

ECCE
AB23

17 - 21 September 2023, Berlin/Germany



14th European Congress of Chemical Engineering and 7th European Congress of Applied Biotechnology



14th European Congress of Chemical Engineering and 7th European Congress of Applied Biotechnology

**Berlin, Germany,
17-21 September 2023**

Motto: Chemical and Biochemical Engineering – Acting Together

Reminder – Call for papers

Twelve years after the first ECCE&ECAB conference, the European Federation of Chemical Engineering (EFCE) and the European Society of Biochemical Engineering Sciences (ESBES) are bringing the joint event back to Berlin. ECCE&ECAB2023 will showcase cutting-edge solutions: sustainable processes and products, new materials, solutions for energy storage, novel therapeutics and other most urgently needed innovations.

Plenary lectures:

- *Catalysis for a better world*
Prof. Dr. Benjamin List, Director of the Max Planck Institute for Coal Research and Nobel Laureate in Chemistry, Mülheim an der Ruhr/DE
- *Process Engineering in Food: Food security and Nutrition for all*
Christoph Hartmann, Head of Academic Alliances & Expertise Development, Société des Produits Nestlé S.A., Vevey/CH

Dear Readers,

Welcome you to year-end 2022 issue of EFCE News! This issue contains much information about recent and upcoming EFCE Awards, activities and events. If you have any comments/suggestions, please contact us.

With kind regards

Giorgio Veronesi
EFCE President

In this issue:

- Reminder ECCE14 & ECAB7 – Call for Papers
- EFCE Awards – Calls for nominations and applications: Thermodynamics and Transport Properties, Process Intensification, Crystallization, Electrochemical Engineering, Mixing; Student Mobility Award
- Working Party and Section News in brief: Energy, Education, Static Electricity in Industry
- Excellence Award winners: Fluid Separations, Mechanics of Particulate Solids
- Thermo position paper
- News about the official EFCE Journals
- EFCE Events in 2023

The Call for Papers is open!

The Organizing Committee invites you to [submit abstracts of lectures and posters](#) to the nine main topics. For the details list <https://ecce-ecab2023.eu/topics>)

Deadline for submission of abstracts for oral presentations: 15 January 2023

Exhibition and Sponsorship:

The exhibition is an integral part of ECCE & ECAB

2023 and offers a unique opportunity to promote your technologies, products and services in the broad field of chemical engineering. We offer a range of sponsorship and exhibition options that can be tailored to your requirements and to suit your budget. For details, please consult the [Exhibition and sponsorship brochure](#)

Please find more updated information on the conference website at <https://ecce-ecab2023.eu/>

EFCE Awards – Calls for nominations and applications

EFCE Excellence Award in Thermodynamics and Transport Properties 2023

The European Federation of Chemical Engineering (EFCE) and its Working Party on Thermodynamics and Transport Properties (website: https://efce.info/WP_TTP) are pleased to announce the call for nominations for the **2023 EFCE Excellence Award in Thermodynamics and Transport Properties**. The Award recognises a PhD thesis and associated papers published in the preceding two-year period, which demonstrate an outstanding contribution to research and/or practice in thermodynamics and/or transport properties.

The award consists of a certificate, a cash prize of EUR 1,500, a travel grant (not exceeding EUR 500) and fee waiver to attend the International Conference on Properties and Phase Equilibria for Product and Process Design – PPEPPD 2023 (conference website: <https://ppeppd.org/ppeppd2023/>) which will be held in Tarragona, Spain, on 21-25 May 2023, 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 nominated PhD thesis and publication(s) must address a topic relevant to the field of thermodynamics and/or transport properties. The thesis must have been completed and

published and the PhD degree examined and awarded between 1 January 2021 and 31 December 2022.

Closing date for nominations: 15 January 2023.

Further information about the nomination procedure, selection of candidates, eligibility, and supporting documentation, can be obtained from the EFCE website at: <https://efce.info/ExcellenceAwardTTP.html>.

The Excellence Award is generously sponsored by Bayer AG.



Bayer is a Life Science company with a more than 150-year history and core competencies in the areas of health care and agriculture. With innovative products, Bayer contributes to finding solutions to some of the major challenges of our time. A growing and aging world population requires an adequate supply of food and improved medical care. With life expectancy continuing to rise, Bayer improves quality of life for a growing population by focusing our research and development activities on preventing, alleviating and treating diseases. Bayer is also making an important contribution to providing a reliable supply of high-quality food, feed and plant-based raw materials.

EFCE Excellence Award in Crystallization 2023

The European Federation of Chemical Engineering (EFCE) and its Working Party on Crystallization (website: <https://efce.info/WPC.html>) are pleased to announce the call for nominations for the **2023 EFCE Excellence Award in Crystallization**. Launched in 2007, this triennial award has been instituted to recognise a PhD thesis or paper(s) of a scientist in an early stage of his/her career, who has made excellent contributions to the understanding or the industrial application of crystallization.

The previous award winners are Dr. Pedro Miguel da Silva Martins (2008), Dr. Levente L. Simon (2011), Dr. Thomas Vetter (2014), Dr. Elena Simone (2017), and Dr. Ashwin Kumar Rajagopalan (2020 – presented in 2021).

The award consists of a certificate, a travel grant not exceeding 500 euros and an invitation to attend the 22nd International Symposium on Industrial Crystallization (ISIC 2023) to be held in Glasgow, UK, from 5 to 8 September 2023, where the award will be

presented during a dedicated session. Here, the award winner will be given the opportunity to present the work.

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. The PhD thesis/paper(s) nominated must address a topic relevant to the field of crystallization. Only PhD theses or papers published between 1 January 2020 and 31 December 2022 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: 30 May 2023

For further information about the nomination procedure, eligibility, supporting documentation, and the online submission form, please visit the EFCE website at <http://www.efce.info/ExcellenceAwardCrystallization.html>

EFCE Excellence Award in Process Intensification 2023

The European Federation of Chemical Engineering (EFCE) and its Working Party on Process Intensification (website: http://www.efce.info/WP_PI) are pleased to announce the call for nominations for the prestigious **EFCE Excellence Award in Process Intensification**.

