja, X.G. Capdevila, F. Espiell. **Synthesis of Gd-doped BaPrO_3 nanopowders.** *Solid State Ionics*. **166** (2004) 359-364.
12. C. Frontera, J.L. García-Muñoz, A. Calleja, X.G. Capdevila, F. Espiell. **Charge and Zener polaron order in $\text{Bi}_{0.75}\text{Sr}_{0.25}\text{MnO}_3$: a comparison with $\text{Bi}_{0.75}\text{Ca}_{0.25}\text{MnO}_3$.** *Physica B* . **350** (2004) 48-50.
13. C. Frontera, J.L. García-Muñoz, A.E. Carrillo, M. Hervieu, C. Martin, A. Llobet, A. Calleja, X.G. Capdevila, C. Ritter. **Magnetism of $\text{Bi}_{0.75}\text{Sr}_{0.25}\text{MnO}_3$ and its dependence on bismuth concentration.** *Journal of magnetism and magnetic materials* . **272-276** (2004) 1734-1735.
14. S. Piñol, M. Najib, D.M. Bastidas, A. Calleja, X.G. Capdevila, M. Segarra, F. Espiell, J.C. Ruiz-Morales, D. Marrero-López, P. Nuñez. **Microstructure-conductivity relationship in Gd- and Sm-doped ceria-based electrolytes prepared by the acrylamide sol-gel related method.** *Journal of Solid State Electrochemistry*.**8** (2004) 650-654.

2003

15. Calleja, M. Segarra, I.G. Serradilla, X.G. Capdevila, A.I. Fernández, F. Espiell. **Exploring the polyvinyl alcohol method for preparing cuprates and manganites.** *Journal of the European Ceramic Society*.**23** (2003) 1369-1373.
16. C. Frontera, J-L. García-Muñoz, M.A. Aranda, M. Hervieu, C. Ritter, L. Mañosa, X.G. Capdevila, A. Calleja. **Charge and Zener polaron order in $\text{Bi}_{0.75}\text{Sr}_{0.25}\text{MnO}_3$.** *Physical Review B* . **68** (2003) 134408.
17. C. Frontera, J-L. García-Muñoz, C. Ritter, L. Mañosa, X.G. Capdevila, A. Calleja. **Enhanced stability of charge-order in underdoped $\text{Bi}_{0.75}\text{Sr}_{0.25}\text{MnO}_3$.** *Solid State Communications*. **125** (2003) 277-280.

2002

- ^{18.} I.G. Serradilla, A. Calleja, X.G. Capdevila, M. Segarra, E. Mendoza, J. Teva, X. Granados, X. Obradors, F. Espiell. **Synthesizing the Y-123/Y-211 composite by the PVA method.** *Superconductor Science and Technology*. **15** (2002) 566-571.
- ^{19.} C. Frontera, J-L. García-Muñoz, M.A. Aranda, C. Ritter, A. Llobet, L. Ranno, M. Respaud, J. Vanacken, J.M. Broto, A.E. Carrillo, A. Calleja, X.G. Capdevila. **Anomalous high charge-orbital ordering temperature in $\text{Bi}_{0.5}\text{Sr}_{0.5}\text{MnO}_3$** . *Applied Physics A. Materials Science and Processing*. **A74** (2002) S1787-S1789.