

Algae Based Biodiesel

Ecobiofuel Inc has initiated the development of Biodiesel production with Algae. The main goal of the present development is the new technology of industrial flue gases bio-cleaning via photosynthetic consumption of carbon dioxide by microalgae to diminish CO₂ anthropogenic emissions and its effect in global atmospheric greenhouse warming. The supplement technologies for the production of the animals food additives and motor fuels from the algae-produced biomass with the properties similar to the ones of usual hydrocarbon motor petrofuels, are being developed as well. Light and carbon dioxide as the main elements of photosynthesis are necessary for the growth and reproduction of algae. None of the existing ground plants can compete with algae in photosynthesis efficiency. Current bio-engineered strains of algae are capable of doubling their mass every 8 hours. That determines great carbon dioxide utilization rate that makes algae, especially microalgae the ideal photosynthetically-based instrument for CO₂-binding. In addition, in some kinds of algae triglycerides (the base of vegetable oil) content is more than half of their mass. That feature makes algae the best feedstock for biofuels production. Nowadays the obtaining of biofuels which consist of hydrocarbons but not of alcohols and esters, i.e. «the third generation» biofuels is of particular interest. The composition and properties of those fuels are similar to the ones of usual oil motor fuels. The least expensive method of such fuels obtaining is the catalytic decarboxylation (hydrodecarbonylation) of triglycerides of fatty acids derived from algae to hydrocarbons. Such technology does not require the use of methanol that makes it very attractive. That technology is one of the innovative elements of the proposed project. So the development of the optimal technologies for the production of biomass from the microalgae via carbon dioxide from power plants and other industrial flue gases consumption and its processing into motor fuels and the animals food additives in the same continuous process in the high effective modular unit of the optimized design being elaborated is the subject of the present project.