



ESBES SECTIONS

MODELLING, MONITORING, MEASUREMENT & CONTROL (M3C)

Chair: Prof. Bernd Hitzmann, Germany

Effective bioprocess development, scale-up and manufacture requires reliable and preferable simple process sensors. While innovative modelling techniques and sensors have been developed, they still frequently fall short of industrial requirements with respect to reliability and simplicity. This section aims to reduce the gap between research innovations and industrial implementation by promoting a closer collaboration of current industrialists and researchers, and taking part in the education of future generations.

REGENERATIVE MEDICINE MANUFACTURING (RMM)

Chair: Prof. Joaquim M.S. Cabral, Portugal

Healthcare demands, including population aging, have resulted in an increasing incidence of currently non-curable and age-related diseases. Applying stem cells and tissue engineering to the regrowth and repair of damaged cells, tissues and organs will both improve the out-comes for patients with the aim of reducing overall healthcare costs. By means of cross-disciplinary collaboration of the concerned sectors, this sections aims to help develop affordable manufactured cellular products based on the latest science advances in cell biology, immunology, materials and engineering.

ESBES EVENTS

In 2012 ESBES became an independent society after initially being a section of the European Federation of Biotechnology. Over the past few years ESBES has established the European Congress of Applied Biotechnology (ECAB) as the leading event for industrial biotechnologists. The first ECAB took place in Berlin in 2011 followed by the second one in The Hague in 2013. Both congresses had about 1,500 participants and covered all areas of industrial biotechnology and related fields. The next ECAP will take place in Barcelona, Spain in October 2017.

ECAB is a biannual event always taking place during the odd years. In the even years ESBES organises the Symposium on Biochemical Engineering Sciences, the last of which took place in Dublin, Ireland in September 2016. Almost 600 biotechnologists attended this symposium. The next ESBES Symposium which will be the 12th event, will take place in Lisbon, Portugal in 2018.

ESBES Calendar of Events

- 4th European Congress of Applied Biotechnology
Barcelona, Spain, 1 – 5 October 2017
- 12th European Symposium on Biochemical Engineering Sciences
Lisbon, Portugal, 9 – 12 September 2018
- 5th European Congress of Applied Biotechnology
Florence, Italy, 16 - 19 September 2019
- 13th European Symposium on Biochemical Engineering Sciences
Portorož, Slovenia, 17 – 20 September 2020

ESBES MEMBERSHIP

Membership is open to academic institutions, registered companies and European non-profit making professional scientific and technical societies. Individuals may apply for membership in one or more sections. Please register online.

For more information on membership visit www.esbesweb.org

GENERAL SECRETARIAT

The offices of the General Secretariat are based at three major scientific societies:

DECHEMA e.V.

(Society for Chemical Engineering and Biotechnology)

Theodor-Heuss-Allee 25
60486 Frankfurt am Main, Germany
Email: office@esbesweb.org

IChemE (The Institution of Chemical Engineers)

Davis Building
165-189 Railway Terrace
Rugby, Warwickshire CV21 3HQ, UK
Email: CFlavell-White@icheme.org

SFGP (French Chemical Engineering Society)

28 Rue Saint Dominique
75007 Paris, France
Email: president.sfgp@laposte.net



What is ESBES?



www.esbesweb.org



SECTIONS

The ESBES accomplishes its most important activities through 9 Sections devoted to various aspects of biochemical engineering.

WHAT IS ESBES?

The [European Society of Biochemical Engineering Sciences](#) stimulates scientific advances in the field of biochemical engineering and provides a platform for communication, education and interdisciplinary exchange in this important scientific discipline.

ESBES serves as an interface between industry and academia and fosters cooperation of bioengineers from all over Europe and overseas.

ESBES gathers members from Academia and Industry in active collaboration in different fields of applied BioSciences, Biochemical Engineering, Biotechnology, and Bioengineering enforcing advances in the several related engineering topics. It covers several highly dynamic fields of innovation in the industry, among them new reactor designs, metabolic engineering and synthetic biology, downstream processing, process and pathway modeling and enzyme development.

