

Prestigious Michael L. Michelsen Award presented to Signe Kjelstrup



Professor Techn. Signe Kjelstrup, Norway, has been named the laureate of the **2022 EFCE Michael L. Michelsen Award**.

Kjelstrup was conferred the award by the EFCE Working Party on Thermodynamics and Transport Properties in

recognition of her internationally renowned research in the area of non-equilibrium thermodynamics, with emphasis on entropy production minimization, electrochemical cell modelling, heterogeneous systems and nanothermodynamics. The judges highlighted her contribution to the development of novel important research in the field and her strong commitment to education and training, in her country and internationally.

She said: "I am completely overwhelmed; never believing that this honor would be mine. I could not imagine anything better at this point in my career."

Signe Kjelstrup dr. techn. et dr. ing. is professor emerita in physical chemistry at the Norwegian University of Science and Technology (NTNU, Trondheim). She served nine years as adjunct professor in irreversible thermodynamics and sustainability at TU Delft, and has been guest professor at Kyoto University, ETH Zürich and the Universities of Barcelona, Leiden and Rochester, USA. She has co-authored three monographs on non-equilibrium Thermodynamics and written 380 peer reviewed articles, supervised 32 PhDs and 61 MSc. Her Hirsch

index is 55. She is a member of the Norwegian Academy of Science and Letters, The Royal Norwegian Academy of Technological Sciences, and Academia Europaea. She received the Nansen award for young scientists in 1982, and the Guldberg Waage award in 2014. Over the years she was appointed to several Norwegian Governmental Committees and served in the executive board of the Norwegian Research Council. She was leader of the graduate council of NTNU and is presently the leader of PoreLab Center of Excellence Graduate School.

Nominating her for the Award, Prof. Øivind

Dear Readers,

Welcome to the June 2022 issue of EFCE News!

This issue contains much information about EFCE activities and events and awards.

If you have any comments/suggestions, please contact us.

With kind regards

Giorgio Veronesi
EFCE President

In this issue:

- Prestigious Michael L. Michelsen Award presented to Signe Kjelstrup
- EFCE Award Winners 2022: Process Safety and CAPE
- Working Party and Section News: WPs on Education and on Thermodynamics and Transport Properties
- News about the official EFCE Journals
- EFCE Events in 2022/2023

Wilhelmsen wrote: "Signe is a role model, bridge-builder and a pioneer. For decades, she has been a leading profile in the field of nonequilibrium thermodynamics. This is a field that is crucial in a world with a screaming demand for new energy solutions, increased understanding of porous media and emerging fields such as nanotechnology. ... Signe is a great inspiration for us younger scientists and after more than 50 years of diligent and internationally leading research within her field, a field which has been dominated by males, she is a most deserving candidate for the Michael L. Michelsen Award."

The 2022 Michael L. Michelsen Awardee is supported by Elsevier and its journal Fluid Phase Equilibria.

Signe Kjelstrup has been invited to present a keynote lecture at the 32nd European Symposium on Applied Thermodynamics - ESAT 2022 which will be held in Graz, Austria, on 17-20 July 2022 (Symposium website: <https://www.tugraz.at/events/esat2022/home/>).

The **Michael L. Michelsen Award** - previously called Distinguished Lecture on Thermodynamics and Transport Properties and re-named in recognition of its second laureate, the distinguished Professor Michael L. Michelsen (Denmark) - aims to honour a senior member of the community that is active in a European institution. The award is presented every two years by the EFCE Working Party on Thermodynamics and Transport Properties (https://efce.info/WP_TTP).



ELSEVIER

About the sponsor:

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We have supported the work of our research and health partners for more than 140 years. Growing from our roots in publishing, we offer knowledge and valuable analytics that help our users spend more time making breakthroughs and drive societal progress.

Fluid Phase Equilibria publishes high-quality papers dealing with experimental, theoretical, and applied research related to equilibrium and transport properties of fluids, solids, and interfaces. Subjects of interest include physical/phase and chemical equilibria; equilibrium and nonequilibrium thermophysical properties; fundamental thermodynamic relations; and stability.

<https://www.sciencedirect.com/journal/fluid-phase-equilibria>

Working Party and Section News

Changes of Chairmanship

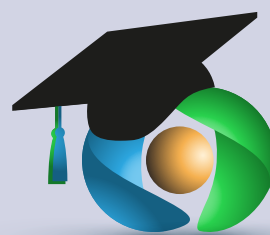
Professor Maria Grazia De Angelis, University of Edinburgh, United Kingdom, has been elected as the new Chair of the Working Party on Thermodynamics and Transport. He succeeded Prof. Sabine Enders. Her 3-year term of office started in March 2022.

At their recent business meeting in Paris, France, the Working Party on Education (WPE) elected **Dr. Hermann J. Feise** as its new Chair for the next term of office from August 2022. He will succeed Prof. Eric Schaer who held the position for six years. At the same time, **Dr. Edit Szekely**, Budapest University of Technology and Economics, Hungary, has been elected as the new WPE Vice-Chair.

