

## Biofuels from microalgae as future fuel

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### Abstract

Biofuels produced from microalgae are considered as promising one due to its higher areal productivity and lipid content. The biofuels like bio-hydrogen, bioethanol and biodiesel can be produced from microalgae. But the as of now microalgae are mainly cultivated for food supplements and cosmetics usage. Biofuels are considered as low value product as its cost need to be decreased as minimum as possible and targeting a single biofuel from microalgae is not advisable. Researchers around the world have reported production of biofuels from different species of microalgae and its characterization as fuel in internal combustion engines. The higher lipid content of microalgae which varies from 15-65% weight percentage can be utilized for producing biodiesel. The extraction of lipid from microalgae is energy consuming process and this can be balanced by integrated approach of producing three biofuels together from a single microalga. Bio-hydrogen is a cleanest fuel and fuel of future can be produced during the cultivation of microalgae in specially designed photo-bioreactors using bio photolysis process. Also, the extraction of lipid can be accompanied with extraction of value-added pigments and compounds so that the cost incurred with energy used for lipid extraction can be minimized. Finally, the remaining solid microalgae residue can be utilized for bioethanol production.

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### Biography

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