

酶促合成油酸香茅醇酯的超临界连续反应-分离过程

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摘要 将固定床动态酶促反应过程和超临界二氧化碳萃取分离过程相耦合,设计并建立了一套超临界相反应分离一体化的实验装置。在该装置上初步考察了反应压力和温度对脂肪酶催化油酸甲酯和外消旋香茅醇酯交换反应的影响。结果表明,我们所建立的反应装置能有效地实现反应分离一体化过程;当体系压力接近二氧化碳的临界压力时反应速率最高;9MPa压力下反应温度为328K时反应转化率最高,而在14MPa压力下反应转化率在308K~328K之间随着温度的升高而增大。

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The continuous reaction - separation process for the lipase - catalyzed synthesis of citronellyl oleate in supercritical CO₂

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Abstract An apparatus for the continuous reaction - separation process using supercritical CO₂ as solvent has been developed. The effects of pressure and temperature on the reaction of lipase - catalyzed transesterification of methyl oleate and citronellol have been studied. The results showed that the continuous reaction - separation process in supercritical CO₂ could be well carried out in the established apparatus; the initial rate of the transesterification reaction is the highest at the pressure close to the critical pressure of CO₂. When the pressure is fixed at 9MPa, a maximum in conversion appears at 328K. When the temperature is varied in the range of 308K~328K with the pressure fixed at 14MPa, the initial rate increases with the temperature.

Key words [ENZYMATIC](#) [EXTRACTION](#) [LIPASE](#) [METHYLOLEATE](#) [CITRONELLOL](#)

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