



Report from ECCE12 & ECAB5

After 22 years, the European Congress of Chemical Engineering (ECCE 12) returned to Florence, where the first event (ECCE 1) was organized in 1997.

The Congress was held in conjunction with the European Congress of Applied Biotechnology (ECAB 5), from September 15 to 19, 2019 in the Fortezza da Basso.

These events were organized by AIDIC, the Italian Association of Chemical Engineering, under the auspices of the European Federation of Chemical Engineering (EFCE) and the European Society of Biochemical Engineering Science (ESBES). The congresses represent an important opportunity to meet and share technical views and experiences, and are well known all over the world.

The location: the Fortezza da Basso

The Fortezza da Basso, selected by AIDIC as congress site, demonstrated to be the ideal location for the event, with its massive bastions and more than 80.000 square meters of available facilities, combining historical structures with modern pavilions, perfectly integrated in an ambient full of



charm, that enchanted all visitors.

The Fortress has a long history: it was built between 1534 and 1536 by Architect Antonio Sangallo for Alessandro de Medici, conceived to protect the very wealthy city and discourage Florence enemies, demonstrating its military power. The plan actually worked well, as the fortress was never attacked.

In the '70s the conversion of the Fortress into a congress and exhibition center started, followed

Welcome to the final 2019 issue of the EFCE News. If you have any comments on the newsletter please get in touch. With kind regards and best wishes for the festive season

Hermann Feise
EFCE President

In this issue:

- Report from ECCE12 & ECAB5
- Invitation to ECCE13 & ECAB6
- Im Memoriam - Professor Jerzy Robert Baldyga (1950 – 2019)
- The Federation welcomes its Trustees for 2020-2021
- Calls for nominations in the field of CAPE, Thermodynamics and Transport Properties, and Electrochemical Engineering
- News from EFCE Member Societies – invitation to CHISA 2020
- EFCE Events 2019-2021



throughout the years by several upgrades and the construction of the two large and modern pavilions, Spadolini and Cavaniglia.

The historical rooms have kept their original names, related mainly to their military functions: Room Cannoni, where cannons were located, Room Polveriera, where gunpowder and explosives were stored, Room Scherma, with his beautiful wooden trusses roofing, where fencing training took place, and Room Arco, used for archery.

The Lorenese Building, from the Lorena family, to which the Dukes of Tuscany of the of the 18th and 19th centuries belonged, was renovated in the early 2000 and with its many rooms is very suitable for hosting many parallel events, as it was the case of ECCE 12/ECAB 5.

The Basilica Room was used for the Gala Dinner, which represented a good opportunity for the guests to appreciate the traditional Tuscany cuisine, revisited with a touch of modernity, and the Italian wines and aperitifs, well known now all over the world.

The Scientific Program

The Florence conference was an important scientific event, with 1043 works chosen out of the 1737 proposed by 5370 authors. We had 1277 participants to the conference: scientists, researchers, teachers, students, professionals, industry operators, engineering companies, contractors and suppliers from 61 countries.

The themes presented and discussed were the classical ones of chemical engineering, i.e. reactor design, heat and mass transfer, etc., but also the more recent and up-to-date ones, like biofuels, biorefineries, plastic recycling, and artificial intelligence, so that everybody could find subjects in line with his/her own scientific interest.

In total we had 6 plenary sessions with prestigious speakers, 8 keynote lectures, 3 symposia, 2 workshops; 48 parallel sessions. Furthermore for the first time in an ECCE/ECAB congress, the poster sessions were managed

utilizing electronic posters, e-posters, with 50 large plasma screens arranged in totems of three each, always accessible throughout the event.

The area chosen for the e-posters was that of the coffee break, the exhibitor stands and the relax space, and this created a very informal and conducive atmosphere, that was very helpful the dialog and the exchange of ideas among the participants. This spirit, which characterized the event, was favored by the charm of the site, as said already, and also by a wonderful weather, rather hot for the season, and by the magical beauty of Florence.