This biennial award recognises an outstanding PhD thesis in the field of process intensification. The award consists of a cash prize of EUR 1,500 and a certificate and a travel grant of up to EUR 500. The winner will be invited to give a presentation at a special session during the 8th European Process Intensification Conference – EPIC8 (Conference website: <https://epic2023.pw.edu.pl>), which will be held in Warsaw, Poland, on 31 May - 2 June 2023.

Any PhD thesis in the area of process intensification supervised at a university or PhD-awarding institution of an EFCE Member Country is eligible for nomination.

The nominator is the supervisor of the PhD candidate. The candidate's thesis must have been defended between 1 January 2021 and 31 December 2022.

Previous award winners include Carsten Buchaly (2009), Patrick W.A.M. Wenmakers (2011), Ernesto Altman Restrepo (2013), Danilo Alberto Cantero Sposetti (2015), Michael

Shoham Patrascu (2017), Andy N. Antzara (2019), and Evangelos Delikonstantis (2021).

The deadline for submission of nominations is 28 February 2023.

Further information about the nomination procedure, eligibility, and supporting documentation can be obtained at: <http://www.efce.info/ExcellenceAwardProcessIntensification.html>

The Award is generously sponsored by Microinnova Engineering GmbH.



Microinnova Engineering GmbH designs efficient chemical synthesis and separation processes by means of process intensification and flow chemistry.

As specialist of innovative process technology Microinnova offers customers continuous manufacturing with an end-to-end solution ranging from syntheses over work up to liquid formulation.

The product portfolio ranges from process development to production plant solutions in tons-per-hour scale. Microinnova has a special focus on modular plant technology.



Carl Wagner Medal of Excellence in Electrochemical Engineering 2023

The **Carl Wagner Medal of Excellence in Electrochemical Engineering** is awarded every three years by the Working Party on Electrochemical Engineering (WPEE; website: https://efce.info/WP_EE.html) 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 2023 the medal will be presented at the 13th European Symposium on Electrochemical Engineering – 13th ESEE (Symposium website: <https://13thesee2023.sciencesconf.org/>), to be held in Toulouse, France, on 26-29 June 2023, where the recipient of the medal will be invited to give a lecture. The award also comprises a cash prize, a certificate, and a travel grant to attend the 13th ESEE.

Nominations for the medal, with supporting documentation (letter of support of the nomination by a senior electrochemist or electrochemical engineer, curriculum vitae of the nominee, list of publications and other relevant activities) should be sent to claudia.weidlich@dechema.de and/or francois.lapicque@univ-lorraine.fr

**Deadline for submission of nominations:
30 January 2023**

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>.

The Award is generously sponsored by thyssenkrupp nucera.



thyssenkrupp nucera offers world-leading technologies for high-efficiency electrolysis plants. The company has extensive in-depth knowledge in the engineering, procurement, and construction of electrochemical plants and a strong

track record of more than 600 projects with a total rating of over 10 gigawatts already successfully installed. With its water electrolysis technology to produce green hydrogen, the company offers an innovative solution on an industrial scale for green value chains and an industry fueled by clean energy – a major step towards a climate-neutrality. See www.thyssenkrupp-nucera.com

EFCE Process Intensification Award for Industrial Innovation 2023

The European Federation of Chemical Engineering (EFCE) and its Working Party on Process Intensification (https://www.efce.info/WP_PI) are pleased to announce the **2023 EFCE Process Intensification Award for Industrial Innovation** to be awarded for an outstanding industrial application in the field of process intensification.

The award comprises of a dedicated plaque and certificate, and the successful candidate or team will be invited to make a presentation at a special session during the 8th European Process Intensification Conference -EPIC 8 (Conference website: <https://epic2023.pw.edu.pl>), which will be held in Warsaw, Poland, on 31 May - 2 June 2023. Any employee or a team of employees of a company with operations in an EFCE Member Country is eligible for nomination.

The nominated industrial innovation must be either stage of pilot-scale or full-scale industrial operation and it must have been implemented between 1 January 2019 and 31 December 2022.

The deadline for submission of nominations is 28 February 2023.

For further information about the nomination

procedure, eligibility, and supporting documentation, visit: https://www.efce.info/PI_Award_Industrial_Innovation.html

The Award is generously sponsored by the European Process Intensification Centre – EUROPIC.



europic
european
process
intensification
centre

EUROPIC's mission is to support its members by structurally addressing the global trends and challenges facing the process/chemical industry by accelerating knowledge and technology transfer in the field of process Intensification (PI) and its application in the real world. EUROPIC's products and services are inextricably linked with tackling specific global challenges such as: sustainability, digitalisation, manufacturing of new advanced

materials and modularization. It is a unique industry-driven platform set up in 2009 by a coalition of major European businesses. See <https://europic-centre.eu/>

Alvin and Helen Nienow Lifetime Recognition Award in Mixing 2023

The European Federation of Chemical Engineering (EFCE) and its Working Party on Mixing (https://www.efce.info/WP_Mixing) are pleased to present the calls for nominations for the **2023 Alvin and Helen Nienow Lifetime Recognition Award in Mixing**.

Established in 2000, the Lifetime Recognition Award is presented to a senior researcher or industrial engineer belonging to one of the EFCE member countries in recognition of his/her outstanding contribution to mixing research and practice throughout his/her career. Previous Award winners were John Smith (2000), Alvin Nienow (2003), John Bourne and Ivan Fort (2006), Joël Bertrand (2009) Franco Magelli (2012), Harry van den Akker (2015), Michael Yianneskis (2018), and Alberto Brucato & Matthias Kraume (2021).

The award consists of a certificate, a cash prize of 1,000 EUR, and an invitation to the 17th European Conference on Mixing to be held in Porto, Portugal on 2-5 July 2023 (conference website: <http://mixing17.eu/>).

Nominations must be submitted by members of a national or regional member association of EFCE.

Closing date for nominations: 1 March 2023

For further information about the nomination procedure, eligibility, supporting documentation, etc., please refer to the EFCE website at: https://efce.info/Alvin_and_Helen_Nienow_LifetimeRecognitionAward_Mixing

The Award is generously sponsored by Alvin and Helen Nienow.

Professor Alvin W Nienow, DSc, FIChemE, FREng was a member of the Organizing Committee of the First European Mixing Conference in 1974. Since that time, he has been on the Organizing or Scientific Committee and contributed technically to the Conference series and to mixing research and practice as such. He was also a winner of the 2nd LRA in 2003 when it was sponsored by Ekato. He and his wife Helen count many people in Europe and world-wide working in mixing as their friends. Alvin and Helen are sponsoring this prize starting from the 2021 edition in recognition of the contribution that mixing in general and the European mixing community in particular has made to enhance the quality of their lives.

