Special Issue

Modeling, Design, Optimization and Maintenance of Intelligent Manufacturing Towards Industry 5.0

Message from the Guest Editors

As the industrial sector progresses toward Industry 5.0, intelligent manufacturing systems' modeling, design, optimization, and maintenance have garnered increasing scholarly attention. This evolution emphasizes the integration of advanced cyber–physical systems, artificial intelligence, and human-centric technologies to foster sustainability, efficiency, and resilience in production processes. Central to this paradigm shift are the principles of process modeling, multi-objective optimization, and predictive maintenance, which are applied across various scales—from individual unit operations to entire manufacturing ecosystems. These methodologies aim to enhance resource utilization, minimize energy consumption, and improve system adaptability. Topics include, but are not limited to, methods and/or application in the following areas:

- Smart manufacturing;
- Industrial fault diagnostics and prognosis;
- Predictive maintenance;
- Industrial reliability assessment;
- AI-driven optimization;
- Digital twins;
- Human–AI collaboration;
- Industrial IoT;
- Data-driven decision-making.

Guest Editors

Dr. Yang Li

Dr. Cunsong Wang

Dr. Yan Shi

Prof. Dr. Li Jia

Deadline for manuscript submissions

31 October 2025

Processes

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.5

mdpi.com/si/214714

Processes
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
processes@mdpi.com

mdpi.com/journal/processes

Processes

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.5

mdpi.com/journal/processes

About the Journal

Message from the Editor-in-Chief

You are invited to contribute either a research article or a comprehensive review for consideration and publication in *Processes* (ISSN 2227-9717). *Processes* is published in open access format – research articles, reviews, and other content are released on the internet immediately after acceptance. The scientific community and the general public have unlimited, free access to the content. As an open access journal, *Processes* is supported by the authors and their institutes through the payment of article processing charges (APCs) for accepted papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Giancarlo Cravotto
Department of Drug Science and Technology, University of Turin, Via P. Giuria 9, 10125 Turin, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, Inspec, AGRIS, and other databases.

Journal Rank:

CiteScore - Q2 (Chemical Engineering (miscellaneous))