WPE News

Teaching methodologies: A description of active teaching tools and/or methodologies can be found on the WPE website at:

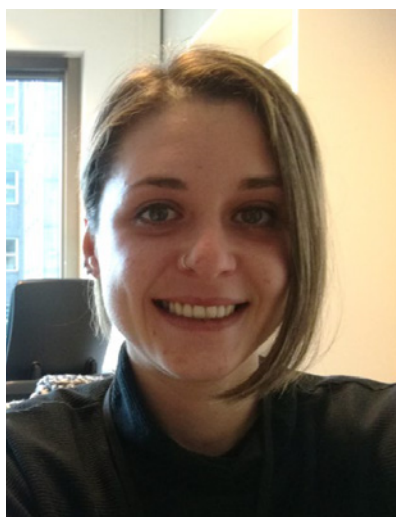
<https://efce.info/Scientific+Groups/Education/Current+activities/Teaching+methodologies.html>



EFCE
WP on Education

EFCE Award Winners 2022

EFCE Working Party on Loss Prevention Prevention presents Process Safety Awards at the Loss Prevention Symposium 2022



Dr. Federica Ovidi is the winner of the 2022 Excellence Award in Process Safety of the European Federation of Chemical Engineering (EFCE). Her excellent thesis on "Development of a methodological framework for the integrated

HSE assessment of LNG supply and utilisation chain", completed at the University of Pisa, Italy, under the supervision of Prof. Chiara Galletti, Prof. Gabriele Landucci, and Prof. Leonardo Tognotti, was unanimously selected by the jury as the best submission.

Operational, technological, and safety issues in the natural gas chain related to Liquefied Natural Gas (LNG) come from the high flammability of the substance, the extremely low operative temperature (about -162 °C), as well as the potential to generate large amount of vapour in case of release. These hazardous issues are encountered during LNG storage and transport, which are often located in vulnerable areas. In her thesis Federica Ovidi analysed the LNG storage and transport systems through a multiscale approach: from the stand-alone storage tank to the storage tanks in industrial layouts, and the transport systems in sensitive areas. She developed advanced probabilistic and deterministic studies, incorporating Computational Fluid Dynamics (CFD) techniques, associated with LNG facilities.

Nominating her for the Award, Prof. Landucci wrote: "Dr. Ovidi demonstrated her scientific value and independence, providing an important effort in the development of loss prevention and process safety research, with particular reference to the LNG safety studies. Her outstanding profile is demonstrated by results obtained and published in international Journals and international conferences."

Federica Ovidi obtained her M.Sc. in chemical

engineering and her Ph.D. in industrial engineering from the University of Pisa in March 2020. Thereafter, she held the position of Post-Doctoral Fellowship in industrial engineering at University of Pisa on continued working on the development of methods for the safety analysis of liquefied natural gas (LNG) transport and storage systems. Her academic research focused on the development of innovative methods for the quantitative risk assessment in process plants, in particular in the Oil and Gas sector. She joined international projects and collaborated as Visiting PhD at the TU Delft and the Leiden University (NL).

In April 2021, Dr. Ovidi joined RINA Consulting S.p.A. in the Organizational Unit "Oil & Gas Occupational Health & Safety and Permitting" as HSE Specialist and Safety Engineer. Working as HSE Engineering Specialist, she has developed experience in the field of HSE Engineering, Safety Studies according to Seveso Directive, Quantitative Risk Assessment Analysis, Hazard Identification Techniques (HAZOP, HAZID, etc.), and Consequence Assessment.

The 2022 Excellence Award in Process Safety is generously sponsored by Aspen Oss B.V.

The award was presented to Federica Ovidi on 7 June 2022 at 17th International Symposium on Loss Prevention and Safety Promotion in the Process Industries held online and in Prague, Czech Republic, on 5-8 June 2022.

Secondly, on the occasion of the 17th International Symposium on Loss Prevention and Safety Promotion in the Process Industries, the EFCE Working Party on Loss Prevention and VSB – Technical University of Ostrava, Faculty of Safety Engineering are pleased to present the **EFCE Loss Prevention Symposium Award 2022** to **Professor Adam Markowski** in recognition of his outstanding and long-life contribution to the advancement of process safety in thinking, education and training, and the practical application of process and plant safety.

About the Excellence Award sponsor

Aspen Oss is a global supplier of complex, highly potent Active Pharmaceutical Ingredients

(APIs) and has a proud history of almost 100 years. We work from a deeply rooted and proactive quality culture. Our core competences are the production of steroids, heparin, peptides and alkaloids. A broad experience in cGWIP manufacturing, customer and regulatory support and extensive product know-how are applied to offer our customers a consistent quality. Aspen Oss employs approximately 800

employees and is a dynamic organisation built on entrepreneurial strength and forward thinking minds.