Young Researcher Award in Mixing 2023

The European Federation of Chemical Engineering (EFCE) and its Working Party on Mixing (https://www.efce.info/WP_Mixing) are pleased to present the calls for nominations for the **2023 Young Researcher Award in Mixing**.

The Young Researcher Award was established in 2000 to recognise the work of a young researcher in his/her early career, which demonstrates an outstanding contribution to re-search and/or practice in mixing.

Previous Award winners are Giorgio Micale (2000), Joëlle Aubin (2003), Giuseppina Montante (2006), Andrea Ducci (2009), Sebastian Maaß (2012), Claudio Antonio Pereira da Fonte (2015), Federico Alberini (2018), and Lena Hohl & Francesco Maluta (2021).

The award consists of a certificate, a cash prize of 1,500 EUR, and an invitation to the 17th European Conference on Mixing to be held in Porto, Portugal on 2-5 July 2023 (Conference website: <http://mixing17.eu/>).

Any young researcher (less than 35 years old) who has completed his/her PhD in the field of mixing at a European university and is currently active in the mixing research is eligible for nomination.

Closing date for nominations: 1 March 2023

For further information about the nomination procedure, eligibility, supporting documentation, etc., please refer to the EFCE website at: https://www.efce.info/YoungResearcherAward_Mixing.

The Award is generously sponsored by EKATO.

EKATO *In the past 85 years EKATO has developed to world market leader in stirring and mixing technology for all process-oriented industries.*

The EKATO GROUP companies offer optimized mixing technology, from molecular, robust and rapidly available industrial agitators over industrial solutions for reactor agitators on sophisticated mixing processes up to complete process plants including automation.

EKATO has been family-owned since its foundation in 1933 and is represented worldwide with subsidiaries in Europe, Asia, Australia, South America, South Africa and the USA as well as a network of trading partners. At the state-of-the-art research and development center in Schopfheim, EKATO offers engineering services from process development to process optimization to make customer processes and mixing procedures more reliable and efficient.

Still open for applications: Student Mobility Award 2023

The European Federation of Chemical Engineering (EFCE) is pleased to announce its prestigious **Student Mobility Award**.

The prizes will be awarded at ECCE14 & ECAB7 (website: <http://www.ecce-ecab2023.eu/>) in Berlin, Germany, from 17 to 21 September 2023.

Deadline for submission of applications: 1 March 2023.

For details on the application procedure, supporting documentation and download of the application form, please visit the EFCE website at: https://www.efce.info/Student_Mobility_Award.html

Be inspired! Watch the video at <https://youtu.be/Jyq3sh9foXY>

The 2023 EFCE Student Mobility Award is generously sponsored by BASF SE.



At BASF, we create chemistry for a sustainable future. BASF combines economic success with environmental protection and social responsibility. By 2030 we target a reduction of our greenhouse gas emissions by 25 percent compared with 2018 and net zero emissions globally by 2050. Around 111,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €78.6 billion in 2021. Further information at www.basf.com

Excellence Award Winners

Excellence Award in Fluid Separations presented for innovative contribution to tray efficiency optimization



Dr. Vineet Vishwakarma (Pictured left presenting his Award lecture) is the winner of the 2022 EFCE Excellence Award in Fluid Separations. His thesis on "Experimental and numerical investigations for an advanced modelling of two phase flow and mass transfer on column trays", completed at TU Dresden, Germany, under

the supervision of Professor Dr. Uwe Hampel, was unanimously selected by the international jury as the best submission. The jury described the candidate's thesis as outstanding, showing a balanced mix of experimental and theoretical work and also praised the author's solid publication track record.

Distillation is the leading thermal separation technology that is carried out in millions of tray columns operating globally. Despite being the biggest energy consumers and the largest single investments in separation industry, these columns will remain in service in the future due to unavailability of any industrially viable alternative. However, rising energy costs and the climate emergency drive the need to urgently improve the efficiency of separation processes globally. In his thesis, Vineet Vishwakarma addresses a derivation and validation of an improved predictive model for calculating tray efficiencies at typical operating conditions for distillation and absorption/desorption

columns. The flow conditions and the residence time distribution of the gas and liquid flow on the trays were characterised both in theoretical models and experiments. Vineet Vishwakarma built a unique advanced measurement device and applied advanced modelling to phenomena he observed experimentally. The custom-built devices enabled him to measure phenomena that are difficult to measure and to develop an improved and reliable experimental and numerical methodology for estimating tray efficiencies.

Nominating him for the Award, Prof. Hampel wrote: "The contribution work is truly outstanding, considering the experimental analysis and the model development. The model is a clear improvement and has the potential to significantly improve tray design in the future (also by combining it with CFD)."

The award was presented on 21 September 2022 at the 12th International Conference on Distillation and Absorption (conference website: <http://da2022.org/en/index.html>) held in Toulouse, France, on 18-21 September 2022.

Vineet Vishwakarma obtained his Bachelor of Engineering in Mechanical Engineering from the Yeshwantrao Chavan College of Engineering, Nagpur, India, and his Master of Technology in Nuclear Engineering and Technology from the Indian Institute of Technology, Kanpur, India. He then moved to Germany where he obtained his PhD from TU Dresden, followed by the position of Postdoctoral Research Associate at the Helmholtz-Zentrum Dresden-Rossendorf. Since June 2022, he holds the position of Postdoctoral Research Fellow at the University of Michigan, Ann Arbor, USA.

The 2022 Excellence Award in Fluid Separations is generously sponsored by Evonik Industries AG.



L-R: Armin Rex (Evonik), Vineet Vishwakarma, Harry Kooijman (Working Party Chair)



Evonik is one of the world leaders in specialty chemicals.

The company

is active in more than 100 countries around the world and generated sales of €13.1 billion and an operating profit (adjusted EBITDA) of €2.15 billion in 2019. Evonik goes far beyond chemistry to create innovative, profitable and sustainable solutions for customers. More than 32,000 employees work together for a common purpose: We want to improve life, today and tomorrow.