The Young Program

The event proved particularly interesting for young participants: researchers, young scientists and professionals were able to join a rich Young Program, coordinated by a group of volunteers from different European countries and sponsored by Chemstations Europe, which organized the Process Simulation Cup (PSC), a process simulation competition.

In addition to the PSC, the Young Program included a very successful pub quiz with prizes in a downtown tapas restaurant on Monday night, which allowed everyone to get to know each other in a relaxed and friendly atmosphere; a Meet Your Idol breakfast event in the town center, on Tuesday morning, a meeting of young researchers with four senior representatives of industry and academia, who spoke very openly about their professional experience and their challenges; the so-called PhD Speed Date, an informal gathering with colleagues interested in common themes at the Palazzina Lorenese on Tuesday afternoon; a PhD Career Fair, two meetings on Wednesday morning and afternoon at the Lorenese for reciprocal presentation of PhDs with leading companies in their sectors, which had a double participation to the one foreseen during the registration phase; and finally on Thursday afternoon the visit in two shifts to the historical plant in Florence of Nuovo Pignone, thanks to the BHGE Sponsor, where tradition and the latest smart manufacturing techniques are perfectly integrated.





The message of AIDIC President, Giuseppe Ricci

The President of AIDIC, Giuseppe Ricci, ENI's Chief Refining & Marketing Officer, welcomed the participants during the Opening Session and passed the following messages, in particular to the

young ones: "Building the future starting from the past, through a balanced mix of the young and the senior, academia and industry, science and technology: what starts today from Florence is a new Renaissance.

In this period of complex challenges, such as climate change, energy transition, overpopulation, growing gap between rich and poor and geopolitical tensions between countries, it is necessary to adopt a new vision of the world and enhance collaboration and integration between the different disciplines, putting in common their skills and experiences. In this, Chemical Engineering and Applied Biotechnology may play a fundamental role.

Thanks to technological and engineering development, various businesses crucial for our economy, such as oil & gas, petrochemicals, food, pharmaceuticals, are evolving towards an economic model looking more closely at environment, thus contributing to environmental sustainability and to the energy transition, which are at the heart of the European agenda. This is generating important opportunities and transversal industrial collaborations, both at European and national level.

Working in teams, paying maximum attention to safety and the environment and playing a leading role in the fight against climate change, are the three great drivers of modern engineering, who demand great responsibility, but which also represent an excellent stimulus and an opportunity for young people who are preparing to contribute to building a more sustainable future "

The Plenary Speakers

All plenary sessions of the conference took place in the great Cavaniglia hall, with speakers from Italy, Spain, Germany, Holland and the United States.

Prof. Scott Fogler of the University of Michigan, a name well known to many students of Chemical Engineering in the world, former President of AIChE, spoke about safety and the initiatives he has carried out for inclusion of this extremely important discipline throughout the curriculum of studies in the USA; Prof. Klavs Jensen of MIT, winner of the prestigious Danckwerts medal, presented the advances in the field of artificial intelligence and automatic learning and its applications in the pharmaceutical industry; Juergen Pleiss, from the University of Stuttgart, spoke about biocatalysis

and enzymatic stability, all topics of great interest.

However, the public was even more attracted by the themes of environmental sustainability, discussed by Prof. Flavio Manenti of the Milan Polytechnic, the first speaker of the conference, who talked about the innovative processes for reusing Carbon Dioxide; by Dr. Marinke Wijngaard, of TNO in the Netherlands, who developed the topic of chemical recycling of complex plastics, and finally by Prof. Inmaculata Ortiz, of the University of Cantabria in Spain, who presented us with several examples of plant engineering applications of membranes driven by sustainability.

These sessions marked the time of the conference, an appointment for everyone every morning and every afternoon of the three full days.

Final balance

Having participated to various feedback sessions, formal and informal, we can be satisfied with how things went, after two and a half years of preparation.

