



polymers



Special Issue Reprint

Polymers and the Environment

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The aim of this reprint devoted to the topic “Polymers and the Environment” was to pursue environmentally friendly objectives for polymer-based materials under a two-fold perspective, applied and academic. In the 1980s, the first global environmental crisis occurred with an emphasis on the role of plastics in big cities’ massive solid waste streams. It was apparent then (and now) that the best environmental management practices required solid scientific and technical knowledge. Moreover, once at the end of their useful life, these plastics become involved in their materials (polymers and additives) into a circular economy strategy conjugated with the non-steady scenarios of the other key sectors of the economy, industry, society, and policy. Thus, linking tandem polymers and the environment has led, 40 years later, to a wide polymer research field devoted to continuously improving the environmental performance of polymer and polymer-based materials. This strategy comprises all the steps in the polymer management chain, from the raw materials to the polymers, many of which come from classical and renewable sources (the so-called bioplastics). Additionally, there is a need to improve the processability, ultimate properties, and performance by employing friendly environment additives; the recyclability of the materials; and the development of innovative and disruptive processes allowing better mechanical and energy recovery, including chemical recycling. This reprint includes approaches related to this frontrunner polymer science and technology area.



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