

## CONFERENCE REPORT

*Fifth International Conference on the Scientific and Clinical Applications of Magnetic Carriers*. Lyon, France, May 20–22 2004

The Fifth International Conference on the Scientific and Clinical Applications of Magnetic Carriers was held in Lyon, France. Approximately 270 participants from 36 countries attended the conference and 101 oral and 121 posters were presented. This conference is held every two years and attracts delegates from many different fields owing to its highly interdisciplinary nature.

Although the use of magnetic carriers is varied and a number of different focus areas where these carriers are used were considered, the main focus of the conference was on the clinical applications of the magnetic carriers. Sessions covered the preparation and modification of magnetic particles, the characterization of magnetic particles, the application in cell separation and analysis, applications in molecular biology, cancer treatment, hyperthermia, magnetic resonance contrast enhancement, drug delivery and magnetic separation.

Each session was opened with an invited talk. Jean-Louis Viovy from the CNRS/Institut Curie presented a fascinating lecture on magnetic tweezers. He discussed the investigation into the torsional movement of a DNA molecule tethered between a magnetic particle and a glass surface inside a microfluidic chamber. Andreas Jordan from the Department of Radiation Oncology of the University Clinic Charité in Berlin, Germany discussed the first clinical experience with magnetic field hyperthermia which is being conducted at the University Clinic Charité. On the final day of the conference, Gregory Lanza from the Washington University, USA presented a lecture entitled 'Molecular imaging and targeted drug delivery with a site specific nanoparticles platform technology: Emerging opportunities for non-invasive diagnosis and image-augmented therapy'.

James Watson from the University of Southampton, England, presented three tutorials over the three days on the fundamentals of high gradient magnetic separation. The tutorials focused on the interaction and retention of small magnetic particles in magnetic separation, magnetic separation using a deep-bed magnetic matrix and applications of magnetic separation and filtration.

Indicia, BioMérieux Laboratory, Merck and Chemicell were among the sponsors present at the meeting. They are involved in, for example, the fields of polymeric supports for clinical diagnostics, life sciences, biotechnology, electronics and environment applications and bioseparation and detection systems based on magnetic, fluorescent and color nano- and micro-particles. Besides their assistance in the local organization

of the meeting, they also made it possible for 21 travel grants to be handed out to delegates.

The social events rivalled the well-planned and coordinated conference sessions in their attendance. A cheese and wine function on the evening preceding the conference opening session provided an opportunity for the display of Lyon's famed cuisine. A walking tour through historic Lyon, which is a listed UNESCO heritage site, showcased the beauty of the city. Of particular interest were the 'traboules' (public passages running perpendicularly through inhabited buildings to provide shortcuts to the river) and the realistic murals covering entire building faces scattered throughout the city. A boat trip with dinner on the Rhone and Saone was the highlight of the social programme.

Further details regarding previous and forthcoming meetings covering the clinical and scientific applications of magnetic carriers can be found at <http://www.magneticmicrosphere.com>. This website also provides information on developments in the field of magnetic microspheres, magnetic nanospheres, ferrofluids and other magnetic particles and their applications in a number of different spheres.

The conference this year was organized by Urs Häfeli and Maciej Zborowski from the Cleveland Clinic Foundation, USA, Stéphane Legastelois from Indicia Biotechnology, France and Wolfgang Schütt from IMC – Fachhochschule Krems GmbH. The Sixth International Conference on the Scientific and Clinical Applications of Magnetic Carriers will be held in Krems, Austria and will be organized again by Urs Häfeli (who has since moved to the University of British Columbia, Canada), Maciej Zborowski and Wolfgang Schütt with assistance from Mirko and Ivo Šafařík (Academy of Sciences, České Budějovice, Czech Republic).

Judging from the smooth running of the proceedings, the high standard of papers and posters presented and the enthusiasm of all the participants, the next conference promises to be as successful as the last.

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