

## Guest editorial

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The 20th Conference of the European Society for Biomaterials was held in Nantes, France from the 27th of September to the 1st of October 2006. More than 850 participants from 40 countries, mostly European (85%), attended the ESB2006 conference. Demonstrating a great hope for the future of biomaterials, an exceptional attendance of young scientists was noted. Around 260 students registered as participants and more than 200 applied for the ESB student awards. Prizes for the best student oral and poster presentations, as well as travel fellowships, were awarded and distributed by the ESB Council at the closing ceremony on Sunday October 1st, 2006. At the associated exhibition, 25 companies presented their products and services. This large participation demonstrated the reputation of this Annual Meeting being one of the major leading events in the field.

The scientific program included 46 Sessions comprising 290 oral presentations and 400 posters. At the opening of the oral sessions, 9 keynote lectures were presented by renowned international experts at the invitation of the local scientific committee. Two plenary lectures were given by Prof. J. Hubbell, Winner of the 2006 George Winter Award, and Dr. P. Granja, Winner of the 2006 Jean Leray Award. In addition, two informative workshops took place on Saturday September 30th:

- A Satellite Symposium on European Project (EPSS) was organized to inform researchers interested in building European projects as the ESB2006 conference was close to the launch of the 7th Framework Program.

- A Fifth Young Scientists Forum (5YSF) was held to empower fruitful exchange between students and experienced researchers from biomedical companies.

Each blind copy abstract was reviewed by two independent referees ensuring the high scientific quality of the communications. Among these abstracts, around 30 papers were selected for publication in this special issue of the Journal Materials Science: Materials in Medicine, which contains reports of high quality research studies performed by different groups worldwide. As chairmen of the ESB 2006 Conference, it is our pleasure to introduce this collection of papers.

The papers of this special issue illustrate the interdisciplinary approach in the research, development and clinical use of biomaterials. They reflect the wide variety of topics presented at the conference. These topics are related to the preparation and characterization of scaffolds made of degradable polymers, hydrogels, calcium phosphates or composites. These scaffolds designed for tissue regeneration resemble native extracellular matrices in terms of both chemical composition and physical structure. As implants interact with biological fluids, cells and tissues, surface modification and analysis are key issues in the field. Several examples of hybrid materials combining cells and growth factors are also reported for tissue engineering and regenerative medicine applications, in addition to drug delivery systems, gene therapy and carriers for growth factors. During the meeting, extensive discussion between scientists and clinicians related to the medical and dental applications included: macroporosity, microporosity, compressive strength, and bioactivity as important parameters conditioning of the applications. Other specific topics were polymers and composites for development of Minimal Invasive Surgery (MIS) using injectable biomaterials.

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Over the years, biomaterials have evolved from relatively simple implants to complex medical devices. As one of the major events in the field, the ESB2006 conference allowed scientists to discuss their latest results as well as to show their visions of the future. Surface properties of biomaterials have received considerable attention, as implants interact with body fluids, biomolecules, cells and tissues. Various

surface treatments, ranging from simple blasting on metal or polymers to biomimetic surface treatments were presented. As the opposite of the old empirical approach, today's biomaterials are designed using systematic and accurate methodologies. We hope that many researchers will enjoy reading the papers contained in this special issue of the journal.