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Editorial

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Francesco Ruffo and Roberto Esposito

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Catalytic Valorization of Glycerol: Strategies and Perspectives

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Editorial to the Special Issue "Catalytic Valorisation of Glycerol: Strategies and Perspectives"

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Chemical manufacturing has undergone profound changes over the past twenty years. The urgency of finding new renewable sources for the supply of energy and raw materials has led to a rise in new approaches that increasingly complement traditional ones.

Among renewable sources, biomass is certainly the most accredited due to a series of benefits that make it sustainable and long-lasting: it is often available at low cost, uniformly distributed over the Earth's surface, and has wide chemical diversity.

A relevant segment of biomass is that of vegetable oils, especially if they are a waste of processes or are of non-edible origin because their transesterification is a sustainable way to obtain biodiesel. The manufacture of biodiesel is now close to 50 billion liters per year, with simultaneous production of about 10% by mass of glycerol. Therefore, fully exploiting its surplus is a priority. The various conventional uses and the current capabilities of the market, however, are not able to absorb all of the glycerol produced. Therefore, the need arises to find new ways to convert this molecule for different applications.

The articles collected in this Special Issue demonstrate how academic and industrial research is active in this sector: in fact, contributions from authors from different parts of the world describe the state of the art or propose new methods for, inter alia, the ketalization, polymerization, hydrogenolysis, carboxylation, and oligomerization of glycerol. This variety highlights the key role that this raw material will play in the future of the chemical industry and how the urgent implementation of greener production is a relevant aspect in reducing the circulation of pollutants on the planet and realizing the ambitious zero-waste goal of the circular economy.

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