EFCE Excellence Award granted for enhanced understanding of the dynamic flow of particulate solids



Dr. Marvellous J. Khala has been named as the winner of the 2022 EFCE Excellence Award in Mechanics of Particulate Solids for his PhD thesis "*Characterising Powder Flow in Dynamic Processes*", completed at the University of Surrey, United Kingdom, under the supervision of Dr. Colin Hare.

He achieved the best evaluation results in terms of the technical quality of the thesis, scientific impact and industrial relevance, innovation, dissemination of results, and clarity of the extended abstract.

The award jury especially recognised that the experimental and theoretical results of his PhD work extend the established characterisation methods and models of particle mechanics and contribute significantly to new knowledge in particle technology.

Flow inconsistency of powders is a major problem in industrial processes, which often leads to product wastage and economical losses. There are many techniques for characterising powder flowability. However, they cannot always be used to predict the in-process flow behaviour of a powder as the data is not always relevant to the process conditions. In his work, Marvellous Khala applied extensive experimental characterisation and DEM simulations of particle mechanics to describe the flow behaviour. He developed new dynamic models for the flow behaviour of particulate materials and showed how the rheological parameters depend on the velocity. He considered models based on physical contact models according to the particle material behaviour and measured the micro parameters for these models. The performed DEM simulations were validated experimentally.

Marvellous's thesis contributed significantly to predicting macroscopic friction and viscosity of powder beds in the intermediate regime, to developing and validating a velocity-dependent friction model. Furthermore, it helped to explain the contrasting mechanisms of mixing/segregation in cohesive and non-cohesive systems and to predict mixing performance based on particle size and surface energy information and the energy input.

Recommending him for the Award, Professor Chuan-Yu (Charley) Wu said: "Throughout his PhD study, he showed exceptional creativity, critical thinking and a hard-working attitude in scientific research. His PhD research was firmly underpinned by an extensive literature review and well identified knowledge gap in the literature. Moreover, he constantly demonstrated his outstanding capabilities in taking initiatives and motivation in exploring new research questions."

Marvellous Khala obtained his MEng in Chemical Engineering from the University of Sheffield, United Kingdom, and PhD degree in Chemical and Process Engineering from the University of Surrey, United Kingdom, followed by a Research Fellowship at the same university. From February to June 2022, he was Research Associate at Newcastle University, United Kingdom. Since July 2022 he holds a position of System Modelling and Simulations Expert at GlaxoSmithKline in Stevenage, United Kingdom.

The winner of the 2022 Excellence Award on Mechanics of Particulate Solids was presented by the Chair of the Working Party on Mechanics of Particulate Solids, Professor Diego Barletta, (Working Party website: https://efce.info/WP_MPS.html) together with Dr. Liz Del Cid, representing the sponsor Jenike & Johanson, during the opening ceremony of the **9th World Congress of Particle Technology** (<https://wcpt9.org/>) on 19 September 2022. Dr. Marvellous Khala sent a video message to express his thanks on receiving the prestigious Award. Moreover, the same day Dr. Khala presented his work in an online talk during the parallel session Mechanics of Particulate Solids I.

Acknowledgements Marvellous Khala

The Award is generously sponsored by Jenike & Johanson Inc.



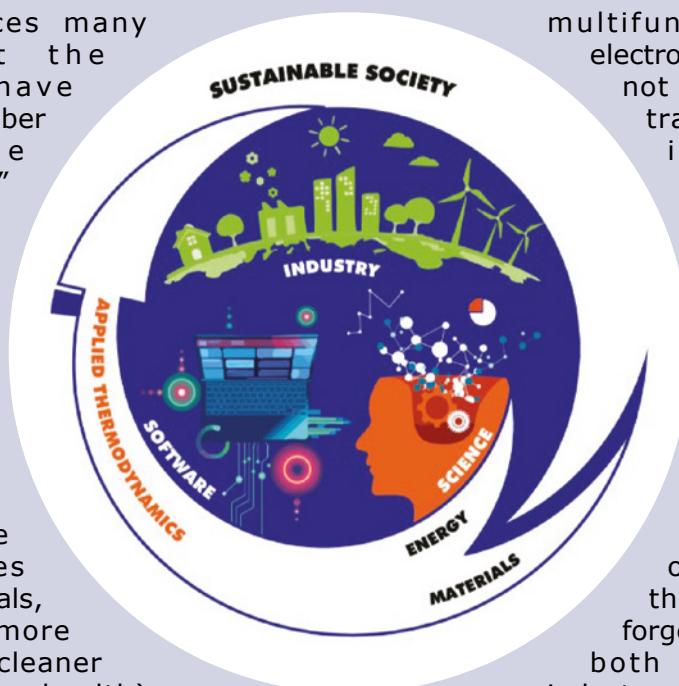
Jenike & Johanson, Inc., is the world leading technology company for bulk material handling, processing, and storage. They deliver engineered solutions to achieve reliable powder and bulk solids flow based on proven theories and decades of project experience. With their skilled, highly technical team of experts and industry-leading innovations, they have successfully delivered bulk material engineering solutions for over 55 years. Bulk materials and their flow properties

are at the core of Jenike & Johanson's work. Clients are offered maximum flexibility in selecting services required to meet their bulk material handling needs. Jenike & Johanson does not follow the "one size fits all" concept - which can be a dangerous pitfall in engineering. Decisions made during the feasibility and engineering stages of a project are critically important for its success. If bulk solids systems are not engineered from the outset to handle the unique characteristics of the materials, process start-up time can be significantly delayed and design capacity may never be reached.

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Applied Thermodynamics in response to the Grand Challenges and Transitions

Mankind today faces many challenges that the United Nations have summarized in a number of "Sustainable Development Goals" (SDG). In order to attain these goals, the engineering community will be strongly solicited, and in particular the chemical engineering community, because many challenges are related to the change in resources (energy or raw materials, including recycle), more adequate products (cleaner water, better food, or health) and improved efficiency of the manufacturing process. The EFCE Working Party on Thermodynamics and Transport Properties has recently published an **opinion paper** that suggests some key directions for further Research and Development based on these SDG. Many challenges appear related to the properties of new materials and their energy content for which an increased understanding of the thermodynamic concepts will become essential. Examples range from complex



multifunctional material to electrolytes or nano materials, not forgetting the energy transition that requires improved efficiency, energy conversion and storage. For this purpose, there is a continuous need for high quality data (which is a real issue considering that several experienced labs have closed in the last decade), but also for predictive modelling tools, both on the nano-scale as on the macro-scale, not to forget expert professionals, both in academia as in industry who are able to assess these challenges and channel the work force in the most appropriate direction. All of these issues are discussed in some details and concern all chemical engineering professionals. We therefore warmly encourage reading and communicating this open-access document.

