

## **Mikrobiologiczne metody otrzymywania biodiesla**

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### **Biodiesel obtained by microbiological methods**

#### **Summary**

Biodiesel – a fuel for diesel engines – represents an alternative environment-friendly source of energy obtained from renewable materials. Biodiesel is produced in triacylglycerol transesterification by alcohols such as methanol or ethanol and comprises fatty acid methyl and ethyl esters. For ecological reasons, the enzymatic transesterification is becoming of increasing interest, yet high price of enzymes obstructs its full industrial application. This work presents the latest achievements in biodiesel enzymatic production that refer both to isolated lipases as well as microorganisms that synthesize these enzymes. In the latter case, the work focuses on methods that allow for increasing biocatalyst activity and stability through changes in microorganism culture conditions, their immobilization and application of genetic engineering techniques.

#### **Key words:**

biodiesel, transesterification, lipases, microorganisms, genetic engineering

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