EMS Newsletter March 2006

Dear EMS member,

The EMS board takes this opportunity to wish all its members a healthy and successful 2006. For the coming year EMS again plans to move ahead on different matters. The 2006 EMS extension will take place at the joint meeting of the Dutch and Belgian societies on 26-28 November in the congress centre De Werelt in Lunteren, The Netherlands. At the same meeting the 2006 EMS General Assembly will take place. In parallel, EMS is sponsoring three other European meetings: DFTEM2006 in Vienna, X-EL 2006 in Antwerp and Microscience in London. At all of these meetings, specialist speakers will present lectures supported by EMS, and EMS members are eligible for scholarships to attend these meetings. Moreover, with the generous support of JEOL Brussels, EMS is sponsoring four scholarships of 500 Euro each to enable young scientists to attend the 16th International Microscopy Congress in Sapporo, Japan. Closer to home, the members of SCANDEM have decided to join EMS en-bloc and we truly welcome our Nordic colleagues! The EMS bulk mailing system is now getting attention from meeting organizers as well as from labs and companies looking for researchers and technicians in the field of microscopy. At the same time the electronic voting system, having been approved for use at the 2005 General Assembly in Davos, is now up and running at the secretarial office in Antwerp. In addition, a contract has been signed with Eveni Conference Management for setting up an on-line registration and abstract submission/refereeing procedure, which will be available to all future EMS-related events.

More info on these matters and links to different sites and events can be found at www.eurmicsoc.org.

IN THE PICTURE:

CHIRALTEM is a European project, funded in the 6th Framework programme, as a multidisciplinary consortium from four countries. The team is setting out to demonstrate a new technique for studying the detailed magnetic structure of materials.

CHIRALTEM aims to prove a surprising conjecture - namely that magnetic circular dichroism can be detected in a TEM. If successful, the project could open the way to mapping the spin and orbital magnetization at nanometer scales. The

impact in nanotechnology, especially in the new field of 'spintronics' would be considerable.

In principle, a beam of spin polarized electrons could sense spin magnetization by coupling between the probe's and the specimens's spins. In 2003 Peter Schattschneider and Cécile Hébert at the Technical University of Vienna – now the CHIRALTEM project coordinators – discovered that circular dichroic effects should be observable in a TEM equipped with an energy spectrometer. The object of CHIRALTEM is to demonstrate this new effect experimentally – tentatively called Energy Loss Magnetic Chiral Dichroism (EMCD) – and find out how it could be used for investigating magnetic materials.

The project could lead to a new field of study with applications in nanotechnology and spintronics. It also opens the way to the study of biological magnetic materials such as those in certain bacteria or which give rise to the magnetic 'compass' sense in pigeons. European industry could benefit from developing equipment for the new technique.

A joint workshop with XMCD users and theoreticians to explore further collaboration will be held in April 2006, in Vienna (see www.physics.at/dftem2006).

P. Schattschneider