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Advanced Biofuels: Microalgae, Drop-In and Bioelectro Approaches

Guest Editors:

Dr. You-Kwan Oh

School of Chemical and Biomolecular Engineering, Pusan National University (PNU), Busan 46241, Korea

Dr. Jin-Suk Lee

Gwangju Bioenergy R&D Center, Korea Institute of Energy Research (KIER), Gwangju 61003, Korea

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Message from the Guest Editors

Advanced biofuels, such as microalgae, drop-in, and electro biofuels, have been extensively investigated as alternatives to conventional plant-based biofuels (e.g., biodiesel, bioethanol). These biofuels are considered to be promising solutions for how to meet growing biofuel demand and have recently have highlighted in both industrial and academic fields as a way to substantially reduce CO₂ emissions in the transportation sector. Microalgae show higher areal biomass productivities than traditional energy crops and can utilize directly high concentrations of CO₂ from industrial flue gases. Oxygen-free and/or catalytically-upgraded biofuels are required to improve both fuel quality and blending rates. The application of bioelectrochemical conversions for the obtainment of value-added chemicals and biofuels via electrofermentation could contribute to the practical replacement of the fossil-fuel-based refinery process.

This Special Issue covers recent advances in microalgae, drop-in, and electro biofuel technologies, including (bio)catalyst screening/development, pretreatment, (bio)reactor/process optimization, biofuel conversion, biorefinement, and scale-up.



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Editor-in-Chief

Prof. Dr. Enrico Sciubba

Department of Mechanical and
Aerospace Engineering,
University of Roma Sapienza, Via
Eudossiana 18, 00184 Roma, Italy

Message from the Editor-in-Chief

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Energies Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

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