



Editorial Special Issue on "Bioenergy Systems, Material Management, and Sustainability"

Fernando V. Lima ^{1,*} and Gerardo J. Ruiz-Mercado ^{2,*}

- ¹ Department of Chemical and Biomedical Engineering, West Virginia University, Morgantown, WV 26506, USA
- ² Center for Environmental Solutions and Emergency Response, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH 45268, USA
- * Correspondence: Fernando.Lima@mail.wvu.edu (F.V.L.); Ruiz-Mercado.Gerardo@epa.gov (G.J.R.-M.)

The growing worldwide demand for energy and resources, combined with the stringent environmental challenges and regulations, means that the efficient, cost-effective, and sustainable use of energy and material sources, including bio-based, has become increasingly important. The development and implementation of novel technologies for the improved and diversified utilization and reuse of such primary sources can be accelerated using process systems engineering methods, such as process modeling, design, optimization, and control. This Special Issue of *Processes* includes novel process systems contributions and applications associated with bioenergy systems, material management, and sustainability.

This Special Issue, "Bioenergy Systems, Material Management, and Sustainability", encompasses a combination of contributed articles by a diverse set of worldwide experts in the Americas, Europe, and Asia, focusing on a multitude of concepts and topics. The following topics, along with the manuscript contributions, are addressed in this issue: Bio-based materials and processes [1,2], bioenergy systems optimization, advanced control for sustainability and state estimation [3–7], sustainability, life cycle assessment, and life cycle inventory analyses associated with biosystems and biofuels [8–10], sustainable management and valorization of organic/biomass waste, including energy production [11,12], and techno-economic analysis of novel routes for the sustainable utilization and reuse of biomass and waste [13]. Such topics are of great interest and critical relevance to the sustainable development of local, regional, national, and international communities. Stakeholders in these communities include government, industry, academia, and decision-makers interested in optimizing the efficiency and sustainability of bioenergy systems and waste management valorization.

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