

European Federation of Chemical Engineering Europäische Föderation für Chemie-Ingenieur-Wesen Fédération Européenne de Génie Chimique

**NEWS AND EVENTS** FEBRUARY 2025



# **Reminder – Call for Papers**

### **15th European Congress of Chemical Engineering (ECCE) & 8th** European Congress of Applied Biotechnology ECAB) and 3rd CIBIQ - Iberoamerican Congress on Chemical Engineering

### 8-10 September 2025, Lisbon, Portugal

The joint ECCE & ECAB conference, organised by EFCE and ESBES, together with the Ordem dos Engenheiros/Colégio de Engenharia and the Portuguese Society of Biotechnology (SPBT), will once again offer a top-class scientific programme on technological solutions to the major challenges of the sustainable development goals (SDGs).

Experts from chemical engineering, biotechnology

and other relevant disciplines are invited to submit abstracts of their R&D for the programme. Contributions ranging from fundamental research to the industrial implementation of technologies are welcome.

This exceptional event will be held in partnership with the 3rd CIBIQ - Iberoamerican Congress on Chemical Engineering, providing a unique

### Dear Readers,

Welcome to the first issue of EFCE News for 2025! In this issue you will find information about the ECCE&ECAB 2025, other recent and upcoming EFCE events, EFCE awards, new EFCE members, EFCE Working Party/Section news and the journal update. If you have any comments/suggestions, please contact us.

With kind regards

Giorgio Veronesi EFCE President

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platform to foster collaboration and innovation within the Ibero-American chemical engineering community.

Core topics: Digital Transition, Artificial Intelligence Applications, Impacts and Implications on Biochemical and Chemical Engineering; Education and Training next Generations (ESBES & EFCE legacy for Climate Neutrality); Energy Transition and Circular (Bio-) Economy; Health and (Bio-)Pharma; Novel Foods and Food Processing; Towards Net Zero and Climate Neutrality; Plus CIBIQ topics. For details, please visit see: https://ecce-ecab2025.eu/ Topics.html

**Plenary Speakers:** Maria da Graça Carvalho, Portuguese Minister for Environment and Energy, Lisbon/P; Lino Dias, Bayer AG, Monheim/D, Emanuele Moioli, Politecnico di Milano/I and Paul Scherrer Institut PSI, Villigen PSI/CH (Early Career Plenary Lecture); Bojana Rosic, University of Twente, Enschede/NL; Danckwerts Lecturer (to be confirmed in May)

The call for papers is still open. Deadline for abstract submission: 3 March 2025

### Submit your abstract here

So don't miss your chance to be part of the outstanding lecture programme and submit your abstract by **3 March**.

Last minute poster submissions are still possible until 15 August.

**Sponsoring and exhibition opportunities:** The exhibition is an integral part of ECCE & ECAB 2025 and offers a unique opportunity to promote your technologies, products and servicesin the broad field of chemical engineering and biotechnology. We offer a range of sponsorship and exhibition options that can be tailored to your requirements and to suit your budget. See **Sponsoring and Exhibition Opportunities** 

**Sponsors:** BASF SE, Fluitec mixing + reaction solutions AG (Silver sponsors); Novo Nordisk, VentilAQUA (Bronze sponsors); BONDALTI, Turismo de Lisboa (further sponsors).

Congress website: https://ecce-ecab2025.eu

### LinkedIn: #EcceEcab25

# EFCE Travel Grant 2025 for ECCE15 & ECAB8:

The EFCE Travel Grant provides support to early career members of EFCE or member societies to enable them to present their work at various EFCE events and to develop important networks to further their careers.

# The call for applications for the Travel Grant of up to 600 EUR is open.

Deadline for submission of applications: June 2025

For eligibility details and the application form, visit the EFCE website at: https://efce.info/EarlyCareerCE.

html#AwardsandGrants



*EFCE President, Giorgio Veronesi (right), and the Chair of the Early Career Section, Sofía García Fracaro (left), present the Travel Grant certificate to the Award winner Damla Yalcin (photo: Early Career Chemical Engineers Section).* 

### **Travel Grant Winners 2024 announced**

EFCE and its Early Career Chemical Engineers Section are pleased to announce that **Damla Yalcin**, Turkey, and **Pratik Nayi**, Taiwan, are the winners of the EFCE Travel Grant 2024.

Damla Yalcin received the grant to join the *EFCE Forum on new Technologies 5th European Forum on New Technologies: Artificial Intelligence in Chemical Engineering*, which took place on 13 December 2024 in Paris, France. The certificate was presented to her on this occasion (see photo).

Pratik Nayi received the grant to attend the **9th European Drying Conference - EuroDrying 2025** (EFCE Event No. 810) which will be held in Wageningen, The Netherlands, on 6-9 July 2025.

The EFCE Travel Grant provides support to early career members of the EFCE Early Career Chemical Engineers Section or member societies to enable them to present their work at various EFCE events and to develop important networks to further their careers.

# **EFCE Awards – Calls for nominations and applications**

### **EFCE Excellence Award in Mechanics of Particulate** Solids 2025

The European Federation of Chemical Engineering and its Working Party on Mechanics of Particulate Solids (https://efce.info/WP\_MPS.html) are pleased to issue an invitation call for nominations for the **2025 Excellence Award in Mechanics of Particulate Solids**. Presented in 2013 for the first time, this triennial award aims to recognise a PhD thesis or associated paper(s) of a researcher or engineer, which demonstrate(s) an outstanding contribution to research and/or practice in Mechanics of Particulate Solids.

The award will be presented at the International Congress on Particle Technology—PARTEC 2025 (https://www.partec.info/en), which will be held in Nuremberg, Germany, from 23 to 25 September 2025. It consists of a certificate, a cash prize worth €1500, a travel grant, and free registration to the conference. The winner will be invited to give a presentation following the award ceremony.

