



Acoustic and Hydrodynamic Effects in Food Processing

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Message from the Guest Editor

This Special Issue aims to present an updated overview of the applications of ultrasound and hydrodynamic cavitation in food processing. Starting with a description of the physical concepts and phenomena behind cavitation effects, shear forces and the microjets generated during sonication and hydrodynamic treatment, the final goal is to provide insight into existing industrial processes that take advantage of these energy sources. An accurate analysis of observed mechanical, physical, chemical and biochemical changes should facilitate process optimization and minimize the risk of food component degradation and the loss of functional and flavoring properties. The wide range of operations that make use of this technology include extraction, emulsification, solid dispersion, freezing, drying, cutting, degassing/defoaming, thawing, brining, microorganism inactivation, meat tenderization, filtration and crystallization. The huge production volumes found in the food industry require highly efficient, large-scale reactors that are designed for flow processes where turbulence, shear and cavitation effects are modelled in numerical simulations.





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Message from the Editor-in-Chief

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