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## Towards Autonomous Operation of Biologics and Botanicals

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submissions:

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### **Message from the Guest Editors**

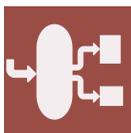
This Special Issue on “Towards Autonomous Operation of Biologics and Botanicals Manufacturing” intends to curate novel advances in the development and application of model-based tools, process analytical technology, and advanced process control applications to address the ever-present challenges related to traditional pharmaceutical manufacturing practices. Topics of interest include, but are not limited to

- Advanced process control concepts and studies;
- Process analytical technology concepts and studies;
- Validation of digital twins with the development of new modeling concepts for biologics manufacturing at different steps of the workflow (phenomena, unit operation, and plant-wide);
- Design and optimization of biological processes through the derived models based on the QbD-approach;
- Process intensification, robustification, and flexibilization of multipurpose manufacturing as well as dedicated continuous bioprocessing CBP;
- Hybrid modeling combining classical first-principles models with (big) data-driven concepts;
- Process control, monitoring, and fault detection in the biologics industry.



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# Special Issue



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## Editor-in-Chief

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## Message from the Editor-in-Chief

*Processes* (ISSN 2227-9717) provides an advanced forum for process/system-related research in chemistry, biology, material, energy, environment, food, pharmaceutical, manufacturing and allied engineering fields. The journal publishes regular research papers, communications, letters, short notes and reviews. Our aim is to encourage researchers to publish their experimental, theoretical and computational results in as much detail as necessary. There is no restriction on paper length or number of figures and tables.

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