

Recycling of solvent for in situ transesterification of microalgae

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In situ transesterification is a very promising methods for producing biodiesel from microalgae. One of the problems of in situ transesterification is its excessive usage of the solvent. Therefore, recycling the solvent is essential to meet its economical feasibility. In this research, several times of solvent recycling with wet biomass of *Nannochloropsis salina* was studied. The solvent includes methanol, homogeneous acid catalyst and also fatty acid methyl ester (FAME, biodiesel). The solvent was reused after only simple filtration for removal of algal residues. The experiment was repetitively carried out with a 2 L scale batch reactor. GC and FTIR were used for both quantitative and qualitative analyzing of FAME. Despite accumulation of water from the microalgal cell, FAME were produced successfully for several times of trial, with high yield