

## 锆改性固体酸催化合成脂肪酸甲酯工艺

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摘要: 制备Zr改性的固体超强酸S202-8—TiO<sub>2</sub>/Fe<sub>3</sub>O<sub>4</sub>作为脂肪酸甲酯的合成催化剂,通过单因素和正交试验考察了该催化剂催化合成脂肪酸甲酯的催化特性。试验表明:甲醇脂肪酸液料比3mL/g,催化剂投入量12%,反应温度65℃,反应时间6h的条件下,酯化率达到94%,产品得率90%,且催化剂回收再次利用效果较好。Solid acid catalyst can be applied to the transesterification as a substitute of homogeneous acid catalyst. Zr-modified solid super acid S202-8—TiO<sub>2</sub>/Fe<sub>3</sub>O<sub>4</sub> was prepared as the catalyst for FAME production and the catalysis activity was studied by single-factor and orthogonal experiments. The results show that the esterification rate and product yield can realize to 94% and 90% respectively when the volume to mass ratio of methyl alcohol to acid is 3mL/g, the reaction temperature is 65℃, the reaction time is 6h, and the amount of catalyst is 12% of mass of fatty acid. The recovered catalyst can be reused effectively.

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