

专论综述

气相色谱法在生物柴油生产工艺研究中的应用

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收稿日期 2005-10-12 修回日期 2005-12-14 网络版发布日期 2006-10-13 接受日期

摘要 综述了气相色谱法在生物柴油生产工艺研究中的应用,包括反应产物和生物柴油产品中脂肪酸甲酯含量和分布的测定,单脂肪酸甘油酯、二脂肪酸甘油酯和三脂肪酸甘油酯含量的测定,游离脂肪酸含量的测定以及微量甲醇含量的测定等。讨论了进样方式、色谱柱类型、硅烷化等因素对反应产物组成测定的影响;提出了一种采用双柱压力反吹的方式测定生物柴油产品中微量甲醇含量的方法:采用正丙醇作内标,甲醇与内标通过预切柱进入分析柱后,通过压力变化,将其余组分通过分流出反吹出色谱系统;采用极性聚乙二醇色谱柱测定了8种不同植物油中脂肪酸甲酯的含量和分布。

关键词 [气相色谱](#) [生物柴油](#)

分类号

Application of Gas Chromatography in the Research of Biodiesel Processing

Abstract

Applications of gas chromatography in the research of biodiesel processing are reviewed with 27 references, including the analysis of fatty acid methyl esters (FAME) in the reaction products and final biodiesel, the determination of mono-, di- and tri-glycerides, the contents and distribution of free fatty acids, and the determination of trace methanol in biodiesel. The effects of various factors for analysis of the reaction products are discussed, such as injection mode, column type and silylation. A method for the determination of trace methanol in biodiesel products with dual-columns and pressure backflush system is proposed. 1-Propanol was used as the internal standard. After methanol and 1-propanol entered the analytical column through pre-column, the pressure was changed to backflush the heavy components through the split vent. A polar PEG-20M column was applied for the analysis of the contents and distribution of FAME in biodiesels from 8 different vegetable oils.

Key words [gas chromatography](#) [biodiesel](#)

DOI:

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