Special Issue

Exploring the Impact of Non-Thermal Processing on Structural and Functional Properties of Bioactives from Plant-Based Food

Message from the Guest Editors

Plant-based foods have gained immense popularity as sustainable and healthy dietary options. Unlike traditional thermal processing, non-thermal technologies such as pulsed electric fields (PEFs), cold plasma, and ultrasound minimize excessive heat-induced changes while directly reshaping the molecular structures of bioactives and their carrier matrices. These structural modifications directly influence key functional attributes, including the bioavailability, antioxidant capacity, and targeted biological activities of bioactives, which are pivotal for the nutritional quality and health-promoting potential of plant-based food products. Although conventional processing can enhance the palatability and shelf-life of plant-based foods, it often causes irreversible loss of bioactives or diminished functionality due to thermal sensitivity. Recent research has thus shifted toward optimizing non-thermal processing parameters to maximize the retention of bioactives while tailoring their structural features for improved functionality.

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Foods (ISSN 2304-8158) is an open access and peer reviewed scientific journal that publishes original articles, critical reviews, case reports, and short communications on food science. Articles are released monthly online, with unlimited free access. Currently, Foods has been indexed by the Science Citation Index Expanded (SCIE - Web of Science), PubMed, and Scopus. Our aim is to encourage scientists, researchers, and other food professionals to publish their experimental and theoretical results as much detail as possible. We therefore invite you to be one of our authors, and in doing so share your important research findings with the global food science community.

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