Participation was good in terms of overall numbers, foreign presence and level of attendance; the sessions were always well attended, even the plenary of the last day, which in the conferences often shows many empty seats; the scientific content was good and aligned with classical and current issues; the speakers' interventions were appreciated, with more questions from the public than allowed by the schedule; the program schedule was followed precisely, without overruns; the new experience of e-posters was a real success.

We have however requested comments, observations, suggestions and even criticisms, at the email address: ecce12_ecab5@aidic.it.

We hope that these feedbacks will be very useful for the future and in particular for the next congresses that will be held in Germany in 2021: so see you in Berlin for ECCE 13 & ECAB 6!

Acknowledgments

We renew our thanks on behalf of AIDIC to all those ones, who contributed to the success of the event: the scientific and organizational committees, the sponsors, partners and exhibitors, who have generously supported us, the AIDIC staff and that of Firenze Fiera, tireless, available and professional, and above all the participants, who actually built the conference during these days of intense work and in the many months of its preparation.

Special thanks go to Prof. Sauro Pierucci, who had an essential role in organizing the event and the program and who unfortunately for personal reasons could not be present at the conference, long awaited with commitment and even trepidation: grazie, Sauro!

Giorgio Veronesi

In Memoriam – Professor Jerzy Robert Baldyga (1950–2019)



The European Federation of Chemical Engineering (EFCE) was very sad to learn that Professor Jerzy Baldyga (*1950), Warsaw University of Technology, passed away on 18 November 2019 at the age of 69.

Born in 1950, he received his Master's degree in Chemical Engineering in 1974, his PhD in Chemical Engineering in 1981, and his DSc (habilitation) in Chemical Engineering in 1989 from Warsaw University of Technology. In 1997 he was appointed full professor at Warsaw University of Technology and Chair of Mechanical Engineering and Process Dynamics (at present the Chair of Engineering and Dynamics of Chemical Reactors) at the Faculty of Chemical Engineering. He was visiting professor at ETH Zürich and the University of Saskatchewan. In Zürich, he worked with Prof. J.R. Bourne on effects of turbulent flow and turbulent mixing on the course of complex chemical reactions. A good example of this cooperation is the Engulfment model of micromixing introduced between 1983 and 1988 which, nowadays, is applied by many research groups. A book by J. Bałdyga, J.R. Bourne, "Turbulent Mixing and Chemical Reactions" John Wiley & Sons, (1999) and related papers have been awarded by NAMF AIChE (North American Mixing Forum affiliated with AIChE) in October 2011 as one of 21 most influential contributions in mixing research in 20th and 21st century.

Professor Jerzy Baldyga's research areas included: Effects of flow (turbulent and laminar) and mixing on the course of complex chemical reactions i.e. micromixing problem; effects of hydrodynamics and mixing on particle size and morphology in the process of precipitation; drop breakup and coalescence in turbulent flow; shear problem in biotechnology; relations between secondary processes (aggregation, breakage), structure of suspension, rheology of suspension, hydrodynamics and mixing; liquid-

liquid microreactors; and high-shear mixers.

He promoted 16 Doctors, 13 at Warsaw University of Technology, 3 at ETH Zürich (as co-referee) and is the author of 3 books, several book chapters and 248 papers.

Professor Baldyga had contributed greatly to the development of Chemical Engineering in Europe and of the Federation, especially in the field of mixing. Since 2001, he served as a Polish delegate to the EFCE Working Party on Mixing, which he chaired since September 2012.

Since 2016, he contributed to the EFCE as a member of its Executive Board and he represented the Polish Association of Chemical Engineers (PACE) in the EFCE General Assembly. In these positions he fostered the liaison and scientific exchange and cooperation with Eastern European countries.

The EFCE extends its deepest sympathy to Jerzy's family, friends and colleagues.

Jerzy Baldyga – an exceptional scientist and professor, a fair man, our friend

26 November 2019

Jerzy was the Chairman of our European Working Party on Mixing. He was the European leader of mixing and we owe him so much. He was our colleague and our friend, a witness and an actor of our scientific advances, both technical and industrial...

