Name of the Partnering Organization:	Demokritos, National Centre for Scientific Research
Location (town, country):	Aghia Paraskevi, Athens, Greece
Web site address:	www.demokritos.gr

Brief description of the organization

The National Centre for Scientific Research (NCSR) 'Demokritos' is a multidisciplinary research centre with approximately 850 employees working in selected fields of science and technology. It comprises eight different Institutes in various fields of Physical Sciences and Technology, among them: Institute of Materials Science (IMS) (70 staff members and 30 graduate students) and Institute of Nuclear Technology & Radiation Protection (INT-RP) (73 staff members and 32 graduate students). 'Demokritos' operates under the supervision of the General Secretariat for Research and Technology, which is currently a division of the Ministry of Education. The Centre's aims are: to conduct basic and applied research, to develop new knowledge and know-how and contribute to the economic and social development of the country through dissemination of knowledge and transfer of know-how and technology to the public and private sectors, to collaborate with European industry and institutes for the development of advanced technologies, to offer customized high technology services to the public and private sectors through its certified laboratories.

Description of the research group

Major research direction of IMS concerning topics relevant to the EAgLE project is: basic and applied research on selected areas of materials science, especially in the area of nanostructure materials, The primary research interest of the Computational Materials Science group form IMS is to contribute to the understanding of complex materials systems at all length scales (from nanoclusters to bulk solids) through the application of numerical techniques including Monte Carlo simulations and electronic structure calculations. Current research activities have been focused on the modeling of structural, magnetic and magnetotransport properties of nanostructured magnetic materials. Role in the project: development of Monte-Carlo software applications for interpretation of magnetic measurements in magnetic/non-magnetic nanostructures and nanocomposites,

The participating research group from INT-RP has long experience in the use of both X-ray and neutron scattering techniques and their applications in materials characterization. The neutron scattering techniques are key techniques for the realization of the EAgLE project, to be used for structural and magnetic characterisation of magnetic nanostructures. Current research of the group are focused on materials for fusion applications, alloying processes, thin films, multilayers and coatings, surface modification and treatments for extreme environment applications such as aerospace. Available experimental techniques include neutron diffraction, neutron reflectivity, accompanied by complementary techniques of small angle X-ray scattering, X-ray reflectivity and X-ray diffraction both at normal and grazing incidence angle.

Selected list of relevant publications (*3 max, with titles*)

Iannotti, V., Amoruso, S., Ausanio, G., Wang, X., Lanotte, L., Barone, A. C., Margaris, G., Trohidou, K. N., Fiorani, D. (2011) Interplay between particle anisotropy and exchange interaction in Fe nanoparticle films, Phys. Rev. B 83, 214422

Binns, C., Domingo, N., Testa, A.M., Fiorani, D., Trohidou, K.N., Vasilakaki, et al. (2010) Interface exchange coupling in Co nanoparticles dispersed in a Mn matrix, J. Phys.: Conden. Matter 22, 436005

K Mergia, A Tomou, I Panagiotopoulos, F Ott, "Structural and magnetic properties of Ru/Ni multilayers", J. Phys. D, vol. 44 (2011) 75001

Key researcher's CV *(500-600 characters)*

Dr. Kalliopi after PhD worked in UK at the Rutherford Appletton Laboratory (1988-1989) and the University of Reading (1989-1990). Then she was Research Fellow at the IMS in NCSR Demokritos in Athens and then Professor in the Department of Physics, Chemistry and Materials' Technology at the Technical University of Pireaus. Since June 1995 she is at IMS at NCSR Demokritos, where she heads the Computational Materials Science Group and the research laboratory. She is author of 78 articles in scientific journals and several chapters in books. She has numerous international collaborations in particular through research projects funded by the EU.