BIOFUEL FROM CULTURED ALGAE

NURUL LIYANA BINTI ROSLI

FACULTY OF CHEMICAL ENGINEERING

UNIVERSITI TEKNOLOGI MARA

SHAH ALAM

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DECLARATION

"I hereby declare that this report is the result of my own work except for quotations and summaries which have been duly acknowledged."

Nurul Liyana Binti Rosli
2006844550

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ABSTRACT

The purpose of this study are to investigate the potential of the cultured algae in producing biofuel using suitable solvents extraction and to improve the production of biofuel by using the different proposed method by using cultured algae and solvent extraction. The aims of this research study are to investigate cultured algae in producing biofuel compared to fresh algae and to investigate propanol as one of the effectiveness solvent extraction in producing biofuel like hexane and methanol as the solvent extraction. However, The scope of the research study are to produce biofuel using cultured algae and to study the effectiveness of the solvent extraction until the cultured algae can produce even small conversion of biofuel. The limitations of the research study are to culture *B. braunii* algae and extract biofuel of the algae by using propanol as the solvent extraction. Hexane and methanol are also use as the solvent extraction to make comparison with the propanol. The methods that use in the research study are algae cultivation, extraction of biofuel using hexane, propanol and methanol, determination of energy and determination of fatty acids. The results that obtain from the research study is the algae cultivation method was done successfully since the algae was still maintained the same as it live at their real habitat which is at former reservoir. Biofuel that extract using propanol as the solvent extraction has energy content that exceed the standard value of energy content of biofuel which is 37.8 MJ/kg and the biofuel that extract using propanol also contained all of the six fatty acids that measure the content of biofuel. Thus, it can be conclude that propanol can be use as solvent extraction to extract the biofuel from algae that was cultured using suitable requirements.