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 nominated PhD thesis or paper(s) must address a topic relevant to the field of Mechanics of Particulate Solids. Only PhD

theses or paper(s) published between May 2022 and March 2025 are eligible for nomination.

### Closing date for nominations: 1 April 2025

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/ExcellenceAwardMPS.html

The award is generously sponsored by Jenike & Johanson Inc. Jenike & Johanson, Inc., is the world's leading company in powder and bulk solids handling, processing, and storage technology. Over the past nearly 60 years, we've tested over 13,000 unique powders and bulk solids and worked on more than 7,500 projects, giving our team the broadest real-world and in-depth experience in the industry to address a wide variety of bulk material handling and engineering needs.



# Still open for nominations/applications

### **2025 Excellence Award in Process Safety**

The triennial Excellence Award in Process Safety recognises a PhD thesis published in the preceding three-year period, which demonstrates an outstanding contribution to research and/or practice in the field.

# Closing date for nominations: 28 February 2025

For further information about the nomination

procedure, eligibility, and supporting documentation and the online submission form visit the EFCE website at https://www.efce.info/ ExcellenceAwardProcessSafety.html

The Excellence Award is generously sponsored by the **European Process Safety Centre – EPSC** and will be presented at Loss Prevention 2025 which will be held in Bologna, Italy, on 6-11 June 2025 (website: https://www.aidic.it/lp2025/).

### **Industrial Innovation Award in Process Intensification 2025**

The call for nominations for the **2025 EFCE Process Intensification Award for Industrial Innovation** to be awarded for an outstanding industrial application in the field of process intensification is still open.

The Award is generously sponsored by the **European Process Intensification Centre – EUROPIC** and 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 9th European Process Intensification Conference -EPIC 9, which will be held in Athens Greece, on 4-6 June 2025. 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 2023 and 31 December 2024.

# The deadline for submission of nominations: 28 February 2025

For further information about the nomination procedure, eligibility, and supporting documentation, visit: https://www.efce.info/ PI\_Award\_Industrial\_Innovation.html

### **EFCE Travel Grant 2025**

The call for applications for the **2025 Travel Grant** of up to 600 EUR each to attend ECCE15 & ECAB8 in Lisbon, Portugal, in September 2025 (see above) is still open.

Deadline for submission of applications: June 2025

For eligibility details and the application form, visit the EFCE website at: https://efce.info/ EarlyCareerCE.html#AwardsandGrants

### **Student Mobility Award 2025**

The call for applications for the prestigious **EFCE Student Mobility Award** is still open

The EFCE Student Mobility Award 2025 will consist of three cash prizes (1<sup>st</sup> Prize: EUR 2,000; 2<sup>nd</sup> Prize: EUR 1,500; 3<sup>rd</sup> Prize: EUR 1,000) and a travel grant to attend the 15th European Congress of Chemical Engineering (ECCE15) (website: https://www.ecce-ecab2025.eu/) in Lisbon, Portugal, from 8 to 10 September 2025 where the award will be presented.

The award is generously sponsored by **Bondalti**.

All students who are citizens of a European country

in which EFCE is represented can apply for the EFCE Student Mobility Award if they have successfully studied for at least one semester ( $\geq$  30 ECTU) in first or second cycle (e.g. bachelor, master) study programmes in chemical engineering in each of two or more different countries.

### Deadline for submission of applications: 1 March 2025

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

### **Working Party and Section News**

### News from the Working Party on Agglomeration - join the 11th International Granulation Workshop Conference

The **11th International Granulation Workshop Conference** will take place from **2-4 July 2025 in Hamburg, Germany**, at the historic Besenbinderhof (website: https://www. sheffield.ac.u agglom/11th-internationalgranulation-workshop-2025). This prestigious conference is part of a renowned series initiated by Prof. Agba Salman from the University of Sheffield. For 2025, Prof. Stefan Heinrich from Hamburg University of Technology, Chair of the Working Party on Agglomeration, has been honored to host this year's event.

The conference will bring together leading experts, academics, and industry professionals to discuss advancements in granulation and agglomeration technologies. Renowned plenary speakers include Prof. Stefan Palzer (Nestlé), Prof. Göran Alderborn (Uppsala University), and Prof. Jim Litster (University of Sheffield), among others. Visit the **Call for Abstracts page** for details.

Registration: 31 May 2025.

Register at the **dedicated registration portal**.

The conference offers unique networking opportunities through its technical sessions, poster exhibitions, and memorable evening events, including a gala dinner at Besenbinderhof and a cruise aboard the MS Louisiana Star.

Sponsorship opportunities are available for organizations aiming to showcase their brand to an international audience. Sponsors can benefit from visibility on the conference website, printed materials, and event spaces. Options include sponsoring poster prizes or securing an exhibitor booth. For details, contact **spe@tuhh.de**.

Don't miss this chance to be part of a global forum shaping the future of granulation technology!

### Key deadlines to note:

Abstract submission: 28 February 2025.

### ESSEE 2025 – European Summer School on Electrochemical Engineering

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The Working Party on Electrochemical Engineering is pleased to announce

the 10th edition of its **European Summer School** on **Electrochemical Engineering (ESSEE)**, organised by the Working Party, AIDIC and the Università degli Studi di Cagliari. This edition will be co-organised with e.INS - Ecosystem of Innovation for Next generation Sardinia.

The event will be held on **22-26 September 2025**, in the beautiful city of **Cagliari, Sardinia**, Italy.

The organisers invite PhD students, young

researchers and professionals interested in Electrochemical technologies to join the Summer School.

