

环氧化物羰基化反应研究新进展

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摘要 通过催化的方法在有机化合物分子中引入羰基和其它基团而成为含氧化合物的羰基化反应, 具有“原子经济性”反应的高选择性和对环境的友好性, 可充分利用资源和保护环境, 符合绿色化学发展趋势等优点, 备受学术界及工业界青睐. 综述了近年来羰基钴金属化合物催化的环氧化物和二氧化碳羰基化反应研究的新进展, 涉及的反应类型主要包括羰基化扩环、羰基化开环共聚以及羰基化开环, 讨论了不同类型反应的相关机理, 并展望了该领域的研究前景.

关键词: 环氧化物 羰基化扩环 羰基化开环共聚 羰基化开环 反应机理

Abstract: Carbonylation reactions that introduce carbonyl moiety into organic and inorganic substrates have the advantages of atom economical selectivity and environmental benignancy. Recently, it has been one of the challenging and attractive subjects in the field of value-added utilization of C₁ resources and a bridge between petrochemical industry and C₁ chemistry. The important transformation has drawn considerable attention from both academia and industry. We aim to present recent progress in cobalt carbonyl complexes catalyzed carbonylation of epoxides, including ring-expansion carbonylation, ring-opening carbonylative copolymerization, and ring-opening carbonylation. The development prospects are also discussed.

Keywords: epoxide, ring-expansion carbonylation, ring-opening carbonylative copolymerization, ring-opening carbonylation, reaction mechanism

收稿日期: 2012-05-09; 出版日期: 2012-08-17

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樊启佳, 刘建华, 陈静等. 环氧化物羰基化反应研究新进展[J]. 催化学报, 2012, V33(9): 1435-1447

FAN Qi-Jia, LIU Jian-Hua, CHEN Jing etc. Recent Progress in Carbonylation of Epoxides[J]. Chinese Journal of Catalysis, 2012, V33(9): 1435-1447

链接本文:

http://www.chxb.cn/CN/10.3724/SP.J.1088.2012.20515 或 http://www.chxb.cn/CN/Y2012/V33/I9/1435

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