See: <https://pubs.acs.org/doi/10.1021/acs.iecr.2c01906>.

On behalf of the Thermodynamic and Transport Properties Working Party

Working Party and Section News in Brief

Change of chairmanship – section on energy

At their recent business meeting on 6 October 2022, the Section on Energy elected **Professor Valerio Cozzani**, University of Bologna, Italy, and **Dr. Jan Verstraete**, IFP Energies Nouvelles, France, as the new co-Chairs of the Section. They succeed Prof. Francois Maréchal and Prof. Fabrizio Bezzo, the first co-Chairs of the Section who held the position for almost six years.

WP Education Survey Digitalisation

Engineering ethics good practice exchange: WPE questionnaire

The rapidly evolving chemical engineering (CE) practice led to a number of professional competencies gaining more prominence in various accreditation requirements. Engineering ethics is particularly challenging for the education community to effectively implement in the existing curricula. EFCE Working Party on Education wishes to support the educators by creating a 'good practice for sharing' resource. Thus, we would like to find out what approaches are used in your institution to support important ethical considerations in the curriculum.

[GO TO QUESTIONNAIRE](#)

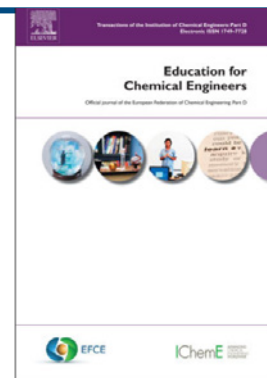
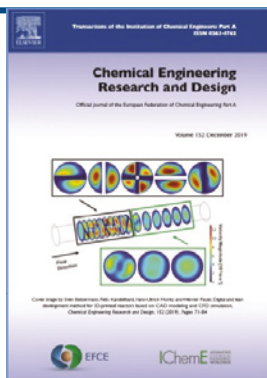
All your responses will be treated in confidence, and we will share all the outcomes through the WPE website. We are also happy to discuss these topics with you individually, if you wish to provide your contact details. This short questionnaire should take no more than 10-15 min of your time.

Awards in Static Electricity in industry presented

The Working Party on Static Electricity in Industry wishes to announce the following awards delivered at the Electrostatics 2022 conference:

- **Helmut Krämer Award** was delivered to **Dr. Paul Holdstock** for distinguished achievements in the science and engineering of electrostatics, developing safe technologies, innovative uses and applications. Dr. Holdstock delivered the Helmut Krämer Memorial Lecture.
- **Stig Lundquist Award** was delivered to **Dr. Jeremy Smallwood** for recognition of dedicated service and notable contributions to the advancement of the field of atmospheric and industrial electrostatics as a researcher and teacher. Dr. Smallwood delivered the Stig Lundquist Award Memorial Lecture.
- **International Fellow Award** for recognition of dedicated service and notable contributions to the advancement of the field of industrial electrostatics was delivered to **Professor Daniel Lacks, Professor Roman Cimbala** and **Dr. Poupak Mehrani**.
- **Günter Lüttgens Young Scientist Award** for delivering a presentation of high quality at the International Conference on Electrostatics and making notable contributions in the field of industrial electrostatics was delivered to **Pol Fontanes, Connor Williamson, Norhafezaidi Mat Saman** and **Artur Marchewicz**.





News about the official EFCE journals

For the latest updates on published papers, freely available content and editor and author interviews please follow the journals on Twitter:

NEW Sustainable Production and Consumption

<https://twitter.com/SustProdCons>

Chemical Engineering Research and Design

<https://twitter.com/ChemEngResDes>

Digital Chemical Engineering

<https://twitter.com/DChEJournal>

Carbon Capture Science & Technology

<https://twitter.com/CCSTJournal>

Education for Chemical Engineers

<https://twitter.com/ECEJournal>

Process Safety and Environmental Protection

<https://twitter.com/PSEPJournal>

Food and Bioproducts Processing

<https://twitter.com/FBPJournal>

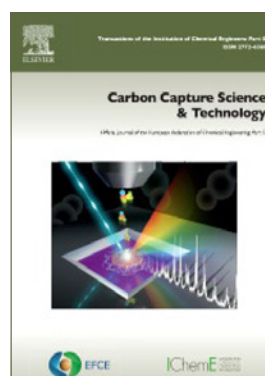
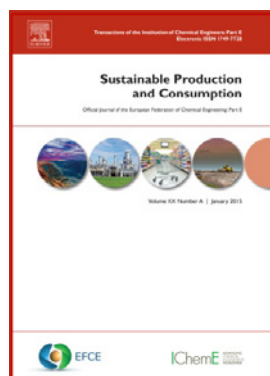


Chemical Engineering Research and Design publishes a special issue to celebrate IChemE's centenary

This special issue features invited perspective articles looking at how the core subject areas of the journal have evolved and what is expected for the future. All articles are free to read at: <https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/special-issue/10QRQR0JV67>

Read journal papers for free

The following articles / issues are set for free access periods. In addition to these, articles that are published via the open access route in the journal are also freely available to all. These are identified in ScienceDirect by a green dot. It is possible sign up to an RSS alert specifically to inform when a new open access article is



published in the journal – see individual journal pages to set this up.

