

Special issue on “Biofuel production methods”

Journal: Journal of Energy, Environmental & Chemical Engineering

<http://www.jeece.org>

ISSN Print: 2637-4331; ISSN Online: 2637-434X

Publisher: Science Publishing Group

Summary:

Unambiguously biofuels (bioethanol, biobutanol, biodiesel, biohydrogen, biomethane, biokerosene, jet fuel range hydrocarbons, drop-in biofuels, isoprenoids, bioelectricity) replace partly, if not completely, the fossil-based fuels for transportation applications, in particular. This will decelerate climate change. The collective responsibility of the research fraternity is to accelerate the replacement, at least partially, of fossil fuels with biofuels and guarantee a pollution-free and sustainable ecosystem for our future generations. Enormous progress has been made in this direction in that sugarcane-based bioethanol has already become a marketable biofuel raising hope in the substitution of petroleum-based fuels with bio-based fuels. Biodiesel production methods have been accelerated and various non-edible feedstock has been successfully converted to biodiesel raising hope that biodiesel could replace the petrodiesel. Similar progress as in the realms of bioethanol and biodiesel needs to be achieved in other biofuels like biobutanol, biohydrogen, biomethane, biokerosene, jet fuel range hydrocarbons, drop-in biofuels, isoprenoids, bioelectricity as no single biofuel can able to cater to the increasing needs of fuel requirement. The aim of the present special issue titled “Biofuel production methods” is to draw the attention of the researchers in the field of biofuels that alternatives to bioethanol and biodiesel are to be sought for a sustainable transition to the biobased economy from the current fossil-based economy that would result in the alleviation of the catastrophic effects of climate change which is real and presently felt by humanity all around the globe. Research advances made in the field of biofuels research are encouraging in that a web of Science search with the keyword “Biofuels” gives 120, 301 as on 12th February 2022. However, much remains to be done in the realm of renewable energy sources, especially, in the field of biofuels by effectively utilizing the photosynthetic microorganisms and CO₂ as feedstock and biological species like bacteria and yeast as catalysts as solar thermal energy as the source of thermal activation leading to sustainable and demand-based supply of petroleum alternatives. The research fraternity works on biofuels production are encouraged to enthusiastically disclose their new findings in our special issue and contribute to the goal of achieving self-sufficiency in bioenergy.

Keywords: Biodiesel; Bioethanol; Biohydrogen; Formic acid; Biobutanol; Biomethane; Biokerosene; Drop-in fuels; Bioelectricity; Biofuelcells; Biohydrocarbons; Fermentation; Photosynthetic microorganisms; Isoprenoids; Farnesene; Bisabolene; Sesquiterpenes; Catalysis; Hydrothermal process; Gasification

Guest Editors:

Dr Indra Neel Pulidindi

Jesus Scientific Consultancy for Industrial and Academic Research (JSCIAR)

Email: indraneelp@jesusconsultancy.com

Professor Aharon Gedanken

Bar Ilan University, Israel

Email: gedanken@mail.biu.ac.il