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Thermodynamic Analysis and Process Intensification

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Message from the Guest Editor

Process intensification focuses on considerable improvements, in tens to hundreds of percent, in the manufacturing sector through the modification of existing operations or new designs that are precise efficient, economical, and safer. Process intensification (PI) enables the manufacturing sector to remain competitive and can be achieved by focusing on molecular levels of reaction kinetics, thermodynamics, and heat and mass transfer. Thermodynamic analysis suggests process improvements toward better matching the design parameters with the operating conditions that lead to less irreversible processes with less entropy production, hence less dissipated energy. Besides, the analysis of information flow between interacting parts of a process may help increase compatibility and reduce the overall irreversibility toward improving the overall efficiency.



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Special Issue



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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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