Jerzy started his extraordinary scientific career in Zurich, working with John Bourne. His initial work focused on the fundamentals of chemical reaction and fluid mechanics, oriented towards mixing processes. This was very novel in the science of mixing, bringing nobility to the discipline and placing it highly within the EFCE.

During the 1980s, the European mixing community was represented by several schools of knowledge, with strong groups in England (Birmingham, London) and...the Netherlands with John Smith, in Western Europe (Toulouse, Zurich, Munich) and in Eastern Europe (Prague, Sofia, Budapest and Warsaw). However, with his in-depth works, Jerzy was able to efface these arbitrary differences. I remember the great intellectual pleasure that we obtained from his

precise and comprehensive conferences, which were always contextualized. He was a speaker that the community was always awaiting in our European conferences...Würzburg 1985, Pavia 1988, Brugge 1991, etc..., and more recently in Bologna 2006 chaired by Franco Magelli, London 2009, Warsaw 2012.

When Jerzy left Zurich to return to Poland, he created an outstanding research group at the Faculty of Chemical and Process Engineering at Warsaw University of Technology. It is saddening to recall that Wioletta Podgorska was his first PhD student. During his career, he affirmed how proud he was of her and without doubt, brilliant Wioletta was a beholder of Jerzy's exceptional scientific quality.

At the last European Conference on Mixing in 2018 in Toulouse, both Jerzy and Wioletta were present, they gave extremely high quality conferences, providing numerous scientific and industrial outlooks.

Jerzy was elected Chairman of the EFCE Working Party on Mixing in Warsaw in 2012. It was a natural choice since he was an internationally renowned scientist, and it was without doubt that he would honor the mixing

community within the EFCE. From this moment onwards, I was sure that he would be a future awardee of the Lifetime Recognition Award in Mixing...and he certainly would have received this prestigious award in 2021. Unfortunately, destiny decided otherwise. However, perhaps one of the Working Party on Mixing awards will be named after him, and we will be honoured.

Young European researchers have recognized themselves in him at our various conferences. I particularly remember a conference in Poznan in 2005 where Jerzy invited me to give a presentation to his Polish colleagues and I had realized at that moment, the immense respect he instigated amongst his colleagues and their pride to have him as their leader. I also remember the message he sent me on the 18th of November 2019, the day before he left us, describing his grief following the death of Wioletta. Jerzy was a true scientist, a fair man, our friend.

Joël Bertrand

Chairman of the EFCE Working Party on Mixing, 2004 - 2012

ECCE13 & ECAB6 - 13th European Congress of Chemical Engineering & 6th European Congress on Applied Biotechnology

Berlin, Germany, 19-23 September 2021 (EFCE Event No. 767)

Engineering the Future

Chemical engineering, biotechnology and bioprocessing are the key to providing innovative solutions for food supply, mobility, energy, health and well-being while striving for a sustainable economy.

At ECCE 13 & ECAB 6, scientists from industry, university and research institutions from Europe and beyond will meet in Berlin to discuss the latest research and industrial applications in all fields of chemistry, process engineering, biotechnology and related fields.

Promoting interdisciplinary exchange and the



**ECCE
AB21**

transfer from research to industrial applications, these joint congresses cover the whole range of relevant topics from laboratory research via process development and chemical reaction engineering to challenges from industrial practice and overarching topics such as quality management and education.

Subscribe to the ECCE13 & ECAB6 Newsletter now!

Website: <http://ecce-ecab2021.eu/>

Twitter: #eccecab21

The Federation welcomes its trustees for 2020-2021

EFCE will begin 2020 with the start of the second term of office of its President, **Dr. Hermann J. Feise**, its Executive Vice-President, **Giorgio Veronesi**, and its Scientific Vice-Presidents, **Professor David Bogle**. Furthermore, the Federation welcomes the trustees to its Executive Board for the next two-year term of office (2020-2021), following elections held at the General Assembly during the European Congress of Chemical Engineering in Florence.