2022 Award in Computer Aided Process Engineering Presented to Two Excellent Young Scientists

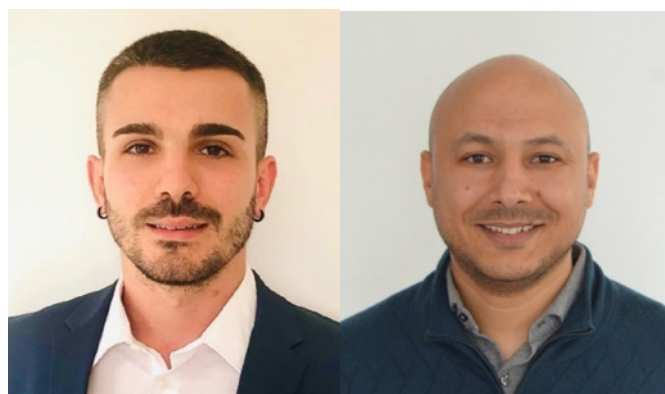
This year, the EFCE Excellence Award in Recognition of an Outstanding PhD Thesis on CAPE is presented to two laureates, **Dr. Alessandro Di Pretoro**, and **Dr. Ahmed Shokry Abdelaleem Taha Zied**.

The jury decided to share the Award among the two candidates due to the extraordinary and equally-high quality of their work and potential impact in scientific and industrial community.

Alessandro Di Pretoro obtained his B.Sc. in Industrial in Chemical Engineering from the University of Rome "La Sapienza", Italy, and his M.Sc. in Chemical Engineering from Politecnico di Milano, Italy. In 2022, he obtained a joint PhD in Industrial Chemistry and Chemical Engineering from Politecnico di Milano and in Process and Environmental Engineering from the Institut National Polytechnique de Toulouse, France. Currently, he holds the position of Associate Professor (Maître de Conférences) at INP de Toulouse – ENSIACET, Toulouse France.

The Award acknowledges his excellent PhD thesis on "Optimal Design of Flexible, Operable and Sustainable Processes under Uncertainty: Biorefinery Applications", elaborated during three years of joint PhD thesis programme between the Laboratoire de Génie Chimique INP- ENSIACET, Toulouse, France and Politecnico di Milano, Italy, under the co-supervisor of Professor Ludovic Montastruc and Professor Flavio Manenti.

The PhD thesis addresses the question of how process performances such as feasibility, profitability, sustainability etc., are affected when the operating conditions vary with respect to the nominal ones according which the process was designed and optimized. By means of both deterministic and stochastic flexibility indexes, the research work aimed at conceiving and revising the optimal design procedure of chemical processes by accounting for the impact of uncertainty on multiple optimization criteria.



Left to right: Dr. Alessandro Di Pretoro and Dr. Ahmed Shokry Abdelaleem Taha Zied

The main concern was to deal with the transition of chemical processes towards bio-based raw materials and sustainable energy sources whose nature and availability considerably fluctuates over the year seasons. A new switchability index has been proposed with the purpose to assess the ability of a system to switch from the nominal operating conditions to the perturbed ones accounting for its dynamic behaviour.

This innovative tool allows to compare different control strategies (PID vs MPC), control structures and tuning methodologies. Its effectiveness was proved on several process units such as CSTR and distillation columns.

Nominating him for the Award, Prof. Ludovic Montastruc said: "The PhD thesis work of Alessandro Di Pretoro represents a relevant contribution to the PSE domain for all those problems concerning systems design under perturbed conditions. Thanks to the innovative methodologies and tools proposed in this work further improvements in this field are possible even for other process systems and applications."

Ahmed Shokry obtained his B.Sc. in

Industrial and Production Engineering and Master level 1 in Mechanical Design and Production Engineering in from Zagazig University, Egypt, and his Diploma of advanced studies -DEA- and PhD in Chemical Process Engineering from the Technical University of Catalonia, Spain. Currently, he holds the position of Research Engineer at the Center for Applied Mathematics, Ecole Polytechnique, Palaiseau, France. His research areas include Machine Learning (ML) and Artificial Intelligence (AI) applications for industrial processes management and precision agriculture.

The Award acknowledges his excellent PhD thesis on "A Contribution to Chemical Process Operation Support: New Machine Learning and Surrogate Models-Based Approaches for Process Optimization, Supervision and Control", completed at the Technical University of Catalonia, Barcelona, Spain, under the supervision of Professor Antonia Espuña.

This PhD thesis focuses on the improvement of the decision-making processes in the chemical industry, through the development of data-driven models (Machine Learning-ML) and solution methods able to consistently consider the different circumstances this decision-making should address, with different objectives and constraints, working together with other CAPE tools. In his thesis Ahmed Shokry developed a plateau of novel and efficient ML-based methodologies for supporting decision making at the main tasks/modules of process operation, in situations where either the process model is available but complex, or the process model is missing whereas sensor-measured data are available as the only source of information; together with software tools to achieve the automatic use and application of these methodologies.

Prof. Espuña said "The Thesis opened a new decision-making paradigm able to help organizations, to manage their supply chains in the presence of ill posed conditions with different objectives under uncertain complex situations, constituting an advance over the CAPE state-of-the-art, especially in terms of the scope of the proposed decision-support tools and solution approaches, and their flexibility."

