

MON1F3: Magnetism - Magnetic Nanoparticles

Chaired by T. Tyliczszak, Ernest Orlando Lawrence Berkeley National Laboratory, USA

Time: Monday 15:10–16:30

Location: Aula 3

Invited talk

MON1F3.1 15:10 Aula 3

Magnetic Hyperthermia for Biomedical Applications — ●GERARDO GOYA¹, IVAN MARCOS-CAMPOS², LAURA ASÍN¹, TEOBALDO TORRES¹, FANNY DE LA IGLESIA¹, VALERIA GRAZÚ¹, MARIA MOROS¹, NICOLÁS CASSINELLI¹, JAVIER GODINO², ARIEL SILBER³, ALEJANDRO TRES², and M. RICARDO IBARRA¹ — ¹Nanoscience Institute of Aragon (INA), University of Zaragoza, Pedro Cerbuna 12, 50009- Zaragoza, Spain. — ²Hospital Clinico Universitario 'Lozano Blesa', San Juan Bosco 15, Zaragoza, Spain. — ³Instituto de Ciências Biomédicas, Universidade de São Paulo. São Paulo, Brazil.

Magnetic hyperthermia (MHT) experiments were done to evaluate possible therapies on unicellular organisms. We studied the final location of the particles; the toxicity effects, and the effectiveness of MHT to induce cell death.

MON1F3.2 15:50 Aula 3

Spin-glass like freezing and enhanced magnetization in ultra-small CoFe₂O₄ nanoparticles — ●DAVIDE PEDDIS and DINO FIORANI — Istituto di Struttura della Materia - CNR. C.P. 10, 00016 Monterotondo Stazione (Roma), Italy

The results presented in this communication provide evidence of a magnetic transition to a frozen spin-glass like

state at low temperature (below 30 K) accompanied by enhanced saturation magnetization and increase of magnetic anisotropy.

MON1F3.3 16:10 Aula 3

Magnetic microstructure of magnetite doped elastomers investigated by SANS and SAXS — ●MARIA BALASOIU^{1,2}, MIHAIL-LIVIU CRAUS^{1,3}, VASYL HARAMUS⁴, JOSEF PLESTIL⁵, ALEXANDER KUKLIN¹, RAUL ERHAN¹, EUGEN MIRCEA ANITAS¹, ANDREAS SCHREYER⁴, MIHAI LOZOVAN³, VASILE TRIPADUS², and IOAN BICA⁶ — ¹Joint Institute of Nuclear Research, Dubna, Russia — ²National Institute of Physics and Nuclear Engineering, Bucharest, Romania — ³National Institute of Research and Development for Technical Physics, Iasi, Romania — ⁴GKSS Forschungszentrum, Geesthacht, Germany — ⁵Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Prague — ⁶The West University of Timisoara, Department of Electricity and Magnetism, Timisoara, Romania

Stomaflex elastomer filled with nanoscale magnetite particles have been investigated by Small-Angle Neutron Scattering (SANS) and Small-Angle X-ray Scattering (SAXS). Average size of the particles and the strain was determined by XRD.