In addition to the presidential triumvirate, EFCE welcomes a number of new trustees to the Executive Board. Newly-elected trustees are: Elisabetta Brunazzi (Italy), Alexis Pey Torruella (Spain), Álvaro Ramirez-Gomez (Spain), Maurizio Rovaglio (Italy), and Eric Schaer (France).

They are joining the re-elected trustees Adisa

Azapagic (United Kingdom), Michael Considine (United Kingdom), Ferenc Friedler (Hungary), Antoon ten Kate (The Netherlands), Petr Kluson (Czech Republic), Patrick Piccione (Switzerland), and Michael Wilk (Germany), and the appointed trustees Willi Meier (DECHEMA), François Nicol (SFGP), and Jon Prichard (IChemE) who represent the three EFCE General Secretariats.

Retiring from the Executive Board at the end of 2019 are: Bent Sarup (Denmark), Carlos Negro (Spain), Flavio Manenti (Italy), and François Giger (France).

EFCE is very grateful for the hard work and the many hours of their time all members of the Executive Board have spent working on behalf of the Federation, and would like to thank them for their effort.

Calls for Nominations

Carl Wagner Medal of Excellence in Electrochemical Engineering



The Carl Wagner Medal of Excellence in Electrochemical Engineering is awarded every three years by the Working Party on Electrochemical Engineering (WPEE) of the European Federation of

Chemical Engineers (EFCE) to a European researcher under the age of 35 for outstanding contributions to research in applied electrochemistry or electrochemical engineering.

In 2020 the medal will be presented at the 12th European Symposium on Electrochemical Engineering – 12th ESEE, to be held in Leeuwarden, The Netherlands, on 14-18 June 2020, where the recipient of the medal will be invited to give a lecture. The award also comprises a cash award of EUR 1500, a certificate and a travel grant (not exceeding EUR 500) to attend the 12th ESEE.

Nominations for the medal, with supporting documentation (letter of support of the nomination by a senior electrochemist or electrochemical engineer, curriculum vitae, list of publications and other relevant activities) should be sent to Claudia.Weidlich@dechema.de or Karel.Bouzek@vscht.cz

Further information about the nomination procedure, eligibility, supporting documentation, and the online submission form can be obtained from the EFCE website at:

<https://efce.info/Carl+Wagner+Medal>

Deadline for submission of nominations:

20 February 2020

*The Award is generously sponsored by **Covestro**.*



About Covestro

Covestro is among the world's largest polymer companies with business activities focused on the manufacturing of high-tech polymer materials and the development of innovative solutions for products used in many areas of daily life. The main segments served are the automotive, construction, wood processing and furniture, and electrical and electronics industries. Other sectors include sports and leisure, cosmetics, health and the chemical industry itself. The focus is on innovative, sustainable solutions for the big challenges of our time – such as climate change, increasing scarcity of resources, growing mobility and urbanization. In the field of electrochemistry Covestro together with partners has developed energy saving Chlorine production technologies using Oxygen Depolarized Cathodes.

2020 EFCE Distinguished Lecture in Thermodynamics and Transport Properties

The European Federation of Chemical Engineering (EFCE) is pleased to announce the call for nominations for its prestigious, biennial Distinguished Lecture in Thermodynamics and Transport Properties (TTP) to recognize an outstanding research career and achievements within the field.

A nominated candidate should have made significant contribution and/or achievements for the advancement of science and technology within Thermodynamics and Transport Properties (TTP) and has to be active in a European institution.

The award comprises a certificate and EFCE press communication, a travel/ accommodation grant (not exceeding EUR 500) and fee waiver to attend the 31st European Symposium on Applied Thermodynamics - ESAT 2020 in Paris, France, on 28 June -1 July 2020 where the award will be presented.