Chemical Engineering Research and Design

<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design>

Freely available content:

- **NEW** January 2023 issue (Volume 189)
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/vol/189/suppl/C>
- **NEW** 100 years of IChemE
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/special-issue/10QRQR0JV67>
- **NEW** Intelligent Green Oil and Gas Engineering
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/special-issue/103K9002JMT>
- **NEW** Emerging Stars
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/special-issue/107XHL7S4S2>
- Women in Chemical Engineering
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/special-issue/100DXCW7KVH>

Process Safety and Environmental Protection

<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection>

Freely available content:

- **NEW** January 2023 issue (volume 169)
<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/vol/169/suppl/C>
- **NEW** Challenges in Environmental Science and Engineering
<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/special-issue/109CDNH3NZL>
- **NEW** Recent Advances in the Thermochemical Transformation of Biomass to Bio-oil, Biochar and Syngas and its Upgrading Methods

<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/special-issue/10J68QW5V30>

- Safety and Risk Analysis in Digitalized Process Operations
<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/special-issue/10VRBQ33277>

Food and Bioproducts Processing

<https://www.sciencedirect.com/journal/food-and-bioproducts-processing>

Freely available content:

- **NEW** January 2023 issue (Volume 137)
<https://www.sciencedirect.com/journal/food-and-bioproducts-processing/vol/137/suppl/C>

Education for Chemical Engineers

<https://www.sciencedirect.com/journal/education-for-chemical-engineers>

Freely available content:

- **NEW** January 2023 issue (Volume 42)
<https://www.sciencedirect.com/journal/education-for-chemical-engineers/vol/42/suppl/C>

Sustainable Production and Consumption

<https://www.sciencedirect.com/journal/sustainable-production-and-consumption>

Freely available content:

- **NEW** January 2023 issue (Volume 35)
<https://www.sciencedirect.com/journal/sustainable-production-and-consumption/vol/35/suppl/C>

Digital Chemical Engineering

Gold Open Access – APC (Author Processing Charge) fully waived on all submissions received before 29 May 2023

Freely available content:

- **NEW** All content freely available at:
<https://www.sciencedirect.com/journal/digital-chemical-engineering>
- **NEW** Special Issue - Machine Learning for Chemical Processes
<https://www.sciencedirect.com/journal/>

[digital-chemical-engineering/special-issue/10JTPTKD9LS](https://www.sciencedirect.com/journal/digital-chemical-engineering/special-issue/10JTPTKD9LS)

Carbon Capture Science & Technology **Gold Open Access – APC (Author Processing Charge) fully waived on all submissions received before 30 June 2023**

Freely available content:

- **NEW** All content freely available at:
<https://www.sciencedirect.com/journal/carbon-capture-science-and-technology>

Invitation to submit papers

We have a number of special issues planned that are currently open for submission. Submissions from all welcome! If you require any further information then please contact Managing Editor Catherine Cliffe ccliffe@icheme.org

Details as follows:

Chemical Engineering Research and Design

<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/about/call-for-papers>

NEW Special Issue: Heterogeneous Catalysts for Sustainable Energy Production and Environmental Applications (Manuscript submission deadline **31 May 2023**)

Special Issue: Novel emerging reactive-based technologies in Unit Operations for process intensification (Manuscript submission deadline **31 December 2022**)

Process Safety and Environmental Protection

<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/about/call-for-papers>

Special issue: Advanced Techniques in Leachate Management (Manuscript submission deadline **31 December 2022**)

Special Issue: Physics-based machine learning application to process safety (Manuscript submission deadline **28 February 2023**)

Special issue: Resilience Assessment and Management (Manuscript submission deadline **31 March 2023**)

Education for Chemical Engineers

<https://www.sciencedirect.com/journal/education-for-chemical-engineers/about/call-for-papers>

Special issue: Latest pedagogical developments in chemical engineering education in Latin America: innovative approaches inside and outside the classroom (Manuscript submission deadline **31 December 2022**)

Sustainable Production and Consumption

<https://www.sciencedirect.com/journal/sustainable-production-and-consumption/about/call-for-papers>

NEW Special issue: Responding to the climate emergency: metrics and tools for rational action (Manuscript submission deadline **30 June 2023**)

Special issue: The Road to Net-Zero: Transition Challenges and Solutions (Manuscript submission deadline **31 December 2022**)

Digital Chemical Engineering

<https://www.sciencedirect.com/journal/digital-chemical-engineering/about/call-for-papers>

Special issue: AI for intelligent decision making of process and energy systems (Manuscript submission deadline **28 February 2023**)

Special issue: Autonomy, Safety, and Security for Cyber-Physical Systems in the Process Industries (Manuscript submission deadline **31 January 2023**)

Carbon Capture Science & Technology

<https://www.sciencedirect.com/journal/carbon-capture-science-and-technology/about/call-for-papers>

NEW Special issue: Accounts of Carbon Capture Research (Manuscript submission deadline **30 April 2023**)

Special issue: Biomass-related Carbon Capture (Manuscript submission deadline **31 March 2023**)

Events organised by or on behalf of EFCE in 2023

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

VIII International Congress "Engineering, Environment and Materials in Process Industry 20–23 March 2023, Mountain of Jahorina, Bosnia and Herzegovina (EFCE Event No. 789)

The biannual event, organised by the Faculty of Technology Zvornik, traditionally combines great scientific content with stimulating lectures, networking opportunities and rich social programme. The purpose of the event is to discuss the current issues of the processing industry in a comprehensive and multidisciplinary manner, concerning sustainable development and environment protection. The congress seeks to provide a platform for researchers, scholars, PhD students and engineers working in the field of chemical engineering and technology, food engineering, environmental engineering, materials, chemistry, and biochemistry, which would allow a discussion of fundamental and applied research and facilitate international communication and collaboration between academia and industry.

Topics: Chemical and Electrochemical Engineering; Food Engineering and Biotechnology; Environmental Engineering; Materials and Material Characterization; Nanotechnology; Inorganic Chemistry and Technology; Organic Chemistry and Technology, Polymers; Plasma Technology; Energy Efficiency and Renewable Energy Sources; Textile Engineering; Corrosion and Protection of Materials and Thermal Power Plants; Metallurgy; Management in the Process Industry; General Sections.

An outstanding line up of invited speakers will be assembled to present their latest research.

The call for papers is open. Deadline for abstract submission: 31 January 2023

Website: <https://eem.tfzv.ues.rs.ba/>

15th Mediterranean Congress of Chemical Engineering - MECCE Barcelona, Spain, 29 May – 2 June 2023 (EFCE Event No. 788)

The MECCE is organised by the SEQUI (SOCIEDAD ESPAÑOLA DE QUIMICA INDUSTRIAL E INGENIERIA QUIMICA) in conjunction with Expoquimia 2023 (<http://www.expoquimia.com/en/home>).

