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BIODIESEL PRODUCTION CATALYZED BY FUNGUS CELLS IMMOBILIZED IN FIBROUS SUPPORTS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT

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BIO TECHNOLOGY

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ABSTRACT

Biodiesel has been defined as the monoalkyle esters of long-chain fatty acids, preferentially methyl and ethyl esters, derived from renewable feedstock, such as vegetable oils or animal fats. Its properties are close to diesel fuels, and therefore biodiesel becomes a strong candidate to replace the diesel fuel.

Rhizopus Oryzae fungus cells have been demonstrated to efficiently catalyze the methanolysis of vegetable oils for biodiesel production in solvent-free systems. To efficiently reuse the whole cell biocatalyst, the cells can be immobilized on a nonwoven fabric. In contrast to extracellular lipase, no enzyme purification and immobilization steps are required when preparing the immobilized whole cell biocatalysts since cell immobilization could be achieved spontaneously during cell growth.

Key words: Biodiesel, *Rhizopus oryzae*, fungus cells, whole cell biocatalyst, non-woven fabric