Furthermore, the laureate will be invited to deliver a keynote lecture at the ESAT Symposium. The closing date for nomination is **17 January 2020**.

Further information about the nomination procedure, eligibility, and supporting documentation and the online submission form are available on the EFCE website at www.efce.info/DistinguishedLecture_TTP

Reminder: EFCE Excellence Award in Recognition of an Outstanding PhD Thesis on CAPE 2020

The call for nominations for its prestigious Excellence Award in Recognition of an Outstanding PhD Thesis on CAPE is still open! The award recognises a PhD thesis which demonstrates an outstanding contribution to research and/or practice in computer-aided process engineering (CAPE) or process systems engineering (PSE).

Any PhD thesis supervised at a university or PhD-awarding institution of an EFCE member country in computer-aided process engineering (CAPE) or process systems engineering (PSE) is eligible for nomination. The candidate's thesis must have been defended after 1 January 2017.

The closing date for nominations is **31 December 2019**. Further information: www.efce.info/ExcellenceAwardCAPE



*The Award is generously sponsored by **Process Systems Enterprise Inc.***

News from EFCE member societies

Invitation to CHISA 2020

Professor Jiří Drahoš, Congress Chairman and President of the Czech Society of Chemical Engineering (CSCHE) is very pleased to invite you to the 24th International Congress of Chemical and Process Engineering - CHISA 2020 held in the very beautiful city of Prague from 23 to 27 August 2020. As all the CHISA Congresses in the past, also this one will cover a range of attractive topics and will offer many interdisciplinary links.

After 14 years of fruitful cooperation with organisers of the PRES Conferences on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction (since 2004), the CHISA and PRES leaders decided to separate again the both events. Along with this conclusion, the both CHISA structure and "classical" topics have been thoroughly modified to follow nowadays trends in the best way.

The logistics of the program should enable the interested people to listen also to the presentations, which are close to their fields of research, however outside their everyday horizons. A special care will be paid to selection of both the plenary lectures and plenary keynote lectures (as a newly introduced form of presentation), which will be granted by special Congress awards.

Topics: We Think Global; Energy First (Second ...) Continuous Processing and Miniaturisation, Mixing; Industry 4.0; Advanced Functional Materials, Structures and Components; The Green Square: A Good Address; The Essentials; Hand in Hand; The Wiley - VCH Poster Session.

Details are available at: <http://2020.chisa.cz/scientific-program/#main-topics>

Call for papers: Posters may be accepted up to the beginning of the Congress, however only contributions received before **31 May 2020** will be included in the final programme.

Call for nominations - Congress Awards 2020: You are invited to submit nominations for the following awards: The CHISA Congress Plenary Talk Main Award; The CHISA Congress Keynote Talk First Award; The CHISA Congress Keynote Talk Second Award.

Deadline for nominations: **1 March 2020**

Further information: <http://2020.chisa.cz/scientific-program/#awards>

Join the Exhibition MARCHES 2020 which will take place in the premises of the CHISA 2020. An expression of interest in the Exhibition should be sent to org@chisa.cz upon which the more detailed information will be provided.

Website: <http://2020.chisa.cz>

Events organised by or on behalf of EFCE in 2019/21

An extended list of events is available at <http://www.efce.info/events.html>

CHEMCON-2019

**72nd Annual Session of the Indian Institute of Chemical Engineers
New Delhi, India, 16-19 December 2019 (EFCE Event)**

Theme: Advances in Chemical Engineering for Industrial Applications

CHEMCON 2019 includes a half-day Indo-European symposium. Leading personalities from India, Europe and other countries in the field of Chemical Engineering from academia and industry, will make plenary technical presentations on their subject of expertise, relevant to the theme of various technical sessions.

See the tentative Programme at:

https://663e96ce-aac8-49a8-bbf5-a926819ccabe.filesusr.com/ugd/a85816_b7031bcfaf87543a191e0abd2102f79c3.pdf

Register NOW!