ESSE offers the unique opportunity to share knowledge and experience about fundamentals and applications of electricity-based processes for energy transition and decarbonization.

We are looking forward to this worldclass event, a valuable opportunity to favor contacts, to learn from each other, to transfer experience and to preserve existing know-how. Registration will open soon.

Further information: https://aidic.it/ essee2025/index.php

# EFCE Event Report: 5th European Forum on New Technologies – Artificial Intelligence in Chemical Engineering

The 5th European Forum on New Technologies was organised in Paris on 13 December 2024, gathering experts, professionals, and researchers from academia and industry (with about a 50/50 representation academia/industry and no less than 42 companies taking part) to discuss the role of Artificial Intelligence (AI) in Chemical Engineering.

The large attendance of 130 participants coming from 17 countries confirms that AI is a hot topic that concerns many areas of chemical engineering.

The programme which was structured in three sessions followed by a round table held at the end of the day covered different aspects of AI in Chemical Engineering.

# **1** - Overview of artificial intelligence for process engineering

Three talks were given by Mattia Valerio, (Univ. Milano), Mathieu Cura (Optimistik) and Ludovic Montastruc (Univ. Toulouse), and here follow some of their messages to the audience:

AI may help industry to reach climate neutrality by 2050. The main obstacles to the adoption of AI in process manufacturing include challenges related to data collection and structuring, as well as the need for a near real-time data supply. However, many industrial companies have valuable data that remains underutilized and is often only accessible to data scientists. To unlock its full potential, two key steps are needed: extending data-access to the entire workforce, and applying



Welcome by the EFCE Scientific Vice-President, Boelo Schuur



Welcome by the EFCE President, Giorgio Veronesi

advanced analytical tools such as AI and machine learning models.

By harnessing sensor data and using explainable AI techniques, advanced analytics are now becoming more accessible in process engineering, which is necessary to improve processes. However, conservative forces in the industry aim to maintain security instead of more openly exchanging data (internally in the company), which hinders innovation. In addition, sensor reliability remains a major problem, compounded by the slow pace of technological progress in this field over recent decades.

While academia focus on complex predictive models, the industry seeks practical AI solutions for routine issues like simulating technologies, conducting literature reviews, and optimising expenditures. In the near future, AI systems will assist operators and engineers in troubleshooting, drafting, and maintaining technical documents. Digital twins will enable real time experimentation and data analysis. Technologies will advance to create virtual environments from flow sheets, and self-diagnosing and self-optimising processes will also evolve, although widespread implementation will require time.

# 2 - Generative artifi ial intelligence and transformation in process engineering

This session included two presentations done by Artur Schweidtmann (Delft Univ. Tech) and Thibaut Neveux (EDF).

Generative AI has shown potential in tasks as

language translation and automated document correction but current tool such as ChatGPT faces limitations in producing practical outputs for process engineering. To overcome these challenges, collaboration between academia and industry, increased focus on acquiring robust data, the adoption of appropriate model architectures, and the integration of domain knowledge in fields like physics and material science are needed. Hybrid models, combining physical principles with machine learning, offer a workaround by reducing data demands while improving generalization capabilities.

Generative AI excels when models integrate diverse tasks and datasets. For process engineering, multiagent systems could enable large language models to collaborate, interface with databases, and perform simulations. Access to highquality, digital engineering data is critical for advancing Generative AI applications. Universities, lacking ownership of such data, must partner with industry, as absent this prioritisation, the engineering field risks falling behind on innovation and competitiveness. EDF, a company focusing on electricity generation, employs computer-aided engineering to improve process design. They have achieved two primary goals: maximizing power cycle efficiency and shaft power, with AI generated processes closely matching expert designs and providing innovative alternatives. Future efforts aim to further automate process design and improve efficiency.

# 3 - Artific al intelligence applications in chemical engineering

In this session, David Robert (Technord), Anna Jaeggi (ETH Zurich), Florence Vermeire (KU Leuven), Massimiliano Villone and Maurizio De Micco (Univ. Naples) gave some examples of AI applications in different fields.

Technord uses data-driven modelling in industrial processes to enhance real-world accuracy. They combine statistical analyses, regression techniques, and traditional methods with physical mass and energy balances. They also develop software sensors to support operators and process engineers, leveraging equipment data for intelligent maintenance and pattern recognition. Their current project uses advanced process control to address disruptions and improve predictive key performance indicators for early detection and maintenance in clinker production. The company's predictive model achieved an 84% accuracy rate after several months of monitoring and adjustment (training).

Then the characterization of crystal morphology

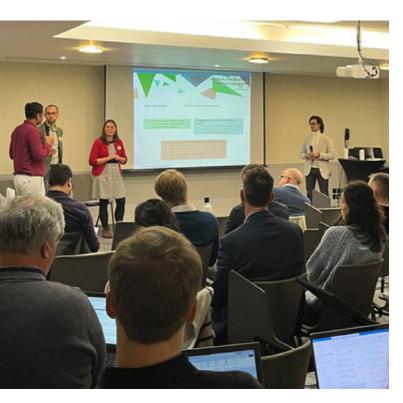


Participants listening to a presentation

which is a key challenge in crystallization was discussed. High performance techniques as Dual Imaging System for Crystallization Observation (DISCO) improves particle reconstruction but introduces challenges like length measurement inaccuracies due to particle orientation. Errors such as overestimating thickness or misjudging length highlight the need for refined algorithms. To improve accuracy, a test set for various particle types was created and simulations were developed to analyze shape features like circularity and convexity. A neural network reduced measurement errors by 33% compared to traditional methods. For plate-like crystals, a machine learning model tailored for precise characterization has been proposed.