Recommending him for the Award, Prof. Eric Moulines wrote: "The originality of the work stems from: - the highly innovative way in which classical AI, ML and optimization techniques are used and combined to develop novel methods to efficiently address existing challenges in chemical plant operations; - the wide range of process operation modules covered by the methods in the work, and; - the completely different behaviours of the process

that the ML-based methods used were able to approximate and capture: continuous, discrete, static, dynamic, and, most importantly, optimal behaviour (i.e., optimal with respect to uncertain parameter changes)."

The 2022 Excellence Award in Recognition of an Outstanding PhD Thesis on CAPE is generously sponsored by the Laboratoire de Génie Chimique - LGC, Toulouse, France.

The award was presented to Alessandro Di Pretoro and Ahmed Shokry on 13 June 2022, 10.30-11:30 AM CET, at the 32nd European Symposium on Computer Aided Process Engineering – ESCAPE-32 (website: <https://escape32.inp-toulouse.fr/en/index.html>), held in Toulouse, France, on 12-15 June 2022.

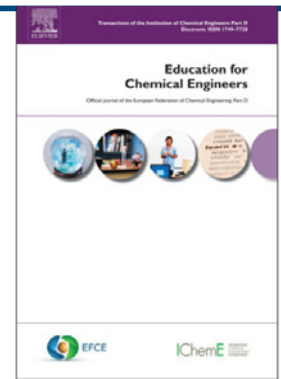
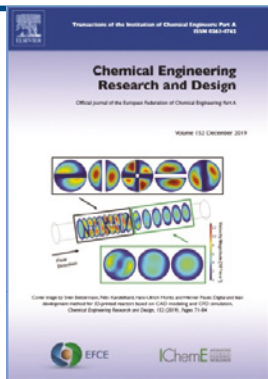
About the sponsor

Interlinking Science and Technology, the Laboratoire de Génie Chimique - LGC participates in the latest advances in Chemical Engineering and develops experimental and theoretical research

for new insights at the core of processes of transformation of matter and energy. LGC's mission is to produce knowledge in the field of Chemical Engineering by focussing on industrial and societal constraints and issues while participating in the international competition of new knowledge creation.

The Process System Engineering department aims to design interconnected equipment in a production unit. Its activity scans all the spatio-temporal scales from the molecule to the extended enterprise, including decision-making thanks to the concept of industrial engineering, the design of intensified equipment or even the integrated product-process design with molecular simulation.





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:

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>

New to Twitter:

Process Safety and Environmental Protection

<https://twitter.com/PSEPJournal>

Read journal papers for free

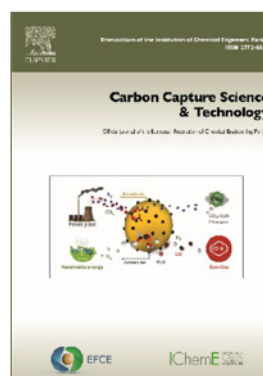
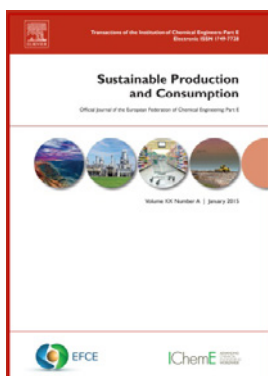
The following articles / issues are set for free access periods. In addition to these, articles that are published via the open access route in the journal are also freely available to all. These are identified in ScienceDirect by a green dot. It is possible sign up to an RSS alert specifically to inform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

- January 2022 issue (Volume 177)
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/vol/177/suppl/C>
- **NEW** Multi-scale approaches in bubble column fluid dynamics
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/special-issue/10124DN7HNX>
- International Symposium of Reaction Engineering, Catalysis & Sustainable Energy (RECaSE 2021)
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/special-issue/10GXCFJ1FWX>
- Development and Application of Membranes for Challenging Environments
<https://www.sciencedirect.com/journal/chemical-engineering-research-and-design/special-issue/10W9MH3L1X1>



Process Safety and Environmental Protection

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

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- January 2022 issue (Volume 157)
<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/vol/157/suppl/C>
- Safety, environmental and risk management related to Covid-19
<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/special-issue/10D5W6RGHXZ>
- Emerging Trends in Thermocatalytic, Photocatalytic, Electrocatalytic, Photoelectrocatalytic and Biological Conversion of Harmful Gases into Benign Compounds for Environmental Protection
<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/special-issue/108DDZFFT5Q>
- Air Pollution Prevention and Pollution Source Identification of Chemical Industrial Parks
<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/special-issue/10CBFZHN2P2>
- Data Analytics in Process Safety
<https://www.sciencedirect.com/journal/process-safety-and-environmental-protection/special-issue/10QCVQMKQ1W>

Food and Bioproducts Processing

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

Freely available content:

- January 2022 issue (Volume 131)
<https://www.sciencedirect.com/journal/food-and-bioproducts-processing/vol/131/suppl/C>

Education for Chemical Engineers

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

Freely available content:

- January 2022 issue (Volume 38)
<https://www.sciencedirect.com/journal/education-for-chemical-engineers/vol/38/suppl/C>

Sustainable Production and Consumption

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

Freely available content:

- January 2022 issue (Volume 29)
<https://www.sciencedirect.com/journal/sustainable-production-and-consumption/vol/29/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>

