



Join us for ECCE 10/ ECAB 3/ EPIC 5

Participate in the main scientific event in Chemical and Biochemical engineering in Europe – to be held next year in Nice, France on 27 September – 1 October 2015.

Three congresses – one event:

- 10th European Congress of Chemical Engineering (ECCE 10)
- 3rd European Congress of Applied Biotechnology (ECAB 3)
- 5th European Process Intensification Conference (EPIC 5)

Plus **4 symposia** on thermodynamics, product design, sustainability and food.

The call for papers for ECCE 10, ECAB 3, EPIC 5 and associated symposia/workshops is now open, visit: <http://ecce2015.eu/index.php/call-for-paper>

Selected papers will have the possibility to be submitted to a number of international peer-reviewed journals.

ECCE 10 will focus on new advances and opportunities in the core chemical and biochemical engineering disciplines, with emphasis on the following four main societal challenges:

- Energy: new and unconventional resources, conservation and management
- Water Management and Treatment
- Biotechnology and Food
- Industrial ecosystems

ECCE 10 will also cover the following topics:

Bulk Materials Handling & Processing; Chemical reaction engineering; Computer-aided Engineering /Process Systems Engineering; Chemical reaction engineering; Education (workshop); Electrochemical Engineering (workshop); Energy: conservation and management; Fluid separations processes and technologies; High pressure and high temperature process technology; Industrial systems; Industrial use of thermodynamics (symposium); Innovation; Membrane Engineering; Mixing / Multiphase flow; New and unconventional resources; Particulate solids/

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ECCE 10+ECAB 3+EPIC 5
September 27 - October 1st, 2015 - Nice, France

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3 congresses

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ONLINE
THE CALL FOR ABSTRACTS IS NOW OPEN!

+ **4 symposia** on thermodynamics, product design, sustainability and food and many workshops

Be an important actor of this event and send your proposal

www.ecce2015.eu

More information on www.ecce2015.eu

solids processing; Polymer Reaction Engineering; Process safety and loss prevention (workshop); Product Design and Engineering (symposium); Sustainable Management of Natural Resources (symposium); Soil remediation; Technological innovation for water management in the urban and industrial context (workshop); Waste sludges treatment and disposal.

ECAB 3 will cover the following topics:

Biochemical Engineering: bio refineries; bio energy, bio fuels & renewable; bio products (or bio-based products); biopharmaceuticals; agro-food biotechnology; marine biotechnology, algae and photo biotechnology; PAT; systems biotechnology and metabolic engineering; bio catalysis and biotransformation; protein and enzyme stability; downstream processing; bioreactor engineering; modelling and control; biosensors; cell and tissue engineering; nano-biotechnology.

EPIC 5 will follow nine main themes:

Batch to continuous; Hybrid and multifunctional process; Energy activation; Plant intensification; Modular process; Scale-up & industrial implementation of intensified technologies; Modelling and control of intensified processes; Sustainability and safety; Dissemination and teaching of Process Intensification.

Key dates for your calendar:

- Call for papers, abstract submission deadline: **27 February 2015**
- Early bird registration: **November 2014 – May 2015**
- Author notification (abstract acceptance): from **December 2014 – April 2015**
- Author notification (poster/oral presentation or keynote lecture): **May 2015**
- Program online: **June 2015**

Events: 15th European Conference on Mixing, St. Petersburg, Russia, 28 June - 3 July 2015 (EFCE Event No. 728)

The 15th European Conferences on Mixing, held in Saint Petersburg on 28 June to 3 July 2015, will be organised by the EFCE Working Party on Mixing and the Department of optimization of chemical and biotechnological apparatuses, Saint Petersburg State Institute of Technology, and chaired by Professor Rufat Abiev.

The conference provides a forum for presentations and debates on the latest advances in theory and practice of mixing. Conference sessions will be on fluid mechanical fundamentals of mixing processes, chemically reactive flows and precipitation, single- and multi-phase mixing, mixing of complex fluids, suspensions and dispersions, mixing in process intensification, mixing in biotechnological applications, and advances in numerical simulation of mixing.

Conference website: <http://mixing15.eu>

New Working Party – Quality by Design

The European Federation of Chemical Engineering (EFCE) is pleased to announce the formation of a new Working Party entitled **Quality by Design**, with Professor Krist Gernaey, of the Technical University of Denmark (DTU), appointed as Chair, and Professor Christoph Herwig, of the Vienna University of Technology, appointed as Co-Chair.

Increased and systematic involvement of chemical engineers can be a major advantage in the pharmaceuticals industry – for example, the use of Process Systems Engineering (PSE). PSE methods and tools can play a prominent role in paving the way towards more efficient and innovative pharmaceutical production processes. An increasing number of scientific papers have demonstrated the usefulness of involving chemical engineering disciplines in pharmaceutical product and process development.

Based on the above, the main objectives of the new Working Party, *Quality by Design*, are:

- **To offer a suitable forum for dissemination of research results and for exchange of ideas**
 - **To coordinate research activities at the European level** by identifying areas/problems that are important for development of novel and improved pharmaceutical production processes
 - **To promote cross-disciplinary exchange of knowledge and ideas** in order to expand activities to include other sectors such as the production of food, bio-based production processes and also regulatory bodies.
 - **To actively seek collaboration with other EFCE working parties** to practically realise the activities required to meet the aforementioned objectives – obvious examples for collaboration are the Working Parties for CAPE, Process Intensification, Education, Crystallization etc
 - **To publish an electronic newsletter every six months** to make recent developments in the area known and available.
- **To further promote the use of chemical engineering methods and tools** in pharmaceutical process development and operation, as well as in pharmaceutical product design – one way of achieving this is by the publications of white papers

Calls for Nominations

Mixing

EFCE and its Working Party on Mixing are pleased to announce the call for nominations for two of its awards:

The Lifetime Recognition Award – given every three years to a member of EFCE member countries in recognition of their outstanding contribution to mixing science and technology in Europe. The award is sponsored by the BHR Group and comprises of a plaque/certificate and a cash award of €1,500.