This 2023 congress is a great opportunity to implement the entire 2030 Agenda from science and its power of transfer. In addition, the special times in which we are involved mean that society, companies, and professionals need to obtain more real answers to the challenges we face in terms of digitalization, energy, decarbonization, circularity, new materials, and new surfaces. Considering, of course, all Chemical Engineering topics like Unit Operations and Separation Processes, Chemical Reaction Engineering, Process Systems Engineering, Product Engineering, Applied Biotechnology, Safety, Health and Environment, or Chemical Engineering Solutions to Global Societal Challenges. The differential great value of this congress is that it unites science and industry, being a bridge for the scientific and business communities to come together in an incomparable setting.

Innovations, solutions, discussions, and challenges will make up this edition of the chemical engineering congress.

The topic matrix is available at: <https://www.mecce.org/index.php/programme>

The call for papers is open. Deadline for abstract submission: 31 January 2023

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

8th European Process Intensification Conference – EPIC 8 Warsaw, Poland, 31 May – 2 June 2023 (EFCE Event No. 795)

EPIC2023 is organised by Warsaw University of Technology, Faculty of Chemical and Process Engineering in cooperation with the EFCE Working Party on Process Intensification.

In the coming decades, the chemical process industry will play a critical role in addressing grand societal challenges related to sustainability, human health or availability of food and clean

water. The necessary transition of the chemical sector to address those challenges will include, among other things, decarbonisation, the use of renewable energy and raw materials in manufacturing processes and the circular economy. Process intensification presents a critical element of that transition.

The 8th European Process Intensification Conference will present an excellent opportunity to learn about recent implementations of PI in industry, the latest advances in research, and new developments at technology providers. Furthermore, discussions on the state of the art and future perspectives of process intensification will keep you updated on future trends. Authors presenting at EPIC 2023 will be invited to publish their works in Special Issues of the refereed journals: *Chemical Engineering and Processing: Process Intensification* (CEP:PI – Elsevier) and *Chemical and Process Engineering: New Frontiers* (Polish Academy of Sciences).

Topics: Batch to Continuous and Flow Chemistry-Based Processes; Microreactors and microfluidics; Intensified Activation, Mass and Heat Transfer; PI in Electricity- and Solar Energy-Based Manufacturing; Multifunctional Reactors and Hybrid Separations; Intensified Reactors for Energy and Environmental Applications; PI in Solids Processing; PI in Manufacturing of Advanced Materials; Advanced Materials for Process Intensification; Novel Process and Equipment Concepts; Dynamics and Control of Intensified Processes; PI and Digitalization; PI in Retrofitting; New Industrial Applications.

Plenary speakers: Prodromos Dapoutidis (University of Minnesota); Manfred Nagel (Evonik Industries AG); Enrico Tronconi (Politecnico di Milano); Tom van Gerven (KU Leuven); Mirko Skiborowski (Hamburg University of Technology).

The call for papers is open. Deadline for abstract submission: 15 January 2023

Website: <https://epic2023.pw.edu.pl>

11th World Congress of Chemical Engineering - WCCE11 **Buenos Aires, Argentina, 4–8 June 2023**

Motto: The global chemical engineering working for a better future world

WCCE11 is organized by the Argentinian Association of Chemical Engineers and is promoted and supported by the World Chemical Engineering Council (WCEC) and the Inter-

American Confederation of Chemical Engineering.

This Congress will take place in conjunction with the XXX INTERAMERICAN CONGRESS OF CHEMICAL ENGINEERING, the 2nd IBEROAMERICAN CONGRESS OF CHEMICAL ENGINEERING (CIBIQ 2023), and the ARGENTINIAN CONGRESS OF CHEMICAL ENGINEERING (CAIQ 2023).

The Congress aims to provide a platform for researchers, engineers, academicians, and industrial professionals to present their research results and development activities in Chemical Engineering. At the same time, it is a great opportunity for all the delegates to exchange new ideas and application experiences, establish business and research connections and find global partners for future cooperation.

The main topic of the Congress is “The global chemical engineering working for a better future world”. The fundamental areas of Chemical Engineering will be exposed and discussed, covering the issues constituting its essential core.

Topics: Chemical Engineering Science; Chemical Reaction Engineering and Catalysis; Process Systems Engineering; Biotechnology, Bio-economy, Bio-industry; Food Engineering ; Renewable and Non-renewable Energy; Materials and Nanotechnology; Process Industries, Innovative Processes and Process Intensification; Industry 4.0 Smart factory, Big data; Education in Chemical Engineering; Process Safety; Sustainability and Environment; Business and Project management. There will also be various co-located Joint Events and a Special Event on Process Systems Engineering (PSE) Methods and Tools.

Website: <https://www.wcce11.org/>

33rd European Symposium on Computer-Aided Process Engineering (ESCAPE-33) **Athens, Greece, 18-21 June 2023** **(EFCE Event No. 794)**

The ESCAPE-33 event is organized under the auspices of the [European Federation of Chemical Engineering](#), its [CAPE Working Party](#) (CAPE-WP), the [Technical Chamber of Greece](#), the Pan Hellenic Association of Chemical Engineers, and the [National Technical University of Athens](#). ESCAPE-33 will host free training sessions in data modelling, simulation and commercial optimization software for conference participants

The scientific program will include plenary and

invited presentations, as well as oral and poster presentations

Special awards and winners are reserved for the best papers and posters of the conference. Each award consists of certificate and cash prizes.

The program will introduce a new EFCE Award in Process Systems Engineering in collaboration with the AIChE.

The program will include a Special Session to honor the legacy of late Prof. Christodoulos Floudas

Topics: Modelling and optimization for multi-scale integration; Control, scheduling, and operability at the process and enterprise-level; Safe and sustainable products by design; Green and sustainable processes for the circular economy; Systems methods in industrial biotechnology and biomedical applications; Multi-scale energy systems engineering (organized by the EFCE energy section); Sustainable supply chains and ecosystems; Education and knowledge transfer.

Register now! Deadline for early bird registration: 23 March 2023

Website: <https://escape33-ath.gr/>

13th European Symposium on Electrochemical Engineering – 13thESEE2023 Toulouse, France, 26–29 June 2023 (EFCE Event No. 793).

The 13th ESEE 2023 is organised by the Université de Toulouse III Paul Sabatier, Laboratoire de Génie Chimique in cooperation with the EFCE Working Party on Electrochemical Engineering.