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>
- **NEW Special issue** - New Trends in Membrane Technology for Carbon Capture
<https://www.sciencedirect.com/journal/carbon-capture-science-and-technology/special-issue/10Z5B4DNVN1>

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

NEW Special Issue: Intelligent Green Oil and Gas Engineering (Manuscript submission deadline **31 July 2022**)

<https://www.journals.elsevier.com/chemical-engineering-research-and-design/call-for-papers/>

[special-issue-intelligent-green-oil-and-gas-engineering](https://www.journals.elsevier.com/process-safety-and-environmental-protection/call-for-papers/special-issue-intelligent-green-oil-and-gas-engineering)

Special Issue: Extended Application of Biomass-based Activated Carbon in Water and Wastewater Treatment (Manuscript submission deadline **30 June 2022**)

<https://www.journals.elsevier.com/chemical-engineering-research-and-design/call-for-papers/special-issue-extended-application-of-biomass-based-activated-carbon-in-water-and-wastewater-treatment>

Special Issue: Enabling Technologies for Biopharmaceutical Process Development and Manufacturing (Manuscript submission deadline **30 September 2022**)

<https://www.journals.elsevier.com/chemical-engineering-research-and-design/call-for-papers/special-issue-enabling-technologies-for-biopharmaceutical-process-development-and-manufacturing>

NEW Special Issue: Novel emerging reactive-based technologies in Unit Operations for process intensification (Manuscript submission deadline **30 November 2022**)

<https://www.journals.elsevier.com/chemical-engineering-research-and-design/call-for-papers/special-issue-novel-emerging-reactive-based-technologies-in-unit-operations-for-process-intensification>

Process Safety and Environmental Protection

NEW Special issue: Aqueous Emerging Pollutants and Treatment (Manuscript submission deadline **30 June 2022**)

<https://www.journals.elsevier.com/process-safety-and-environmental-protection/call-for-papers/special-issue-aqueous-emerging-pollutants-and-treatment>

NEW Special Issue: Physics-based machine learning application to process safety (Manuscript submission deadline **31 October 2022**)

<https://www.journals.elsevier.com/process-safety-and-environmental-protection/call-for-papers/special-issue-physics-based-machine-learning-application-to-process-safety>

Special issue: Resilience Assessment and Management (Manuscript submission deadline **31 August 2022**)

<https://www.journals.elsevier.com/process-safety-and-environmental-protection/call-for-papers/special-issue-resilience-assessment-and-management>

Education for Chemical Engineers

Special issue: Accreditation (Manuscript submission deadline **30 June 2022**)

<https://www.journals.elsevier.com/education-for-chemical-engineers/call-for-papers/special-issue-accreditation>

Sustainable Production and Consumption

Special issue: Circular Economy as a Driver for Achieving Sustainable Production and Consumption (Manuscript submission deadline **31 July 2022**)

<https://www.journals.elsevier.com/sustainable-production-and-consumption/call-for-papers/special-issue-on-circular-economy-as-a-driver-for-achieving-sustainable-production-and-consumption>

Digital Chemical Engineering

Special issue: Autonomy, Safety, and Security for Cyber-Physical Systems in the Process Industries (Manuscript submission deadline **30 November 2022**)

<https://www.journals.elsevier.com/digital-chemical-engineering/call-for-papers/special-issue-autonomy-safety-and-security-for-cyber-physical-systems-in-the-process-industries>

Carbon Capture Science & Technology

Special issue: Nanomaterials Tailored for CO₂ Science (Manuscript submission deadline **30 June 2022**)

<https://www.journals.elsevier.com/carbon-capture-science-and-technology/call-for-papers/special-issue-on-nanomaterials-tailored-for-co2-science>

NEW Special issue: CCST2022 (Manuscript submission deadline **30 October 2022**)

<https://www.journals.elsevier.com/carbon-capture-science-and-technology/call-for-papers/special-issue-ccst2022>

Events organised by or on behalf of EFCE in 2021/22

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

ESCAPE-32 – 32nd European Symposium on Computer Aided Process Engineering Toulouse, France, 12-15 June 2022 (EFCE Event No. 778)

The ESCAPE-32 event is organized under the auspices of the EFCE Working Party on Computer Aided Process Engineering (CAPE-WP), Institut National Polytechnique de Toulouse (Toulouse INP) and Société Française de Génie des Procédés (SFGP).

Topics: Modelling and Simulation, Product/Process Synthesis and Design, Large Scale Design and Planning/Scheduling, On Line Model Based Applications and Control, Concepts, Methods and Tools, Digitalization and Artificial Intelligence, CAPE Applications Addressing Societal Challenges, Education in CAPE and Knowledge Transfer.

Plenary speakers: Sigurd Skogestad; Vincent Gerbaud; Jutta Valkenberg.

Sponsors: ProSim; BASF; Siemens.

Register now!

Website: <https://escape32.inp-toulouse.fr/en/index.html>

17th European Symposium on Comminution & Classification – ESCC2022 Toulouse, France, 27–29 June 2022 (EFCE Event No. 784)

17th European Symposium on Comminution & Classification (ESCC) is organised by INP Toulouse on behalf of the EFCE Working Party on Comminution and Classification.

