Abstract for Algae Breeding Technology

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INTRODUCTION

The challenge cultivating algae is that they need light to grow, they require either vast acres of land or expensive lighting. Therefore, in order to use algae efficiently, it is necessary to develop algae which require less light to grow in order to realize higher yields. Our partner develops, commercializes and markets technologies (especially algae which require little light to grow) for the production of biomass from algae grown in closed systems.

There are different Algae technologies, such as open ponds or expensive photo bioreactors. The required area for the production of algae biomass is 300-600-fold lower than the required agricultural area when using open ponds or photo-bioreactor technology.
Produced biomass can be applied and utilized in various areas.

Raw Material for Biogas Plants
After extracting algae oil, the remaining algae biomass can be used within biogas plants in which the biogas can be used to generate electricity. The resulting heat can be reused as process heat for cultivation and processing of the algae. The off-gases from the combined heat and power (CPH) Plant (CO_2, NOx) can be utilized to build up the biomass as can the waste from the biogas plant (post fermenter).

Biodiesel from Algae Oil
After extracting the oil contained in the algae it can be used for the production of biodiesel. Algae oil can be directly used as a fuel or chemically modified. The produced biofuels are those of the 2nd generation and therefore not in competition with food producers.

Food and Feed Applications
As an alternative using algae biomass in biogas plants, the protein-rich biomass can be used as food or animal feed. Overall, the algae biomass can be optimally utilized, thus making the whole system very energy efficient.

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FOCUS AREAS

Our key Focus Areas:

1. Food

Covers nutraceutical and pharmaceutical products for human consumption, proteins, omega oils, food supplements and cosmetics etc.

2. Feed

Aquaculture and animal feed, which is not just limited to fish farming, but also general livestock and even domestic animals.

3. Fuel

Green energy, biodiesel, bio-ethanol, bio-gas, bio-oil, and jet fuel.

4. CO2

Ability to sequester CO_2 and implement as profit making plant, rather than cost effects of sequestering.

5. Waste Water Management

The ability of implementing the photo bioreactor into existing waste water plants for water purification through nutrient absorption.

ensymm is a German based premier project consulting company for Life Sciences, serving biotech companies, pharmaceutical industry and food ingredient companies. We provide clients with a variety of business and technology consulting services as well as with specialized teams in various areas of our competence.

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