Introduction

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The 35th European Symposium on Computer Aided Process Engineering (ESCAPE|35) was held at KU Leu-ven/Campus Gent, Belgium, July 6–9, 2025. Continuing a tradition that began in 1991 under the auspices of the EFCE Working Party on Computer Aided Process Engineering CAPE), the ESCAPE series stands as a premier annual event for the global Process Systems Engineering (PSE) community. ESCAPE returned to Belgium for the second time - following the 1998 edition in Bruges - and took place as part of KU Leuven's 600th anniversary celebrations. The 35th edition was organised jointly by KU Leuven/BioTeC+ and University of Liège/PEP.

The 2025 conference embraced the theme "Closing the Loop 2.0", underscoring the evolving role of PSE in ena-bling a circular economy. The program highlighted both core process engineering disciplines – such as modeling, con-trol, design, and optimization - and cutting-edge approaches involving artificial intelligence, machine learning, and quantum computing, applied across diverse sectors including energy, chemicals, biotechnology, and advanced mate-rials.

ESCAPE|35 received 673 abstract submissions, of which 563 were invited for a 5-to-8-page full paper or a 2- page short paper after a first review round. Upon rigorous re-review of all papers submitted, 423 full paper contribu-tions have been published in full open access (and LAPSE and DOI indexed) by PSE Press as a separate volume of the *Systems & Control Transactions* series. Another 140 contributions have been made available as two pages short pa-pers published by EUROSIS-ETI.

The scientific contributions were organized into thematic sessions, poster presentations, workshops, and demon-strations, within ten thematic tracks:

- T01: Modelling and Simulation
- T02: Sustainable Product Development and Process Design
- T03: Large Scale Design and Planning/Scheduling
- T04: Model-Based Optimisation and Advanced Control
- T05: Concepts, Methods and Tools
- T06: Digitalization and AI
- T07: CAPEing with Societal Challenges (Green Deal, Energy Transition, …)
- T08: CAPE Education and Knowledge Transfer
- T09: PSE4Food and Biochemical (*new in 2025*)
- T10: PSE4BioMedical and (Bio)Pharma (*new in 2025*)

Tracks T09 and T10 were introduced in this year's edition to broaden the application scope of PSE methods in food, biochemical, (bio)pharma and biomedical systems - fields of increasing relevance to the community.

We extend our sincere thanks to all authors, reviewers, topic coordinators, plenary and keynote speakers, and members of the Scientific and Organizing Committees. We gratefully acknowledge KU Leuven and University of Liège for their support and express our heartfelt appreciation to our numerous sponsors. This edition also marks the inaugural collaboration with PSE Press as the official publisher of the ESCAPE proceedings (full papers volume) - a milestone in promoting high-quality, open access dissemination of PSE research. Many thanks to EUROSIS-ETI as well for publish-ing the short papers volume, ISBN indexed.

We hope these volumes capture the scientific excellence, collaborative spirit, and forward-looking vision that defined ESCAPE|35 and continue to serve as a valuable reference for researchers and practitioners in the years ahead.

ESCAPE|35 - European Symposium on Computer Aided Process Engineering
Ghent, Belgium. 6-9 July 2025

Peer Review Policy

TERMINOLOGY

- **Conference Paper:** This is a peer-reviewed research paper describing an **original** research contribution and published in the conference proceedings.

APPLICATION

- All conference papers are subject to peer review.

PUBLICATIONS

- All conference papers which have passed peer review and have been accepted by the conference chairs will be published in the conference proceedings.

PEER REVIEW PROCESS

Initial Screening

The conference chairs will screen the initial submissions (one-page abstracts) of contributed papers. At their option, chairs may choose to reject these submissions for any reason, but the primary reasons for rejection at this stage are (a) subject does not match conference themes and topics; (b) in appropriate, unprofessional, unethical, or dishonest material; (c) duplicate submissions; (d) abandoned submissions; (e) multiple submissions from same presenter; (f) obvious poor quality; (g) reasonable suspicion of machine-generated text; (h) need to limit acceptances because of conference space constraints. Chairs may also transfer papers between sessions at this stage.

Conference chairs will then invite authors of the one-page abstracts that have passed the initial screening to submit a conference paper for peer review.

Conference Paper Peer Review

Conference chairs act as editors. They will assign peer reviewers to assess the quality of the conference papers and manage the peer review process for each paper. Peer reviewers are generally selected from the International Scientific Committee who are scientists, engineers, or researchers with technical expertise in the conference topic. Peer reviewers must be considered technical experts in their field, hold a PhD, and have published peer reviewed scientific works previously. Each work must be reviewed by a minimum of two peer-reviewers.

A “single-blind” peer review system is used, in which the peer reviewers have access to the identities of the authors, but the authors are never given the identities of the peer reviewers. This is consistent with most journal peer-review procedures in our field.

Peer reviewers will be given a set of quality criteria that may include scientific and technical quality, quality of writing, originality and novelty, appropriateness for the conference topic and theme, interest to the community, and other factors of merit. Peer reviewers are expected to be rigorous and critical in their technical assessments and adhere to the highest standards in the field in order to ensure high quality. Peer reviewers are asked to comment on their assigned conference papers and issue a recommendation to the conference chairs based on this quality criteria. Reviewers may recommend one of the following:

- **Accept Paper.** No technical changes are necessary before publication. Only typographical, spelling, grammar, or other minor changes are necessary which do not require technical review.
- **Accept Paper with Minor Revisions.** Some minor technical issues need to be addressed either through technical changes to the manuscript or through rebuttal to reviewer comments. The reviewer does not believe the issues are significant enough to require additional technical review by the reviewers. The reviewer has provided enough commentary such that the editor can decide if the minor issues have been addressed in a future revision.
- **Revise Paper with Re-Review.** Major technical issues need to be addressed either through technical changes

to the manuscript or through rebuttal to reviewer comments. The reviewer believes the issues are significant enough to require that the revised manuscript receive additional review by the reviewers.

- **Reject Without Reconsideration.** The technical issues are so significant that it is unlikely that an acceptable manuscript could be produced by the deadline; or, the manuscript is out of scope, inappropriate, or computer-generated.

Peer reviewers may be asked to provide numerical scores or rankings, as well as provide written comments intended for the chairs and/or the authors. Peer reviewers are encouraged to provide specific and constructive feedback that will aid the authors in improving the work and provide advice to the chairs.

The conference chairs are responsible for making the final decision on each paper and may require several rounds of author changes if necessary to meet quality standards. Conference chairs are not required to follow the recommendations of the peer reviewers in making these decisions. It is possible that conference chairs will choose to not accept some papers that still pass through rigorous technical peer review, especially when limited by available space or when papers do not sufficiently promote conference objectives. Conference chairs may also transfer papers between sessions as desired.

CONFLICTS OF INTEREST AND ETHICAL GUIDELINES

The chairs and peer reviewers must ensure they do not have a conflict of interest that may bias their decisions, such as ensuring that authors are at “arm’s length” and have no financial conflicts of interest. Peer reviewers and chairs must disclose if they have such a conflict of interest with a specific submission, and if so, a different chair and/or peer reviewer should be assigned to handle that submission.

To help determine conflicts of interest, and for all other ethical guidelines, we use the Systems and Control Transactions ethical guidelines described at: https://psecommunity.org/contributor-guidelines

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