This event will combine the fundamentals of breakage, advanced models and comminution and classification processes on mineral processing, biorefinery, food, pharmaceutical, chemical and materials industries as well as recycling industries and waste processing.

Topics: Fundamentals of particle breakage;

Innovative methods for particulate characterization; Coarse grinding and classification processes, especially for minerals, ores, cement, Grinding, dispersing and classification of fine particles, micro and nanomilling applied to pharmaceutical, chemical, material and electronic industries; Cell disintegration and recovery of high value-added products in biorefinery, green processes, food industries; Grinding for recycling industries and waste processing: plastics, WEEE, construction and demolition wastes, agricultural wastes, solar panels, wind turbines; Mechanochemical and mechanofusion processes, mechanical bulk and surface transformations; Transport and process modelling across length scales (CFD, multiphase flow, DEM, PBM; Wear, erosion and product contamination; Plant operation, innovations in milling and classification technologies including automation, machine learning, in line sensors

The full programme is now available at: <https://esc2022.sciencesconf.org/program>

Plenary speaker: Prof. Ecevit Bilgili, New Jersey Institute of Technology (NJIT), USA; Dr. Frank Müller, BASF SE, Germany; As. Prof. Mohsen Yahyaei, Sustainable Minerals Institute, University of Queensland, USA

Industrial sponsors: Netzsch; Yaskawa; Sugino

Register now!

Website: <https://esc2022.sciencesconf.org>

2022 Summer School on Crystallization TU Dortmund, Germany, 29 June – 2 July 2022

The summer school is organised by Working Party on Crystallization. Each lecture will be delivered by two speakers: one from industry and one from academia. The names of the speakers will be communicated shortly.

Topics: Solid forms and their thermodynamics; Nucleation and Molecular Growth; Aggregation and Breakage; Modelling and Control

Website: <https://efce.info/WPC.html>

CHISA 2022 – 25th International Congress of Chemical and Process Engineering
Prague, Czech Republic,
21-25 August 2022
(EFCE Event No. 787)

The Czech Society of Chemical Engineering (CSCHE) invites you to the upcoming CHISA in the very beautiful city of Prague to celebrate **60 years of CHISA Congresses** in 2022 under the motto "The place, where people meet people and science meets culture"

Watch the special CHISA invitation at:

<https://m.youtube.com/watch?v=weamBh-VAcA&feature=youtu.be&cbrd=1>

Topics:

I. GLOBAL THOUGHTS: Low to zero emission technologies; Carbon dioxide economy; Water supply, management, reuse, purification; Food in the focus; Sustainability and circularity; Healthcare, hygiene, medicine and pharmacology; The Covid outbreak and chemical engineering;

II. ENERGY: Energy to carbon footprint ratio; Low energy cost processes; Renewable energy and energy storage, hydrogen as a fuel; Energy self-sufficiency; Clean energy; Photochemistry, solar cells and solar powered technologies, fuel cells; Energy saving processes and technologies; Batteries;

III. MATTER IN MOTION: Continuous process design and optimization (batch to continuous, flow chemistry); Process intensification and miniaturisation; Fluid flow and microfluidics, multiphase flow; Microreactors for real-life products and scaled-up technologies; Mixing; Separation processes;

IV. NOT ONLY FASTER: Reaction engineering and kinetics; Homogeneous and heterogeneous catalysis; Catalytic processes; Design, preparation and characterisation of catalysts; Catalytic reactors;

V. PARTICLES: Advanced functional materials; Designed, printed, integrated, used materials, 3D printing; Particulate and microporous solids, low-risk advanced materials; Biomimetics; Functional films and nanostructures; Sensors and sensing objects and nano-objects; Hierarchical structures and nanoparticles; Polymers and polymer technologies, conductive polymers

VI. GREEN ISSUES: No waste technologies and zero waste plants; Production-trade-customer zero waste chains; Urban mining, waste management; Microplastics and endocrine disruptors; Biotechnologies, biomass and biomass processing; Membrane processes, adsorption; Air, soil and water pollution, pollution control; Green and supercritical chemistry, VOC reduction, ionic liquids; Processes for environment;

VII. YOU MUST KNOW: Chemical reactors – all aspects; Transport phenomena; Distillation, extraction, SCF extraction, S-L separation, crystallisation; Thermodynamics, phase equilibria, multiphase processes; Chemical engineering computations and modelling, molecular dynamics, ab-initio calculations, mathematical predictions, neural networks; New and improved technologies; Chemical engineering and safety, prevention and loss control; Elimination of health and environmental hazards;

VIII. COLLEGE: Educated chemical engineers; Teaching chemical engineering, new strategies, opportunities; Jobs in chemical engineering; Choosing chemical engineering as the field of studies – right or wrong?; Competitiveness of chemical engineers on the job market;

XI. The Wiley-VCH Poster Session.

Plenary speakers: Prof. Robert Schlögl, Max Planck Institute for Chemical Energy Conversion, Berlin, DE; Prof. Christine Grant, North Carolina State University, USA; Prof. David Fernandez Rivas, University of Twente, NL; Prof. Matthias Kraume, Technical University Berlin, DE; Prof. Yoel Sasson, Hebrew University of Jerusalem, IL. For details see <https://2022.chisa.cz/scientific-program/#plenary>

Posters may be accepted up to the beginning of the Congress but will not be included in the final program.