The following presentation focused on property prediction models linking molecular structure to key properties especially solubility, critical for drug design and manufacturing. Key targets are solvation free energy and solid solubility, modeled using graph neural networks for solutes and solvents. A specialized architecture ensures consistent predictions for solvent mixtures. Hybrid models combine machine learning and thermodynamics, integrating quantum chemistry and experimental data to enhance accuracy. AI-powered robotic platforms optimize dye properties through iterative synthesis cycles, improving characteristics like absorption and water partitioning. These models are pivotal for optimizing molecular structures in pharmaceutical and industrial applications.

The last example dealt with the stability issues in formulated liquids, such as phase separation, creaming, and flocculation. Collaborating with Procter & Gamble, a deep learning tool using convolutional neural networks was developed for automated instability detection. Over 6,000 time-series of fabric softeners were segmented into 45,000 images, labeled as stable or unstable, resulting in 53,000 labels. Despite



dataset imbalance (10% instability), advanced methods like local binary patterns and geometric augmentations improved accuracy.

An ensemble of eight models was created and validated using gradient class activation mapping, which highlighted stable areas in images for interpretability. A mosaic approach using 10-frame time lapses streamlined the labeling process. The automated detector and the high-quality "Fluid" dataset are now available on GitHub, providing valuable industrial tools for detecting and predicting liquid instability.

### **Round Table**

The roundtable discussions tackled the critical questions:

1. Can AI enhance creativity in process engineering?

2. How can AI be better integrated into chemical engineering curricula?

3. What is the future of AI-human collaboration?

For this edition, participants were able to indicate upon registration their wish to take part in one of the round table topics which was a new feature.

Key Takeaways from the Round Table:

- The urgent need for synergistic collaboration between academia and industry to create a positive ripple effect
- The importance of democratization, within the boundaries of intellectual property rights
- Ensuring replicability of results and transparency in AI frameworks to foster trust between humans and AI
- The need to educate the next generation of chemical engineers, equipping them with a thorough understanding of AI's potential and limitations to promote it has responsible use.

A big thank you to all participants, speakers and organising committee (Luigi Piero di Bonito, Kevin van Geem, Daniele Marchisio, Ludovic Montastruc, Boelo Schuur).

Martine Poux EFNT coordinator EFCE Scientific Secretariat

# **New EFCE Members**

The Federation welcomes its new Institutional Members:

- Faculty of Technology at the University of Banja Luka, 78000 Banja Luka, Bosnia & Herzegovina Website: www.tf.unibl.org
- Escuela Superior Politécnica del Litoral, 2024 Guayaquil, Ecuador Website: www.espol.edu.ec
- Faculty of Technology and Metallurgy at the University of St. John's Cyril and Methodius in Skopje, Skopje 1000, Republic of N. Macedonia Website: www.tmf.ukim.edu.mk



# 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 LinkedIn:

Chemical Engineering Research and Design https://www.linkedin.com/company/chemicalengineering-research-and-design/

Food and Bioproducts Processing

https://www.linkedin.com/company/food-andbioproducts-processing

Education for Chemical Engineers https://www.linkedin.com/company/educationfor-chemical-engineers/

Sustainable Production and Consumption https://www.linkedin.com/company/sustainableproduction-and-consumption/

Carbon Capture Science & Technology https://www.linkedin.com/in/ccst-journala084a9212/

Digital Chemical Engineering is now on LinkedIn. Follow the journal at https://www.linkedin.com/ company/digital-chemical-engineering

Process Safety and Environmental Protection is now on LinkedIn. Follow the journal at https://www.linkedin.com/company/ process-safety-and-environmental-protection

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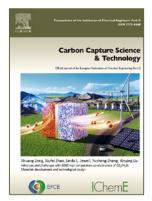
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# Chemical Engineering Research and Design

https://www.sciencedirect.com/journal/chemicalengineering-research-and-design

Freely available content:

- 17th European Conference on Mixing https://www.sciencedirect.com/specialissue/10JKS01K6WT
- 10th International Granulation Workshop https://www.sciencedirect.com/specialissue/10F8492ZP8Z
- Challenges and Opportunities in Advanced Processes based on Distillation for Sustainable Processes https://www.sciencedirect.com/specialissue/107KGGG3059
- January 2025 issue (volume 213) https://www.sciencedirect.com/journal/ chemical-engineering-research-and-design/ vol/213/suppl/C



### Process Safety and Environmental Protection

https://www.sciencedirect.com/journal/processsafety-and-environmental-protection

Freely available content:

- NEW Challenges in Environmental Science and Engineering https://www.sciencedirect.com/specialissue/10F4NBTBSKB
- Safety of Energy Storage including Lithium Batteries (3<sup>rd</sup> International Symposium on Lithium Battery Fire Safety) https://www.sciencedirect.com/specialissue/10LR09Z8D5H
- January 2025 issue (Volume 193) https://www.sciencedirect.com/journal/ process-safety-and-environmental-protection/ vol/193/suppl/C

### Food and Bioproducts Processing https://www.sciencedirect.com/journal/food-and-

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 January 2025 issue (Volume 149) https://www.sciencedirect.com/journal/foodand-bioproducts-processing/vol/149/suppl/C

**Education for Chemical Engineers** https://www.sciencedirect.com/journal/educationfor-chemical-engineers

Freely available content:

 January 2025 issue (Volume 50) https://www.sciencedirect.com/journal/ education-for-chemical-engineers/vol/50/ suppl/C

# Sustainable Production and Consumption

https://www.sciencedirect.com/journal/sustainableproduction-and-consumption

Freely available content:

- Circular Economy as a Driver for Achieving Sustainable Production and Consumption (II) https://www.sciencedirect.com/specialissue/10MJM7VFMCR
- January 2025 issue (Volume 53) https://www.sciencedirect.com/journal/ sustainable-production-and-consumption/ vol/53/suppl/C