ESBES Board:

President:	Prof. Guilherme N. M. Ferreira DSM, Delft, The Netherlands
Executive Vice President:	Prof. Jarka Glassey University of Newcastle, UK
Scientific Vice President:	Prof. Alois Jungbauer University of Natural Resources and Life Sciences, Vienna, Austria

BIOCATALYSIS

Chair: Prof. Bruno Bühler, Germany

Riding on the green chemistry trend, biocatalysis is a promising approach for organic synthesis and industrial production in various areas, as it is performed under mild conditions, in aqueous reaction media, via biocatalysts which are of a renewable nature. This section aims to centralize developments in the various sectors concerning biocatalysis – from microbiology to chemical engineering, in order to facilitate innovation regarding topics such as enzyme engineering, metabolic engineering, multi-step catalytic processes (cascades), bioelectro-chemistry, in situ product removal, immobilization, continuous bioprocessing, and last but not least integrated biocatalyst and bioprocess development.

BIOENERGY AND BIOECONOMY (BEE)

Chair: Prof. Luuk A.M. van der Wielen, The Netherlands

Bioeconomy affects numerous sectors, from food and feed to chemical, biotechnological and energy industries. In both traditional and emerging bio-based sectors, there is an increasing concern about biomass resources, conversion technologies, environmental and socio-economic impact. This section aims to promote innovation in these topics, and focuses in particular on bioenergy – heat, power, biofuel and biogas.

BIOREACTOR PERFORMANCE (BRP)

Chair: Prof. Chris J. Hewitt, UK

With the emergence of bio-products from microorganisms, ensuring the reproducibility or improving the performance of fermentation processes at an industrial scale has become a matter of

high importance. While microbial metabolism is progressively understood, there is still a lack of precise, quantitative process data, subsequent models, and feedback control technologies. This section aims to serve as a focal point for the development of such bioreactor performance tools.

DOWNSTREAM PROCESSING (DSP)

Chair: Prof. Raquel Aires-Barros, Portugal

Bio-based products embrace foods, fuels, medicines and other products made from renewable biological resources. With the increasing demand for bio-based products, and the currently massive expense for their isolation and purification, there is an urgent need to improve the existing downstream processes, and design new sustainable ones. Our role is to help develop these innovative processes, and to promote downstream processing in Europe and beyond.

FOOD BIOPROCESS

Chair: Prof. Jack Legrand, France

The food industry is a worldwide crucial sector facing changes regarding available biomasses, legal framework and consumer preferences. Facing these changes involves improving process efficiency and product quality, and developing new processes and products, such as products transformed by microorganisms and functional food. This section promotes both the collaboration between industrials and researchers and the synergy between biotechnology, bioprocessing and food engineering, to efficiently apply the developments in these fields to agri-food.

METABOLIC ENGINEERING AND SYSTEM BIOLOGY (MESB)

Chair: Dr. Philippe Jacques, Belgium

Among bioengineering emerging tendencies are the optimised cell factories and the computational models of biological systems based on big data. Accordingly, the fields of work of this section include expression of biosynthetic pathways, identification and overproduction of secondary metabolites of high industrial interest, and application of system biology to industrial problems. We face these challenging topics through sharing approaches and bioinformatics tools to assess complex interactions within biological systems, such as metabolic fluxes.

MICROALGAE BIOENGINEERING (MAB)

Chair: Prof. Michel Eppink, The Netherlands

Microalgae represent a considerable renewable biomass source for the manufacturing of existing high value bio-based products and the development of new, lower value products. Though, microalgae exploitation is restricted by high energy use and investment costs. Therefore, we conceive our section as a focal point to develop microalgae production and downstream processing technologies, microalgae-based products, and to inform about the latest advances in the microalgae field.