Register now!

Website: <https://2022.chisa.cz/>

ACHEMA 2022
Frankfurt am Main, Germany,
NEW DATE: 22–26 August 2022
(EFCE Event No. 775)

Feel the heartbeat of our industry! The process industry is the innovation driver of the world economy and the pacemaker for numerous industrial sectors

ACHEMA is the central arena of the process industry. Nowhere is the heartbeat of our industry faster, more intense, up-to-date, innovative and international than here.

Take this opportunity to forge new contacts, to build up business relations and find solutions for your current projects!

New exhibition group 'Digital Hub' (Hall 12.1) Venue for digital players at the heart of AICHEMA: <https://www.achema.de/en/the-achema/digital-hub>

ACHEMA Congress – from research to application: This year, for the first time, AICHEMA will fully integrate the congress into the exhibition programme. All congress sessions will take place either on stages directly in the exhibition halls or in the immediate vicinity of the exhibition groups. Another change to the Congress is that there will be **five theme days** instead of three this year. Daily highlight sessions within the respective themes will emphasize additional topics, ensuring that all topics driving the process industry are addressed.

On Monday (22 August 2022), the theme "Hydrogen Economy" will kick off the event: As we move towards a climate neutral future, hydrogen will play a central role in the transformation of the process industry, the transport sector and the energy system. The process industry is already the main user of hydrogen. The focus of the first theme day will be how to leverage its further potential in the future.

Production without the use of fossil raw materials is an important and ambitious goal to reduce greenhouse gas emissions in the process industry. The idea of fossil-free production is simple, but there are still many unanswered questions. These will be addressed by the **"Fossil Free Production" theme day on Tuesday (23 August 2022).**

The focus topic of AICHEMA, "The Digital Lab", will be part of the **Wednesday (24 August 2022) theme day on "Perspectives in Laboratory & Analytics"**: Data from all areas of research and production converge in the laboratory. Modular, automated and fully networked, the digital laboratory is a central component for process development and quality assurance. The Highlight Session on this topic and the Congress will complement the theme day.

The continuous hot topic of **"Digitalisation in Process Industry"** can be found as part of the new exhibition group "Digital Hub"

(Hall 12.1) and also as a focal point of the Congress programme agenda on **Thursday (25 August 2022)**: "Data is the new gold" is a phrase used often enough, but how can this treasure be harnessed? How can data be used in business models? And how can data security be guaranteed?

The last day of the congress on **Friday (26 August 2022) will focus on "Novel Bioprocesses and Technologies"**: New biopharmaceuticals, bio-based fine chemicals or bio-technological recycling all require new (production) processes. Changes in these processes are especially driven by advances in synthetic biology, automated laboratory technologies, integrated bioprocesses, innovative bioreactor concepts, novel downstream technologies and advanced modelling. AICHEMA 2022 will serve as the global showcase for these developments.

Join us and register now!

Website: <https://www.achema.de/en/>

Distillation & Absorption 2022 *Toulouse, France,* **18–21 September 2022** **(EFCE Event No. 780)**

Distillation & Absorption 2022 will showcase the newest and best in distillation & absorption technology and will cover a broad range of fundamental and applied aspects. The conference is supported by the Société Française de Génie des Procédés (SFGP) working closely with the EFCE Working Party on Fluid Separation.

Topics: Basic data; Modelling, Simulation, IA methods (hybrid modelling, digital twin,...); Hybrid and Multifunctional Processes (modularity, flexibility, intensification,...); Equipment design, technology and innovation (additive manufacturing, centrifugal separation,...); Control, Process operation and troubleshooting; Energy and sustainability in separation processes (efficiency, renewable energy, new concepts, CO₂ capture,...); Biobased separation processes; Mobile/On-board separation processes (embedded processes in cars, ships, aircrafts, satellites); CO₂ capture.

Selected contributions will be published in a special issue of CHERD as a long version.

Associated with the conference, a call for nominations for the 2022 EFCE EXCELLENCE AWARD IN FLUID SEPARATIONS is open. The award is sponsored by the EFCE and Evonik.

Plenary speakers: Andreas Bode, BASF SE; Søren Bøwadt, Health and Digital Executive

Agency (HaDEA); Veronique Pugnet, TOTAL; Bernard Saulnier & Mikaël Wattiau, Air Liquide R&D; Michael Schultes, Ruhr-Universität Bochum; & Daniel R. Summers, FRI's Design Practices Committee.

The scientific programme will be available soon!

Register now! Deadline for early-bird registration: 4 July 2022

Website: <http://da2022.org/fr/index.html>

9th World Congress of Particle Technology

Madrid, Spain, 18–23 September 2022 (EFCE Event No. 784)

WCPT9 is the world's most influential event for the particle technology community. It's where world-leading researchers and companies share the latest thought leadership about the progression and future of particle technology. And it's the best place for networking opportunities with your colleagues to share mutual professional goals.