### Digital Chemical Engineering

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Including the following special issues:

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- Solid Sorbents for Carbon Capture https://www.sciencedirect.com/journal/carbon-capture-science-and-technology/special-issue/109X8MPMPLL
- Nanomaterials Tailored for CO2 Science https://www.sciencedirect.com/journal/carbon-capture-science-and-technology/special-issue/105Q772XQ5P

### Invitation to submit papers

We have a number of special issues planned that are currently open to all for submissions. If you require any further information then please contact Managing Editor Pippa Wright pwright@ icheme.org

### **Process Safety and Environmental Protection**

https://www.sciencedirect.com/journal/processsafety-and-environmental-protection/about/callfor-papers

**NEW Special Issue:** Safety of Hydrogen Energy in Production, Storage and Use (Manuscript submission deadline **30 April 2025**)

**Special Issue:** Techno-Economic Analysis of Emerging Energy Generation Processes and Technologies for Climate Change Mitigation (Manuscript submission deadline **15 February 2025**)

**Special Issue:** Artificial Intelligence in Safety (Manuscript submission deadline **30 June 2025**)

### **Education for Chemical Engineers** https://www.sciencedirect.com/journal/educationfor-chemical-engineers/about/call-for-papers

**Special Issue:** Latest pedagogical developments in chemical engineering education in Africa: innovative approaches inside and outside the classroom. (Corresponding authors must be affiliated to an African University, Manuscript submission deadline **31 March 2025**)

# Sustainable Production and Consumption

https://www.sciencedirect.com/journal/sustainable-

### production-and-consumption/about/call-for-papers

Special Issue: Mainstreaming Sustainable Consumption (Manuscript submission deadline 30 September 2025)

**Special Issue:** Circular Economy Models for Sustainable Production and Consumption (Manuscript submission deadline **31 March 2025**)

**Special Issue:** Circular Bioeconomy in the Global South: Sustainable Solutions for Socioeconomic Development (Manuscript submission deadline extended to **28 February 2025**)

**Special Issue:** Planetary boundaries in sustainable production and consumption systems (Manuscript submission deadline extended to **28 February 2025**)

**Carbon Capture Science & Technology** https://www.sciencedirect.com/journal/carboncapture-science-and-technology/about/call-forpapers

**Special Issue:** 2025 IChemE & CCST Young Investigator Award (Manuscript submission deadline **31 December 2025**)

**Special Issue:** 2025 IChemE & CCST Distinguished Investigator Award (Manuscript submission deadline **31 December 2025**)

**Special Issue:** Next-Generation Materials and Digitalization for Carbon Capture, Utilization, and Storage (CCUS): The Role of AI and Machine Learning (Manuscript submission deadline **01 September 2025**)

## **EFCE Events in 2025/26** Organised by or on behalf of EFCE

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

### 8th EFCE Spotlight Talks series Online 12-22 May 2025 (EFCE Event) Save the date!

Recordings of previous Spotlight Talks are available on EFCE 's YouTube Channel.

### 9th Process Intensification Conference – EPIC9 *Athens, Greece, 4-6 June 2025*

EPIC9 is organised by the EFCE Working Party on Process Intensification in cooperation with the National technical University of Athens, School of Chemical Engineering

Motto: Process Intensification for safer climate and beyond

Process Intensification (PI) is a key driver of innovation and sustainability in the process industries, offering significant improvements in resource and energy efficiency, process economics, and environmental performance. As in previous years, the 9th EPIC promises to be a platform for the dissemination of new knowledge, the exchange of ideas, concerns, and experiences, as well as the celebration of research achievements. With a rich program featuring the latest advancements in PI, cutting-edge technological developments, and a vibrant social agenda, these three days in Athens are sure to be both intellectually stimulating and enjoyable

Topics: Process intensification in chemical and biochemical processes, Process intensification in energy and environmental applications, Process intensification in food and pharmaceutical applications, 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:** Dimitris Collias, University of Pennsylvania, USA; Hannsjörg Freund, Technical University of Dortmund, DE; Adam Harvey, Newcastle University, UK.

# Register NOW! Early-bird registration deadline: 30 March 2025

### Website: https://epic-2025.com/

18th EFCE International Symposium on Loss Prevention and Safety Promotion in the Process Industries - Loss Prevention 2025 Bologna, Italy, 8-11 June 2025 (EFCE Event No. 809)

Loss Prevention 2025 is organised by the EFCE Working Party on Loss Prevention and Safety Promotion in the Process Industries in cooperation with AIDIC.

This event is an opportunity to exchange up-tothe-minute information on industrial needs, new technology developments, and research opportunities. The previous events attracted leading Industrialists and Academics from all over the world and provided a state-of-the-art chemical and process engineering.

**Topics:** Safety 4.0, AI and digital transformation of industrial processes; Safety in relation to sustainability and resilience in process industry; Safety of decarbonization and energy transition processes; Safety of new materials and technologies; Safety and security of chemical and energy infrastructures; Conventional risk assessment and management approaches; Other process safety topics.

**Special Sessions:** The following Special Sessions complete the Loss Prevention 2025 Symposium. Safety and Sustainability of Green and Alternative Fuels in Port Areas; Ammonia Safety; Innovations in the Management of Reactive Chemical Hazards; Cybersecurity in the Digital Era of the Chemical and Process Industry; Integration of Process Systems Engineering & Machine Learning for Improved Process Safety; Safety of Liquid Hydrogen (details see: https://www.aidic.it/

### lp2025/page.php?pipe=testospecialsessions

Each session includes oral presentations followed by an expert panel discussion with invited panellists. <u>Abstract submission is open</u>. All accepted papers will be considered for publication either in the Chemical Engineering Transactions Journal or in the Book of Abstracts.

