



an Open Access Journal by MDPI

Modeling and Optimization of Gas-Solid Reaction Vessels

Guest Editors:

Dr. Runxia Cai

Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC 27695, USA

Dr. Xiwei Ke

Department of Energy and Power Engineering, Tsinghua University, Beijing 100089, China

Dr. Markus Engblom

Faculty of Science and Engineering, Laboratory of Molecular Science and Engineering, Åbo Akademi University, 20500 Turku, Finland

Deadline for manuscript submissions: **29 May 2024**

Message from the Guest Editors

Gas-solid reaction vessels (e.g., fluidized beds, fixed beds, moving beds, etc.) are widely used in many industrial areas, such as chemical engineering, power engineering, or metallurgy. Reactor modeling, a powerful tool for understanding the performance of the process via simulating operating conditions outside the experimentally tested ranges, has increasingly developed into an irreplaceable part of the design, scale-up, and optimization of different reaction systems. Recently, modeling reaction vessels with sophisticated geometrical configurations and complex chemical reaction systems are also becoming feasible with the development of numerical methodologies and computational facilities. This Special Issue of Processes, "Modeling and Optimization of Gas-Solid Reaction Vessels" aims to present the latest achievements in modeling associated with various gas-solid reaction vessels. Modeling topics include but are not limited to hydrodynamics, heat and mass transfer, looping processes, energy conversion and storage, combustion and gasification, pollution control, CO2 capture, and other technologies associated with the gas-solid reaction vessels.



mdpi.com/si/163703







an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Giancarlo Cravotto

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

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.

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:** JCR - Q2 (*Engineering, Chemical*) / CiteScore - Q2 (*Chemical Engineering* (miscellaneous))

Contact Us

Processes Editorial Office MDPI, St. Alban-Anlage 66 4052 Basel, Switzerland Tel: +41 61 683 77 34 www.mdpi.com mdpi.com/journal/processes processes@mdpi.com X@Processes_MDPI