Website: <http://www.chemcon-2019.com>

European Symposium on Computer Aided Process Engineering - ESCAPE30

Milan, Italy, 24-27 May 2020 (EFCE Event No. 764)

ESCAPE-30 is organised by the Italian EFCE Member Society AIDIC in collaboration with the EFCE Working Party on Computer Aided Process Engineering. The Symposium attracts scientists from many different countries providing a platform for discussing the latest progress in the field of Computer Aided Process Engineering, following both a scientific and technological interdisciplinary approach.

The symposium contributions will be: Plenary Lectures, Keynotes, Oral and Poster contributions. After peer review, the contributions will be published by Elsevier in the series Computer Aided Chemical Engineering.

Topics: Modelling and Simulation; Synthesis and Design; Process control and operations; CAPE in Sustainable Energy Applications; Bioresources, Bioprocesses and Biomedical Systems; Internet of Things; Concepts, Methods and Tools; Education

in CAPE and Knowledge Transfer.

Plenary speakers: Dr. Francesco Rossi; Ana Paula Barbosa-Póvoa.

Register NOW! Deadline for early bird registration (mandatory for presenting authors): **20 January 2020.**

Website: <http://www.escape30.it>

14th Mediterranean Congress of Chemical Engineering Barcelona, Spain, 2-5 June 2020 (EFCE Event No. 768)

The event is organised by SEQUI (Sociedad Espanola de Quimica Industrial e Ingenieria Quimica) in the frame of EXPOQUIMIA. The Congress will focus on the dissemination of the most recent advances and results related to Chemical Engineering Science.

Topics: Separation Technologies; Chemical Reactors; Processes Systems Engineering; Sustainable Development and Environmental Engineering; Food and Biochemical Engineering; Process and Product Engineering

Do not miss this opportunity to improve the visibility and disseminate the potential applications of your work, find new opportunities and application fields and promote Scientific/ industrial symbiosis. Selected papers will be published in special issues of different specialized journals.

Plenary speakers: Prof. Renato Rota, Politecnico di Milano; Wayne Sim, Zesi and Aucerna.

The call for papers is open. Deadline for submission of abstracts: **15 January 2020.**

Website: <https://www.mecce.org/>

12th European Symposium on Electrochemical Engineering - ESEE 2020 Leeuwarden, The Netherlands, 14-18 June 2020 (EFCE Event No. 766)

The 12th European Symposium on Electrochemical Engineering - ESEE 2020 is organised by the EFCE Working Party on Electrochemical Engineering in cooperation with Wetsus.

The scope of ESEE 2020 is “Electrochemistry for electrification and energy transition toward a sustainable future”, which captures the aim of the organisers to showcase scientific advances in physical, chemical and biochemical routes towards a future where electrochemical engineering is part of a sustainable society, closing resource cycles and contributing to zero-pollution mobility and manufacturing.

Topics: Electrocatalysis and electrochemical technologies; Safe water and air; Corrosion science for durable materials; Water electrolysis and fuel cells; Novel energy storage devices, batteries, and electrochemical capacitors; Bioelectrochemistry for energy conversion and resource recovery; Green capture and conversion of CO₂; Electrochemical recovery of raw materials; Advanced membranes and electrodes for selective ion removal; General session.

Invited speakers: Matthias Wessling; Menachem Elimelech; Martin Z Bazant; Elif Karatay; Geoff Kelsall; Matthew Suss; Manuel Andres Rodrigo; Xiao Su.

The call for papers is open. Deadline for submission of abstracts: **15 January 2020.**

Website: <http://www.electrochemical-engineering.eu/2020/>

2nd International Conference on Sustainable Production and Consumption – SPC20 **Edinburgh, United Kingdom, 24-25 June 2020 (EFCE Event No. 771)**

The conference is organised by IChemE in collaboration with the EFCE Sustainability Section and the journal Sustainable Production and Consumption published by Elsevier on behalf of IChemE.

