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NOVEL SOLVENT EXTRACTION FOR EXTRACTION OF OIL FROM ALGAE BIOMASS GROWN IN DESALINATION REJECT STREAM

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Abstract

Renewable and carbon neutral biofuels are necessary for environmental and economic sustainability. The viability of the first generation biofuels is however questio nable because of the conflict with food supply. Algae based biofuels are considered as a viable alternative as the oil productivity of many algae exceeds that of oil crops. This algae based biomass has the ability to meet the partial energy demands and helpful in protection of the environment. Extraction of fuels from microalgae biomass is a challenging task as it is critical in determining the overall economics of fuel production. It has been found that the conventional extraction methods employed warrant either modernized equipment or requires difficult process conditions. The focus of the novel extraction method is to use the combination of solvent extraction and magnetic stirred agitation to expel the oil from the biomass. This methodology is proved to be cost effective when compared to extraction methods like super critical extraction, nano -assisted extraction which are widely under research. This research work aims to use the magnetic stirrer based extraction for sustainable biofuel production. The research work has been found to be successful in its nascent attempt of using natural algae biomass for the extraction of oil. This research work may lead to new dimension if the magnetic stirred or electromagnetic assisted agitation is employed on a commercial scale.