This symposium expects: to enable to you to share the advances of research in the field of the electrochemical engineering and the electrochemistry; to strongly promote fascinating discussions and fruitful exchanges on any electrochemical field, to stimulate the required synergy for the generation of multilateral research collaborations, between academic and/or industrial researchers, junior and/or senior, on any research and/or research and development related to electrochemistry and/or electrochemical processes. The scientific programme will focus on Electrochemical Engineering as the key enabling overcoming current societal problematics: ENERGY - ENVIRONMENT - LIFE...

Topics: New' Challenges: Societal -Economic

-Environmental Impacts, recycling and valorization, life cycle assessment ...; Reduced scale and 3-D electrochemical Engineering; Energy conversion and storage; Electrochemical degradation of wastes-pollution abatement, Water treatment electrochemistry, CO2 electromanagement,...; All areas of electrosyntheses, photoelectrochemistry.; Electro-separations; Electrodeposition-Electro-crystallization-Electrochemical machining and applications; Design modelling and simulation of electrochemical devices; New materials for electrochemical reactors and peripherals; Corrosion and Biocorrosion engineering; Industrial problematics - Speakers from industry highly solicited.

The call for papers is open. Deadline: 31 March 2023

Contributions from PhD students are strongly encouraged.

Website:<https://13thesee2023.sciencesconf.org/>

17th European Conference on Mixing Porto, Portugal, 2–5 July 2023 (EFCE Event No. 773)

Mixing 17 is organised by the University of Porto on behalf of the EFCE Working Party on Mixing.

Mixing is at the heart of most chemical processes, and it is generally the cornerstone when moving from lab to industrial processes. The widespread of CFD, and advanced fluid mechanics experimental techniques led to great evolutions on this field of chemical engineering over the last decades. The European Conferences on Mixing have been a privileged forum attracting academics and industrialists from all over the world to discuss progress on mixing technology, research, and applications in the process industries. Mixing 17 will run under the unifying theme **“Mixing as a solution for fundamental problems of modern societies”**.

Topics: Mixing in Turbulent Flows; Mixing in Laminar Flows; Mixing in Multiphase Flows; Mixing and Complex Rheology; Mixing Reactive Systems and Product Development; Mixing Equipment and Technology; Mixing Modelling, Simulation and Theory; Mixing in Biotechnology Applications.

The call for papers is open. Deadline for abstract submission: 21 December 2022

Website: <http://mixing17.eu>

8th European Drying Conference – EuroDrying `2023
Łódź, Poland, 4–7 July 2023 (EFCE Event No. 791)

The Lodz University of Technology, Poznan University of Technology and EFCE Working Party on Drying are proud to invite you to the 8th European Drying Conference in Łódź, Poland.

Welcome to the fascinating city of four cultures in which technology is intertwined with culture and modernity with history. In Łódź, the city of manufacturers, everyone will find something for themselves.

Topics: Fundamentals, modelling and simulation; Physical properties and product quality; Industrial processes and equipment; Measurement and process control; Environmental issues; Process intensification; Drying of gases and liquids; Drying of powdered solids; Drying of biomass for energy applications; Drying of food and agricultural materials; Drying of biological and pharmaceutical materials; Drying of chemicals and polymers; Drying of wood, pulp and paper and forest products.

The call for papers is open. Deadline for abstract submission: 10 December 2022

Authors are invited to submit an abstract with a maximum of 150 words in English. The work must be original and unpublished and not under review in any other conference or journal. In addition, after receiving a recommendation by the Scientific Committee, conference participants will have the opportunity to publish selected papers in Special Issue of Drying Technology journal.

Website: <https://www.eurodrying2023.p.lodz.pl/>

ECCE14 & ECAB8 - 14th European Congress of Chemical Engineering & 7th European Congress of Applied Biotechnology
Berlin, Germany,
17-21 September 2023
(EFCE Event No. 782)

Chemical and Biochemical Engineering Acting Together is the general theme reflecting that today's global challenges demand the joint efforts of the chemical and biochemical engineering communities. ECCE&ECAB2023 will showcase

Save the date!

2nd International Conference on ENERGY, ENVIRONMENT & DIGITAL TRANSITION
Palermo, Italy, 22–25 October 2023 (EFCE Event No. 797)

The call for papers is open. Deadline for abstract submission: December 20, 2022

Website: <https://www.aidic.it/e2dt2023/>

cutting-edge solutions: sustainable processes and products, new materials, solutions for energy storage, novel therapeutics and other most urgently needed innovations.

Topics: A Green Deal – a common task for chemical and biochemical engineers (A1. Climate and energy / A2. Sustainability and circular (bio) economy / A3. Water / A4. Food in the focus / A5. Wastes); B Chemical and Biochemical Engineering in Medicine (B1. Bioprocess Engineering: Technologies for new drugs, vaccines, disinfectants and diagnostics / B2. Healthcare and Hygiene / B3. Pharmaceuticals and diagnostics / B4. New materials for medicine); C Acting Together - Biochemical and Chemical Engineering Integration (C1. Advanced technologies in bioproduction.../C2....and biomass processing / C3. Biomaterials, biochemicals and bioproducts); D Matter in Motion (D1. Continuous processes / D2. Process intensification and miniaturisation / D3. Mixing); E Faster and More Selective (E1. Reaction engineering and reaction kinetics / E2. Homogeneous, heterogenous and enzymatic catalysis / E3. Catalytic processes and technologies / E4. Catalytic and biocatalytic reactors); F Solid Matter (F1. Advanced functional materials / F2. Biomaterials (see C3) / F3. Thin films and nanomaterials / F4. Polymers / F5. Characterisation of solids); G Tools and Toolkits for Chemical and biochemical reactors (G1. Transport phenomena, separation / G2. Thermodynamics and diffusion / G4. Electrochemistry and photo-electrochemistry / G5. Computations); H Digital transformation (H1. Digital transformation); I Education / Early career programme (I1 Education of (bio-) chemical engineers / I2. Motivating high school students for STEM courses).

Detailed topics list: <https://ecce-ecab2023.eu/topics>

The call for papers is open. Deadline for submission of abstracts for oral presentations: 15 January 2023

Website: <https://ecce-ecab2023.eu/>



*Merry
Christmas and
a Happy
New Year*

from all at EFCE

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