

### Development of Lipase immobilized magnetic nanoparticle catalyst for Bio-diesel application

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A monoalkyl esters of fatty acid is produced by the transesterification of triglyceride, which is one of the main constituents of oils and alcohols and considered as environmental friendly bio-fuel with the advantages of non-toxicity and low emissions. So far, the homogeneous acid or base catalysts are generally used for the industrial production of Bio-diesel. In the process, however, side reactions occur and an additional separation step to remove the catalysts is required. Thus, enzyme catalyzed transesterification has attracted as an alternate method. In this work, ionic liquid immobilized on magnetic nanoparticles (MNPs) were synthesized and investigated as a solid support for the immobilization of lipase and the possibility of bio-diesel production will be discussed.