

论文

PEG型酸性温控离子液体中芳香酸和醇的酯化反应

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摘要:

报道了该催化体系在芳香酸和醇酯化反应中的应用. 研究发现, 该离子液体具有优良的催化性能, 产品易分离, 催化剂可循环使用且活性不降低, 催化剂不易流失, 实现了均相催化剂的高效回收和再利用.

关键词: 聚乙二醇(PEG) 酸性离子液体 温控 酯化 两相

Esterification of Aromatic Acids and Alcohols in Acidic PEG Thermoregulated Ionic Liquid

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Abstract:

Two Acid sites PEG thermoregulated ionic liquid was prepared and used as the catalyst for the esterification of aromatic acid and alcohol. The yield of esterification catalyzed by ionic liquid was 99% in 1 h at 80 °C with 0.1%(molar fraction) acidic PEG ionic liquid. The catalyst system could be applied to a wide range of esterification of aromatic acids and alcohols. The ionic liquid has the advantages of both homogeneous and heterogeneous phase at different temperature with a high product yield and the ease of product as well as catalyst separation. The ionic liquid studied plays the role of catalyst and is recycled up to seven times without any significant loss of activity. Moreover, by simple phase separation the ionic liquid phase could be re-utilized up to seven times without leaching.

Keywords: PEG Acidic ionic liquid Thermoregulation Esterification Two phase

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参考文献:

1. Stivers J. T., Nagarajan R.. Chem. Rev.[J], 2006, 106(8): 3443—3467
2. ZHENG Ming-Dong(郑明东), CHEN Tong-Yun(陈同云). Chem. J. Chinese Universities(高等学校化学学报)[J], 2006, 27(6): 1086—1090
3. WANG Hui-Ping(王会萍), SHANG Yan-Mei(商艳梅), WANG Lei(王磊), *et al.*. Chem. J. Chinese Universities(高等学校化学学报)[J], 2006, 27(5): 894—896
4. Horvath I. T., Rabai J.. Science[J], 1994, 266: 72—73
5. Poliakof M., Fitzpartrick J. M.. Science[J], 2002, 297: 807—808
6. Lynnette A. B., Dan H., Eric J. B., *et al.*. Nature[J], 1999, 399: 28—29
7. Robin D. Rogers, Kenneth R. Seddon. Science[J], 2003, 302: 792—793
8. LIU Ye(刘晔), LI Min(李敏), LU Yong(路勇), *et al.*. Chem. J. Chinese Universities(高等学校化学学报)[J], 2007, 28(4): 723—726
9. LIU Yao-Hua(刘耀华), CUI Peng(崔鹏), SUN Jing(孙靖), *et al.*. Chem. J. Chinese Universities(高等学校化学学报)[J], 2006, 27(12): 2314—2318
10. ZHANG Qing-Shan(张青山), LIU Ai-Xia(刘爱霞), GUO Bing-Nan(郭炳南), *et al.*. Chem. J. Chinese Universities(高等学校化学学报)[J], 2005, 26(2): 340—342
11. LI Fu-Wei(李福伟), XIAO Lin-Fei(肖林飞), XIA Chun-Gu(夏春谷). Chem. J. Chinese Universities(高等学校化学学报)[J], 2005, 26(2): 343—345
12. Ganske F., Bornscheuer U. T.. Org. Lett.[J], 2005, 7(14): 3097—3098
13. Ranu B. C., Banerjee S.. Org. Lett.[J], 2005, 7(14): 3049—3052
14. Xing H., Wang T., Zhou Z., *et al.*. Ind. Eng. Chem. Res.[J], 2005, 44(11): 4147—4150
15. Xu J. M., Liu B. K., Wu W. B.. J. Org. Chem.[J], 2006, 71(10): 3991—3993
16. Li H. L., Yu S. T., Liu F. S., *et al.*. Catal. Commun.[J], 2007, 8: 1759—1762
17. Sadula S., Sanjit K., Reddy P. S., *et al.*. Tetra. Letter[J], 2007: 6962—6965
18. Gibson H. W., Yamaguchi N., Jones J. W.. J. Am. Chem. Soc.[J], 2003, 125(12): 3522—3533

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2. 刘菁 ; 庄贵生 ; 贾春平 ; 金庆辉 ; 王惠民 ; 赵建龙, ; 杨梦苏 .微流控芯片上同工酶的孵育及活性检测[J]. 高等学校化学学报, 2006,27(7): 1223-1226
3. 职慧珍, 罗军, 马伟, 吕春绪.新型PEG双子温控离子液体中的缩醛反应[J]. 高等学校化学学报, 2008,29(10): 2007-2010
4. 李志明, 陈恒武, 马丹.玻璃芯片上温控微阀的制备和微流体控制性能研究[J]. 高等学校化学学报, 2009,30(1): 32-36

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