**Keynote speakers:** Genserik Reniers, Prof. of Safety of Hazardous Materials, TU Delft; Ana Maria Cruz, Prof. Disaster Prevention Research Institute (DPRI), Kyoto University; Luca Decarli, Senior Knowledge Owner Process Safety | Eni Global Natural Resources & IOGP Process Safety sub-committee Chair.

Exhibition and Sponsorship: Loss Prevention expected to be organised is under the auspices of different sponsors and exhibitors. If you wish to participate to the Sponsorship Programme of the Congress, please contact the Secretariat: lp2025@aidic.it Sponsor: ITELYUM

### **Register NOW! Early-bird registration** deadline: 20 February 2025

### Website: https://www.aidic.it/lp2025/

### 17th International Conference on Chemical and Process Engineering – ICheaP17

### Florence, Italy, 29 June -2 July 2025 (EFCE Event No. 812)

ICheaP17 is as an opportunity to exchange up-to-the minute information on industrial needs, new technology developments and research opportunities. The previous events attracted leading Industrialists and Academics from all over the world and provided a state of the art on Chemical and Process Engineering. The Conference will be structured in Plenary lectures by invited speakers, in selected Lecture presentations and in the Poster sessions.

**Topics:** Biomass and bioprocess engineering; environment, quality and management of natural resources; energy, safety, and process intensification; electrochemical engineering; particle technology; reaction engineering; separation technology and thermodynamics; fluid mechanics and transport phenomena; product design and materials; process systems engineering and digitalization; pharmaceutical engineering and chemical engineering applied to medicine; education and public perception

The full set of final selected papers will be published into Chemical Engineering Transactions Journal, indexed by SCOPUS and SCHOLAR.

**Plenary speakers:** Prof. Chiara Galletti, University of Pisa, Italy; Ing. Vincenzo Guida P&G R&D department, Belgium; prof. Maria Papathanasiou, Imperial College London, UK.

# Register NOW! Early-bird registration deadline: 21 March 2025

Website: https://www.aidic.it/icheap17

35th European Symposium on Computer Aided Process Engineering - ESCAPE 35 *Ghent, Belgium, 6-9 July 2025 (EFCE Event No. 818)* 

ESCAPE-35 will be held at the Technology Campus Ghent, KU Leuven as a part of KU Leuven's 600th year celebrations. It will be organised by KU Leuven in collaboration with the University of Liège. The 2025 conference theme "Closing the loop 2.0" emphasises on use of process systems engineering (from "good old feedback control" to advanced methodologies using AI, quantum computing, etc.) to accelerate the drive towards a circular economy with applications in energy, life sciences, and materials domains.

**Sponsorship:** ESCAPE35 offers a diverse array of sponsorship opportunities to elevate your visibility and establish your company as a pioneering voice within the sector. In addition to the conference sessions, an exhibition will be held concurrently, with spaces available on a first-come, first-served basis. To discuss your specific requirements or secure sponsorship or exhibit space, please reach out to: contact@ escape35-belgium.eu. We are happy to discuss a tailor-made package that suits the wishes of company.

# Register NOW! Early-bird registration deadline: 14 March 2025

Website: https://escape35-belgium.eu/

9th European Drying Conference – Eurodrying 2025 *Wageningen, The Netherlands, 6-9* 

### July 2025 (EFCE Event No. 810)

Wageningen University & Research and the EFCE Working Party on Drying are proud to announce that the 9th European Drying conference. Already being the 9th edition, Eurodrying aims to expand on the positive interaction within the drying community and continue the dialogue between drying experts in academia, as well as industry. Together we can advance knowledge, solve problems, and innovate solutions for drying and dewatering applications.

**Topics:** New dewatering & drying technologies; Industrial processes and equipment; Sensoring and process control; Data-driven strategies; Environmental assessment of dewatering & drying processes; Air & gas dehumidification; Fluidized bed & Spray drying; Drying of biobased materials & foods; Drying of pharmaceutical & biological materials; Drying of chemicals, wood & paper; Mathematical modelling of drying processes; Characterisation of physical properties & product quality.

**Featured speakers:** Dr. Benjamin Zühlsdorf, Danish Technological Institute; Prof. Grzegorz Musielak, Institute of Technology and Chemical Engineering, Poznan University of Technology; Dr. Jewe Schröder, Danone; Prof. Maike Baltussen, Eindhoven University of Technology; Martin Tukker, JOA Air Solutions; Prof. Séverine Vessot Crastes, University of Claude Bernard Lyon 1; Prof. Stefan Heinrich, Hamburg University of Technology; Prof. Stefan Toepfl, University of Applied Sciences Osnabrück and Elea GmbH.

**Sponsors:** Dutch Working Group on Drying (NWGD) – gold sponsor; Andritz, Danone, JOA Air Solutions, Institute for Sustainable Process Technology (ISPT) – silver sponsors; Büchi, Delft Solids Solutions, Hosokawa Micron B.V., MEAM, Fluid Air, Glatt – bronze sponsors

Outstanding oral and poster presentations at the Eurodrying 2025 conference will be awarded a prize. For details see: https://www. eurodrying2025.nl/awards

### **Register NOW! Early-bird registration deadline: 28 February 2025**

Website: https://www.eurodrying2025.nl/ home

12th World Congress of Chemical Engineering and 21st Asian Pacific Confederation of Chemical

### Engineering congress 2025 (WCCE12 & APCChE 2025) Beijing, PR China, 14-18 July 2025

### *Motto: Paradigm Shifting in Chemical Engineering for Global Challenges*

WCCE12 & APCChE 2025 is organised under the auspices of World Chemical Engineering Council (WCEC) and Asian Pacific Confederation of Chemical Engineering (APCChE) The conference is hosted by The Chemical Industry and Engineering Society of China (CIESC), and jointly organised by the China National Petroleum Corporation, China Petrochemical Corporation, and Beijing University of Chemical Technology, guided by the China Association for Science and Technology (CAST), the Chinese Academy of Engineering (CAE), and the Chinese Academy of Sciences (CAS).

