AMITY UNIVERSITY MAHARASHTRA

Established vide Maharashtra Act No. 13 of 2014, of Government of Maharashtra, and recognized under section 2(f) of UGC Act 1956.

A

Report on

GOAL 7: Affordable and Clean Energy

Sustainable Development Goals

Year 2022

Amity University Maharashtra, Bhatan Post - Somathne, Mumbai - Pune Expy, Panvel, Bhatan Pada, Maharashtra 410206

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GOAL 7: Affordable and Clean Energy

Battery Operated Vehicles on campus

MicroAlgae Cultivation Facility for BioFuel

Amity University Mumbai Hon'ble Vice Chancellor inaugurates a new facility in June 2023 for the Cultivation of Microalgae developed by Dr. Abhishek Guldhe, Associate Professor, under the prestigious Ramalinga Swami Fellowship project funded by Dept. of Biotechnology, Govt. of India.
The facility will treat wastewater and generate microalgal biomass for biofuel, biofertilizer, and bioproduct applications. It will also serve as a hub for interdisciplinary collaboration and research enabling in sustainable development for the researchers and students to explore multifaceted applications.

Microalgae has emerged as a powerful flatform for various applications such as biofuel, feed, fertilizer, nutraceuticals, CO_2 sequestration and wastewater treatment. At Amity University Maharashtra (AUM) campus under an integrated biorefinery approach a microalgae cultivation facility is developed by Dr. Abhishek Guldhe through his Ramalingaswami fellowship project funded by the Department of Biotechnology, Govt. of India. The facility was inaugurated by Hon'ble Vice Chancellor Prof. (Dr.) A W Santhosh Kumar sir.

Microalgae are considered as promising feedstock for biofuels production; however, the cultivation is still unfeasible due to input cost of chemical nutrients and freshwater requirement. Wastewater is comprised of nutrients such as ammonia, nitrates, phosphates, organic carbon etc. which can support microalgal growth. Use of wastewater can improve the economics of microalgae cultivation and reduces the freshwater footprint of the process. During cultivation microalgae also sequester CO_2 for photosynthesis process. The biomass generated can be used for production of biofuels, biofertilizer and various bioproducts.

The facility developed at AUM simultaneously treats wastewater and generates microalgal biomass for biofuel, biofertilizer and bioproducts application. In this facility two open raceway ponds of 200L each are set up for cultivation of microalgae using synthetic media as well as wastewater. The open raceway pond cultivation systems are considered as efficient, cost effective and easy for operation to generate microalgal biomass. In these systems no external light is provided, cultivation is based on natural sunlight. For efficient mixing and aeration paddle wheels are used in open raceway ponds.

The facility is used for student's research projects. In these ponds experiments are conducted for evaluating the feasibility of using raw wastewater and final effluent after treatment for cultivation of microalgae. The wastewater cultivation is also compared with cultivation in synthetic medium. Experiments are also conducted to develop strategy to improve the microalgal biomass yield while using wastewater as nutrient medium.

This facility will serve as a hub for interdisciplinary collaborations, enabling researchers and students to explore the multifaceted applications of algae and contribute to a more sustainable and circular


Latitude: 18.930195
Longitude: 73.163063
Elevation: 48.51±13 m
Accuracy: 11.0 m
Time: 18-07-2023 15:02
Powered by NoteCam


THE NEW INDIA ASSURANCE
MICROALGAE CULTIVATION FACILITY
AMITY INSTITUTE OF BIOTECHNOLOGY
AMITY UNIVERSITY MAHARASHTRA
Latitude: 18.9306
Longitude: 73.162183
Elevation: 48.51±15 m
Accuracy: 4.0 m
Time: 18-07-2023 15:06
Powered by NoteCam


SLUDGE DRYING BEDS
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Longitude: 73.162162
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Accuracy: 3.9 m
Time: 18-07-2023 15:02
Powered by NoteCam


ORGANIC WASTE CONVERTER NO. 1
Latitude: 18.930554
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Accuracy: 9.5 m
Time: 18-07-2023 15:03
Powered by NoteCam


Latitude: 18.930612
Longitude: 73.16225
Elevation: 48.51±13 m
Accuracy: 11.0 m
Time: 18-07-2023 15:03
Powered by NoteCam


MICROALGAE CULTIVATION FACILITY


POND-①
POND-②
START DATE: 04/06
CONDITIONS:-
ANALYSIS-


MICROALGAE CULTIVATION FACILITY


01.01.2000 08:34


01.01.2000 08:28

Solar panel in Campus