

## Special Issue

# Industrial Applications of Modeling Tools

### Message from the Guest Editors

The special Issue on “Industrial Applications of Modeling Tools” aims to present new mathematical and numerical tools that have been implemented to solve real industrial problems at different production stages and that have been validated with actual industrial data, from process design to process monitoring and control. Some typical topics and applications include:

- Use of detailed phenomenological models for the design of actual process equipment and process flowsheets;
- Implementation of novel numerical schemes for faster design of actual process equipment and process flowsheets;
- Use of phenomenological and empirical models for process scale-up and optimization;
- Development and implementation of data-driven models for process monitoring (soft sensors), control, fault detection, and fault diagnosis;
- Online and real time implementation of phenomenological models for process identification (digital twins) and control;
- Novel numerical procedures for enhancement of numerical performance in actual industrial real-time applications;
- Use of empirical and phenomenological models for just-in-time maintenance.

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### Guest Editors

Prof. Dr. Jose Carlos Pinto

Dr. Tahyná Barbalho Fontoura

Dr. Tiago Lemos

Prof. Dr. André Domingues Quelhas

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### Deadline for manuscript submissions

20 July 2025



## Processes

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