The World Congress of Chemical Engineering (WCCE) is the most important academic conference organised by WCEC, held every four years and rotating between Europe, Asia, and the Americas.

The WCCE's comprehensive program includes keynote speeches, technical sessions, panel discussions, and numerous networking opportunities, making it a cornerstone event for anyone involved in chemical engineering.

**Main topics:** Education and Training; Fundamental infrastructure redevelopment; Strategic and emerging industries; Future chemical engineering and smart innovation.

For the detailed list of topics, see https://www. wcce12.com/en/95/list.html

**Plenary speakers**: Bernard L. Feringa, University of Groningen, NL, 2016 Nobel Prize Laureate; Benjamin List, Max Planck Institute for Coal Research, DE, 2021 Nobel Prize Laureate; Raffaella Ocone, Heriot-Watt University, UK, Fellow of the Royal Academy of Engineering.

### The authors' registration and call for papers are open. Deadline for abstract submission: 20 March 2025.

**Exhibition:** The International Chemical ENGINEERING Innovation EXPO 2025 (IChEIE 2025), held in conjunction with the World Congress, invites your organisation to be part of the industry's most influential event. With the theme "Innovate. Transform. Thrive: Green Chemical Engineering for a Better Tomorrow! ", this Expo will bring together global leaders,

innovators, and visionaries to shape the future of the chemical industry. Showcase your cutting-edge products and solutions, connect with top buyers and partners, and gain unparalleled exposure on a global stage. Don't miss the opportunity to drive the conversation on sustainability and innovation in chemical engineering.

# Be a part of the transformation—secure your exhibit space today!

### Website: https://www.wcce12.com/en

15th European Congress of Chemical Engineering & 8th European Congress of Applied Biotechnology (ECCE15 & ECAB8)

*Lisbon, Portugal, 8-10 September* 2025 (*EFCE Event No. 783*)

*Motto: Engineering for a Sustainable World: Summit for Clean Technologies & Brighter Legacy* 

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 ECCE15 & ECAB8, scientists from industry, universities and research institutions from Europe and beyond will discuss the latest research and industrial applications in all fields of chemistry, process engineering, biotechnology and related fields.

The congress will include high-profile international plenary and keynote speakers, an industry exhibition, poster exhibition and plenty of networking opportunities. The congress language is English.

### The call for papers is still open. Deadline: 3 March 2025. Details see above

### Website: https://ECCE-ECAB2025.eu

**5th International Conference on Engineering Future Foods – EFF2025** *Bologna, Italy, 14-17 September 2025* 

The 5th International Conference on Engineering Future Foods – EFF2025 is organised by AIDIC.

This conference addresses the challenge of responsible food production by providing a hub for advanced academic and industrial research. The focus is on Sustainable Optimization, Quantitative Approaches, and Digital Technologies. **Topics:** I. Sustainable Solutions for Digital Food manufacturing: Exploring how automation and digital technologies contribute to the sustainable and circular transition of the food manufacturing sector; II. Design Thinking for Food Techno-Functionalisties: Using product engineering and food design methods to meet consumer needs-convenience, health, and well-beingwhile ensuring technical feasibility: III. The Role of Packaging in the Food Supply Chain: Delving into the complexities and impacts of packaging in the evolving landscape of food production and distribution; IV. Quality Data Analysis: Quantitative methods for monitoring and improving product quality, including the design and application of digital sensors and tools for managing food quality.

**Exhibition and sponsorship:** Download here the Sponsorship Guide with sponsorship packages description and exhibition solutions. For any further information, please contact sponsorship@ aidic.it for details.

Register NOW! Early-bird registration deadline: 15 June 2025

### Website: https://aidic.it/eff2025

### NINETEENTH 2025 - Nanotechnology based INnovation for the EnvironmenT, EnErgy, aNd HealTH Salerno, Italy, 28-30 September 2025 (EFCE Event No. 813)

NINETEENTH 2025 - Nanotechnology based INnovation for the EnvironmenT, EnErgy, aNd HealTH is organised by AIDIC in collaboration with the EFCE Section "Chemical Engineering Applied to Medicine", the Italian Chemical Society (SCI), the University of Salerno, and the NANOMATES Center and the Narrando SME.

NINETEENTH aims at presenting recent scientific and technical advances in the field of nanotechnology application to the environment protection and sustainable energy production, agriculture and food industry, health and safety applications, from materials to devices, to processes.

**Topics:** NANOMATERIALS: synthesis, characterization and production technologies; NANOMEDI-CINE; ENERGY: Advanced devices for sustainable energy production; Nanotechnology in automotive industry; ENVIRONMENT: Advanced processes for environmental protection and remediation; Green Nanotechnology; Modeling the swarming and aggregation in dispersed systems; Nanotechnology

### in agriculture and food industry

**Plenary speakers:** Luisa De Cola, Professor at the University of Milan and head of the unit Materials for Health at the Istituto di Ricerche Farmacologiche Mario Negri, IRCCS, Italy; Tomasz Ciach, Professor at the Warsaw University of Technology, Poland; Andrei Kanaev, Research Director Emeritus C.N.R.S., Laboratoire des Sciences des Procedes et des Materiaux, University Sorbonne Paris Nord, France

Register NOW! Early-bird registration deadline: 5 July 2025

### Website: https://aidic.it/nineteenth25/

**3rd International Conference on Energy, Environment & Digital Transition - E2DT 2025** *Palermo, Italy, 12-15 October 2025 (EFCE Event No. 811)* 

E2DT aims to bringing together researchers, engineers, executives, representatives of the institutions to map the transition towards net zero carbon and fully renewable energy, driven by the recognition that global CO2 emissions must be drastically reduced to keep global warming below the 1.5 °C target. The objective is to provide up-to-date evidence on positive and negative environmental effects of the energy transition and on new technologies to drive/accelerate it.

