Special Issue

Thermodynamic Properties, Heat Transfer and Drying Kinetics of Food Materials

Message from the Guest Editor

This Special Issue brings together cutting-edge research that explores the complex interactions between heat, mass, and momentum transfer in various food matrices during drying and thermal processing. Contributions focus on experimental and modeling approaches to characterize specific heat, thermal conductivity, enthalpy, and diffusivity, as well as their dependence on temperature, moisture content, and structural transformations in food materials. Advanced drying models, both empirical and theoretical, are presented to describe moisture removal behavior under different thermal conditions, along with emerging techniques like infrared, microwave, and vacuum-assisted drying. Studies also explore the impact of processing parameters on energy efficiency and final product quality, including texture, nutrient retention, and shelf stability. Emphasis is placed on the integration of thermodynamic principles and kinetics into the design of sustainable, scalable food processing systems. This Special Issue serves as a valuable resource for researchers, engineers, and industry professionals seeking to enhance thermal processing technologies for diverse food applications.

Guest Editor

Dr. Clairmont Clementson

Department of Agricultural and Biosystems Engineering, North Dakota State University, Fargo, ND 58108, USA

Deadline for manuscript submissions

31 March 2026

Processes

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.5

mdpi.com/si/251885

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))