

The development of biorefineries and prospects for the future

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The noun biorefinery, and the associated gerund biorefining, first began to appear in scientific literature in the 1980s. This was a result of the oil crisis provoked by the Iran-Iraq war. However, until the first decade of the present century, these terms remained relatively unused.

The term biorefinery has been defined many times and in many ways, but according to the IEA task 42 definition it is the “the sustainable processing of biomass into a spectrum of marketable products and energy”. Although this definition is rather simple it includes key notions related to sustainability and multiproduct outputs.

In my presentation I will provide a personal view of how biorefineries have developed so far, considering how sustainability and multiproduct criteria have been tackled. Moreover, I will reflect upon the oil refinery paradigm and its limited usefulness to frame the development of biorefining.

I will also consider future prospects, focusing on those that can be driven by biotechnology and biomanufacturing. In this regard, I will provide a brief appraisal of the European situation and make proposals on how to move biotechnology forward, especially at the preindustrial R&D level.