The conference will provide a platform for high-quality papers on sustainable production and consumption, aiming to explore multidimensional interactions between technology, the environment, economy, society and policy. To promote the multidisciplinary efforts needed in addressing the challenges of sustainable production and consumption, papers are invited from engineers, natural and social scientists, as well as the humanities. Contributions at the interface of these disciplines are particularly encouraged.

Topics: Circular economy; Ecosystem services; Energy, food, water and waste nexus; Life cycle sustainability assessment and management; Sustainable lifestyles

and consumer engagement; Sustainable technologies, products and services; Sustainability indicators, multi-criteria decision analysis and systems optimisation; Sustainable development policy.

The call for papers is open. Deadline for submission of abstracts: **10 January 2020.**

Website: <http://www.icheme.org/spc20>

XXIV International Conference on Chemical Reactors – CHEMREACTOR-24 **Milan, Italy, 30 August – 4 September 2020 (EFCE Event No. 769)**

The XXIV International Conference on Chemical Reactors – CHEMREACTOR-24 is organised by the Boreskov Institute of Catalysis, Russia jointly with the world famous Politecnico di Milano, Italy. What started as a small domestic event in the 1960-s, has turned into a significant international conference, bringing together hundreds of researchers and engineers from countries all over the world.

Traditionally, the CHEMREACTOR conference programme focuses on the fundamental aspects and practical application of catalytic processes and chemical reactors, as well as on the development of novel highly-efficient technologies.

Main topics: Advances in Chemical Reactor Fundamentals; Chemical Reaction Engineering and Reactor Design – Novel Experimental Approaches, Modeling, Scale-Up and Optimisation; Chemical Reactors and Technologies for Targeted Applications; Advanced Processing of Conventional and Unconventional Hydrocarbon Feedstocks.

Plenary speakers: Prof. Guy Marin; Prof. Annemie Bogaerts; Prof. Ib Chorkendorff; Prof. Fausto Gallucci; Prof. Freek Kapteijn; Dr. Carlo Perego.

The call for papers is open. Deadline for submission of abstracts: **20 January 2020**

Website: <http://conf.nsc.ru/CR-24/en/>

1st International Symposium on Industrial Crystallization-ISIC 21 **Potsdam, Germany, 8-11 September 2020 (EFCE Event No. 751)**

The symposium, initiated by Jaroslav Nývlt in 1960, is organised under the auspices of the EFCE's Working Party on Crystallization since 1978 and, has become the premier international conference in the field of industrial crystallization.

The 21st ISIC 2020 provides a meeting and a discussion forum for scientists and engineers from academia and industry as well as suppliers of crystallization and related analytical equipment. The conference program will include lectures and poster sessions. A concomitant exhibition and introductory tutorials will complete the event.

Main Topics: Fundamentals of crystallization; Crystallization and precipitation in fine chemical, specialty & life-science industries; Developments in large scale industrial crystallization; Contributions of crystallization to sustainability; Integrated process design: Crystallization in the industrial process chain.

Plenary and Evening speakers: Prof. Beatrice Biscans, France; Prof. Richard Braatz, USA; Prof. Helmut Cölfen, Germany; Prof.

Juanma Garcia-Ruiz, Spain; Dr. Daniel Green, USA; Dipl.-Ing. Christian Melches, Germany.

The call for papers is open. Deadline for abstract submission: **31 January 2020.**

Website: https://dechema.de/ISIC_21.html

ECCE13 & ECAB6 - 13th European Congress of Chemical Engineering & 6th European Congress on Applied Biotechnology

Berlin, Germany, 19-23 September 2021 (EFCE Event No. 767)

Theme: Engineering the Future

Website: <http://ecce-ecab2021.eu/>

Subscribe to the newsletter now (see page 5)



**Best wishes
for the festive
season and
a peaceful,
prosperous
and fulfilling
New Year!**

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www.youtube.com/channel/UCxuvfbb5ST3DMHLAwZ6326w

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