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### Algal Biofuels

Petroleum is a natural resource composed primarily of hydrocarbons. Extracting petroleum oil from the earth is expensive, dangerous, and often at the expenses of the environment. Furthermore, worldwide reservoirs of oil are dwindling rapidly at a time when energy demand is exploding. Costs also accumulate for the processing required to convert petroleum oil into usable fuels such as gasoline and jet fuel.

Algae have gained a significant importance in recent years given their ability to produce lipids, which can be used to produce sustainable biofuel. Algae are a very diverse and simple group of aquatic plant that is widespread across the world. Algae can vary in form from eukaryotic to bacteria, and are spread across the kingdoms plantae, protista, and protozoa. These microalgae are single-cell, photosynthetic organisms known for their rapid growth and high energy content. All forms contain biomass, which can be converted to various renewable fuels. Some algal strains are capable of doubling their mass several times per day. In some cases most of mass comprises of lipids/triglycerides- the same material found in vegetable oils. These bio-oils can be used to produce such advanced biofuels as biodiesel, green diesel, green gasoline, and green jet fuel. This ability can be exploited to reduce global climate change, and treat waste water.

Algae are selected for their high lipid content and better growth under a variety of conditions. Hence, algae is a superior feed stock because it has the potential to provide over hundred times the fuel output, from that of soybeans, the primary crop used for present biodiesel production. Algae farms are also advantageous in their ability to provide growth within a contained environment, drastically reducing water usage compared to conventional agriculture. Therefore, higher oil prices and increased interest in energy, have stimulated new public and private investment in algal biofuels research. Thus, using new and innovative techniques for cultivation, algae may allow bio fuel production to achieve the price and sale of production needed to compete with, or even, replace- petroleum.

### Biography

A Swaroopa Rani has completed her Ph.D at the age of 27 years from Indian Institute of Chemical Technology (IICT), Hyderabad (A.P) & Post doctoral studies from Faculty des sciences St Jerome, Marseille, FRANCE. She has published more than 10 papers in reputed journals. Currently she is a coordinator, Research & Development cell, JNTUH. She has a teaching experience of 6 years & research experience of 12 years & administrative experience of 3 years. Served as member, board of studies, JNTUA & Head, department of Biotechnology, JNTUCEP.

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