For WCPT9, a unique collaboration has been established among 8 Working Parties of the European Federation of Chemical Engineering (EFCE). The following EFCE Working Parties are involved with the organisation of WCPT9:

Agglomeration, Characterisation of Particulate Systems, Comminution and Classification, Crystallization, Drying, Mechanics of Particulate Solids, Mixing, Multiphase Fluid Flow.

WCPT9 main topic: Particulate solids handling; Particle and particulate systems characterization; Particle processing; Particle-fluid systems: fluidization and multi-phase flow; Particle formation and design; Particle separation; Aerosol particles; Nanoparticles: production, characterization and applications; Modelling and simulation; Science, Technology, Engineering and Design in particle-based materials and products.

Beyond these main topics, **Joint Events (JE)** will be also organized in engineering, scientific or technically related fields, where particle technology is present. Three WCPT9-JE have been already confirmed:

- Challenges of microplastics: analysis and control.
- III ANQUE-DECHEMA Leading edge conference "Particle Technology. Shaping the future".
- Multidimensional particle properties: characterization, separation and application.

Plenary speakers: Aibing Yu, Australia; Wolfgang Peukert, Germany; Jesús Santamaría, Spain; Lidia Morawska, Australia; Willie Hendrickson, USA

Exhibition and sponsorship: Take advantage of this opportunity to showcase your company's/ organization's products, services and expertise. If you wish to participate to the Sponsorship Program of the Congress, please consult the sponsorship & exhibition guide at:

<https://wcpt9.org/wp-content/uploads/WCPT9-Sponsorship-Opportunities-Exhibition.pdf>

Sponsors: Gold sponsor: BASF; Silver sponsor: Rocky; Bronze sponsors: ASPHERIX; LUM

Exhibitors: ALTAIR; adix; BASF; Granutools; Laboratorio Oficial Jose María de Madariaga (LOM); LUM; Malvern Panalytical; Rocky; Universidad Politécnica de Madrid.

Register now! Deadline for regular registration: 19 August 2022

Website: <https://www.wcpt9.org>

Energy, Environment & Digital Transition E₂DT

Milano, Italy, 16–19 October 2022 (EFCE Event No. 781)

The conference aims to bringing together researchers, engineers, senior executives, policy makers and opinion formers to map the transition from an economy based on fossil fuels towards net zero carbon and fully renewable energy to meet the COP26 Glasgow Agreement targets. The objective is to provide a view on available, up-to-date evidence on positive and negative environmental effects of the energy transformation in a holistic way and on the opportunities for new technologies to drive accelerate the transition.

Topics: Technology process on renewable energy generation and use; Carbon capture and storage technology; Hydrogen energy: production and storage; Help energy consumers to make more sustainable decisions; Mobilizing industry for a clean and circular economy; Zero pollution ambition for a toxic-free environment; Preserving and restoring ecosystems and biodiversity; Energy storage and battery technology; Energy transportation and transmission; Mobilizing society for the energy transition; How digital evolution can help zero carbon footprint challenge

Selected papers will be presented during the conference and published into Chemical Engineering Transactions: <https://www.cetjournal.it>

The quality of this publication is valued by ISBN & ISSN numbers, reference by SCOPUS and SCHOLAR

Exhibition & Sponsorship: Spaces are available at Conference Venue for exhibition desks. A maximum surface that can be assigned to each booth is 3x2=6 m². [Download the Sponsorship Guide here](#) with sponsorship packages description and exhibition solutions.

Website: <https://www.aidic.it/e2dt>

15th Mediterranean Congress of Chemical Engineering - MECCE Barcelona, Spain, 30 May – 2 June 2023 (EFCE Event No. 788)

The MECCE is organised by the Spanish Society of Industrial Chemistry and Chemical Engineering (Sociedad Española de Química Industrial e Ingeniería Química, SEQUI) in conjunction with the international fair of the Chemical Industry EXPOQUIMIA 2023 (<http://www.expoquimia.com/en/home>)

Motto: Chemical Engineering, leading solutions for the planet

This 2023 congress is presented as 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. An edition where the scientific community will dress up to offer and to share its knowledge in essential and critical industrial sectors.

The great differential value of this congress is that it unites science and industry, being a unique 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. A historic congress that will set the guidelines for the industrial processes of the future.

Scientific Programme: The programme schedule and scientific topics matrix are 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>

17th European Conference on Mixing (EFCE Event No. 773)

The Mixing Conference is organised by the University of Porto on behalf of the EFCE Working Party on Mixing. **The physical conference in Porto, Portugal is postponed to 2023.**

Website: <http://mixing17.eu>

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

The next ECCE & ECAB will take place as a face-to-face event from 17-21 September 2023 at the CityCube in Berlin, Germany. Make a note of this date in your calendar and look forward with us to interesting presentations, interactive exchange with colleagues, the diverse range of exhibitors and sponsors as well as a supporting programme that offers plenty of time for networking.

Sign up for our newsletter to stay up to date.

The call for papers is planned to be issued in late summer 2022.

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

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