**Topics:** Energy and other resources from the sea (offshore wind projects, utilization of saline gradients, utilization of sea waves and tides, etc.); Alternative energy vectors for marine use (meoh, nh3, lng, etc); hydrogen: production, storage and utilization; carbon capture, storage and utilization technologies; production of chemicals, fuels and energy from biomass and waste; sustainability in hard to abate sectors (cement, steel, ceramic industries, etc.); Energy storage from renewable sources; digitalization and process system engineering (pse) applications; climate change and risk management

**Plenary speakers:** Emma Rombaut, Yara International; Mattia Vallerio, Politecnico di Milano, Italy; Jéróme Ribuot, LEDJ, France; Clelia Dispenza, Univeristy of Palermo, Italy; Patrick Schuele, Friedrich-Alexander-Universitaet Erlangen-Nürnberg, Germany.

Register NOW! Early-bird registration deadline: 5 July 2025

All participants are invited to the EFCE Forum on 15 October 2025 in the morning (details will follow).

### Website: https://www.aidic.it/e2dt2025

### International Conference on Electrostatics – Electrostatics 2025 Bologna, Italy, 9-12 November 2025 (EFCE Event No. 8)

Electrostatics 2025 is organised by the EFCE Working Party on Static Electricity in Industry in cooperation with AIDIC.

The objective of the conference is to encourage interaction between academic and industrial workers and to provide an opportunity for discussions of the various topics at all levels of interest. The conference will also provide a forum for the exchange of latest knowledge and new ideas in the science and technology of electrostatics, as well as for discussion of electrostatics hazards and problems.

The Conference topics will be treated in invited plenary lectures, selected lecture presentations and poster sessions. Posters will stay on for the whole Conference promoting Author presentation and spontaneous discussion.

**Topics:** Applications and Industry; ESD; Fundamentals; Hazards; Liquids; Solid and Powders; Gases; Measuring Techniques; Standard; History of Electrostatics

### For details see https://www.aidic.it/ electrostatics2025/page.php?pipe= testotopics

### The call for papers is still open. Current deadline for abstract submission: 8 February 2025 (check the conference website)

The proceedings of the conference will be published in a Special Issue of the *Journal of Electrostatics* (an Elsevier publication). Authors whose abstracts have been accepted for Electrostatics 2025 are encouraged to submit a full paper for inclusion in these proceedings. All submitted papers will undergo a peer review process before the conference, to ensure they meet the high standards required for publication in the Journal of Electrostatics. More information on preparing your full paper can be found using the journal link: (https://www.sciencedirect. com/journal/journal-of-electrostatics). Successful papers will be made available to conference attendees and journal subscribers.

### Website: https://www.aidic.it/ electrostatics2025/

### 16th Mediterranean Congress of Chemical Engineering (MeCCE) Barcelona, Spain, 2-4 June 2026 (EFCE Event No. 817)

The event is organised by the Spanish EFCE Member Society SEQUI in conjunction with **EXPOQUIMIA.** 

Under the theme "Transforming the Industry, Shaping the Future," this edition will explore the evolving role of chemical engineering in addressing critical global challenges. Moreover, it is a great opportunity to implement the entire 2030 Agenda from science to industry through engineering and its power of transfer. The great differential value of this congress is that it unites science and engineering with industry, being a unique bridge for the scientific and business communities to come together in an incomparable setting.

This edition will once again feature innovations, solutions, debats, and challenges. It is a historic event that will set guidelines for the industrial processes of the future.

**Topics:** Pioneering Approaches to Teaching and Learning in Chemical Engineering; Innovative & Critical Raw Materials; Circularity & Water Resource; Decarbonization & Hydrogen; Digital Twins, AI & Advanced Process Control; Food & Bio Engineering, Fine Chemicals & Pharma.

Registration and abstract submission will open soon. Abstract submission deadline: 2 February 2026

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

### Save the Date!

Naples, Italy, 27-20 September 2026

XIX European Symposium on Comminution & Classification (EFCE Event No. 816)

The event is organised by the EFCE Working Party on Comminution and Classification in cooperation with the Italian EFCE Member Society AIDIC.

### Website: tba

# IN New EFCE LinkedIn page

We are happy to announce the new official LinkedIn page of the EFCE: https://www.linkedin.com/company/ european-federation-of-chemicalengineering-efce/

This LinkedIn page is more than just a news feed. It's a space for knowledge exchange, networking and collaboration.

Here, we will:

- Share the latest advancements and challenges in Chemical Engineering focusing on what's currently important to our community.
- Highlight exciting EFCE initiatives, events, and activities from our Working Parties, Sections, and Member Societies.
- Present career opportunities and ways to connect with peers across Europe.

This LinkedIn page is managed by the Social Media Team of the EFCE Section Early Career ChemEng.

If you have any ideas or information that you would like to share (conferences, paper calls, summer schools, open positions, events, awards, etc) please contact the Social Media Team (efce.socialmedia@gmail.com) to coordinate a post

Please follow the EFCE LinkedIn page, share the account with your network, stay engaged and be part of the conversation.

### Contact

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