

## **Life cycle assessment of biodiesel production using alkali, soluble and immobilized enzyme catalyst processes**

### **Abstract**

This study deals with the Life Cycle Assessment (LCA) of three different catalytic processes for biodiesel production. In the LCA study, a "cradle to gate" approach was adopted to estimate the environmental impact of different catalytic processes such as immobilized, soluble biocatalyst and alkali catalyst. The results revealed that, biodiesel production using immobilized biocatalyst has less environmental impact compared to alkali and soluble biocatalyst. The environmental impact of the immobilized biocatalyst depends on the reusability factor.