

EDITORIAL

Bioencapsulation involves entrapment and encapsulation of bioactive materials providing immobilisation, protection, controlled release or adequate physical form. There is a rapidly growing market for such technologies including many different fields such as biotechnology, food and beverage production, biomedicine, pharmacology, cosmetology, agriculture, waste treatment, analytical applications and biologically derived products. The interest for immobilised/encapsulated material applications has then become a real scientific and technological challenges in the last few years.

COST 840 Action, titled *Bioencapsulation Innovations and Technologies*, tends to develop the bioencapsulation technology in view of their transfer and development in agricultural, food, cosmetic, pharmaceutical, medical and industrial applications.

The action is divided in five working groups (WG) with different focuses:

- WG I: New materials characterization (molecular properties, rheology analysis)
- WG II: Development of bioencapsulation processes
- WG III: Evaluation of the bioengineering parameters
- WG IV: Fragmentation of the immobilized systems
- WG V: Assessment of the capsules in function of the applications

Since 1998, when action started, a lot of workshops and expert's meetings were organized, several data bases were created, round robin experiments were realized, and work on technical encyclopedia on bioencapsulation is initiated. Also COST 840 action served as a catalyst for Virtual Institute on Bio&Microencapsulation Sciences and Technology, which promotes and supports the collaboration between RTD performers, provides integrated problem solutions and technology transfer and offers a contact platform for the industry to find optimal technologies and partners (<http://www.bioencapsulation.net/>).

On the other side Biochemical Engineering Society Belgrade (BESB), as a group within Association of Chemical Engineers founded (1957), was initiated in 2003 to improve collaboration between researchers involved in bioencapsulation.

Biochemical Engineering Society has the following objectives:

- promoting the development in immobilization/bioencapsulation of cell and tissue engineering field;
- encouraging multidisciplinary and international collaborations developing and transferring immobilization/ bioencapsulation processes to industries contributing to international research programs;
- supporting training of young researchers, organizing international workshops and incorporation into European programs;
- organizing a large spectrum of contacts, collaborations and support to its members.

The present special issue (supplement) of Chemical Industry contains 41 short papers and posters that are presented at the COST Expert's Conference:

"Applications of Immobilization/Bioencapsulation in Medicine, Pharmacy, Food Technology and Biotechnology"

which was held from 25 to 27 of June in Belgrade, Serbia.

The conference is organized by COST 840, Biochemical Engineering Society, Faculty of Technology (University of Belgrade), Faculty of Agriculture (University of Belgrade) and Association of Chemical Engineers and supported by Ministry of Science and Environmental Protection of Republic of Serbia. The content of this special issue covers a wide range of subjects, such as actual trends in bioencapsulation and immobilisation, insight in the nature of diverse materials and methods for encapsulation/immobilisation, applications of immobilized/encapsulated cells and bioactive molecules in food technology, pharmacy, medicine (tissue engineering), environmental protection, as well as encapsulation technologies. A broad variety of cell types and applications are discussed: microbial cell immobilization for use in fermentation processes, mammalian cell seeding and cultivation on different kinds of supports for tissue engineering, immobilization of bioluminescent cells and tissues for biosensor development. In addition, methods for immobilization of bioactive molecules for drug delivery and bioconversions in bioreactor systems are also presented. A special attention is given to the review of overall trends in immobilization/microencapsulation technologies and comparison of different techniques regarding materials, potential applications and scale-up. In this manner an effort has been made to adopt a multidisciplinary approach creating an inventive field for exchange of knowledge, experiences and ideas.

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