

Chennai,

15th November 2021.

Special issue in the Journal “Frontiers in Chemical Engineering”

Title: Biofuels and biochemicals production for the reduction of CO₂ emissions

Objective:

Production and use of biofuels and biochemical contributes to reduction in CO₂ emissions and facilitates attaining the targets of COP26 climate summit by significantly reducing the reliance on fossil fuels. Among various biofuels biodiesel and bioethanol have already found market for transportation applications. However, breakthrough is still expected in the realm of biofuels and biochemical production methods that would reduce the production time and cost drastically making the use of biofuels competitive and economically sustainable as fossil fuels have been during the 20th and early 21st centuries. In addition to the use of non-edible oils, algal biomass, terrestrial biomass, animal and food wastes, CO₂ emissions from power plants have also been used for the production of energy sources like formic acid (a potential source of the energy carrier hydrogen) and many others. Glycerol, a waste generated in the biodiesel production plants is used as a feedstock for the production of energy carrier hydrogen, a fuel with zero CO₂ emission. Owing to the potential of biofuels and biochemical to alter the adverse effects of climate change by reducing the CO₂ emissions, it is intended to bring out a special issue on this subject to enlarge the knowledge domain. The editors of this special issue earnestly appeal to the researchers to actively contribute their original results for publication.

Scope:

1. Biodiesel – novel methods of production
2. Bioethanol – novel methods of production including distillation process
3. Biohydrogen production – chemical and biochemical methods
4. Production of aviation biofuels
5. Biochemicals production
6. Use of CO₂ emissions as C1 feedstock for biofuels production
7. Catalytic methods, including those using microwave and ultrasound and solar energy irradiation, for biofuels production

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