The Young Researcher's Award – established in 2000, this award recognises the work of a young researcher in his/her early career which demonstrates an outstanding contribution to research and/or practice in mixing. The award consists of a certificate, cash prize of €1,500 and travel grant. Any researcher under the age of 35, who has completed their PhD in the field of mixing at a European university and is currently active in mixing research is eligible for nomination.

Closing date for nominations:

20 January 2015

Both awards will be presented at the 15th European Mixing Conference which will be held in St. Petersburg, Russia between 28 June and 3 July 2015.

For further information about the nomination procedure, eligibility and supporting documentation, please refer to the website of the EFCE Working Party on Mixing: <http://wp-mixing.inp-toulouse.fr/en/awards.html>

Thermodynamics and Transport Properties

For the fourth time, the Federation is pleased to announce the call for nominations for the **EFCE Excellence Award in Thermodynamics and Transport Properties** to recognise a PhD thesis/associated papers published in the preceding two-year period, which demonstrates an outstanding contribution to research and/or practice in thermodynamics and/or transport properties.

The award consists of a certificate, cash prize of €1,500, travel grant (not exceeding €500) and fee waiver to attend the 28th European Symposium on Applied Thermodynamics (ESAT

2015), which will be held in Athens, Greece, from 11 to 14 June 2015, where the award will be presented.

Nominations may be submitted by any PhD supervisor at a PhD-awarding institution in an EFCE Member Country or by a member of a national or regional member association of EFCE. The thesis must have been completed and published, and the PhD degree examined and awarded between 1 January 2013 and 31 December 2014.

Closing date for nominations:

31 January 2015

Further information can be obtained from the Working Party on Thermodynamics and Transport Properties' website at: <http://www.wp-ttp.dk> or from: <http://www.efce.info/ExcellenceAwardTTP.html>.

Product Design and Engineering

EFCE is pleased to announce the **Excellence Award in Product Design and Engineering 2015** which aims to recognise an outstanding PhD thesis in the field.

The award comprises a certificate and a cash prize of €1,500. It will be presented at the 5th European Symposium on Product Design and Engineering, which will be held in conjunction with the 10th European Congress of Chemical Engineering (ECCE10) and 3rd European Congress on Applied Biotechnology (ECAB3) in Nice, France, on 27 September to 1 October 2015. A travel grant of up to €500 and fee waiver to attend ECCE10/ECAB3 is also included.

Nominations may be submitted by any PhD supervisor at a PhD-awarding institution in an EFCE Member Country or by a member of an EFCE Member Society. Only PhD theses published between 1 January 2011 and 31 December 2014 are eligible for nomination. A nominated PhD thesis must have been completed and published and the PhD degree examined and awarded.

Closing date for nominations:

28 February 2015

For further information can be obtained at: <http://www.efce.info/ExcellenceAwardProductDesign.html>

Engineering biological solutions for next generation drug therapies



(L-R) Andy Furlong, IChemE director of policy; Professor Nigel Titchener-Hooker, Danckwerts lecturer; and Professor Anton Middleberg, session chair

The next decade will see biologically derived therapies dominate the treatment landscape, said Professor Nigel Titchener-Hooker during his delivery of the 27th Danckwerts Memorial Lecture in Atlanta, US, on 17 November.

Professor Titchener-Hooker, Head of Department of Biochemical Engineering at University College London (UCL) and Director of EPSRC Centre for Innovative Manufacturing of Emerging Macromolecular Therapies, also argued that current limitations in downstream processing techniques threaten to obstruct progress and that earlier consideration to bioprocess challenges should be given during drug development.

In 2013, eight of the top ten selling drugs worldwide were 'biologics' products manufactured in a living system such as a microorganism, plant or animal cell. Most biologics, including the top sellers, *Humira*®, *Enbrel*® and *Remicade*® are very large, complex molecules produced using recombinant DNA technology.

"Companies still tend to progress on the basis of clinical promise," said Titchener-Hooker. "They tend to think about ease of manufacture much later, and vital process decisions are all too often isolated from business decisions, with unhelpful consequences."

"Biochemical engineering offers the tools and methods to enable more rapid transition from

clinical promise to manufacturing certainty," he continued. "This will enable better business decision making by leveraging a fundamental understanding of ways to improve purification processes quickly, and with confidence. This will deliver affordable, next generation therapies."

Titchener-Hooker drew on examples of his work on process miniaturisation at UCL, which he described as "ultra scale down". Case studies of the bioprocess optimisation of operations, including centrifugation and chromatography, were discussed in the context of the latest computational techniques and decision making tools. The lecture made a compelling case for process optimisation and cost reduction via better equipment sizing in multi product facilities.

The Danckwerts Memorial Lecture, which takes place annually, is co-sponsored by the European Federation of Chemical Engineering (EFCE), the Institution of Chemical Engineers (IChemE) and the American Institute of Chemical Engineers (AIChE), and is supported financially by Elsevier and published in their journal *Chemical Engineering Science*.

The 28th Danckwerts Lecture will be delivered at the tenth European Congress of Chemical Engineering (ECCE 10), which takes place in Nice, France, from 27 September – 1 October 2015.

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