

金属四苯基卟啉-次氯酸钠模拟体系中芳香醛氧化反应的研究

李存发,郑维忠,王先元,李广年

中国科学院成都有机化学研究所;中国科学院上海有机化学研究所金属开放实验

收稿日期 修回日期 网络版发布日期 接受日期

摘要 研究了以次氯酸钠为氧化剂在两相条件下芳香醛氧化反应中锰(III)-卟啉的催化性质,在TPPMn(III)醋酸盐,TPPFe(III)氯化物,TPPCo(II)和TPPNi(II)催化剂中(四苯基卟啉,TPP),前二个化合物呈现催化活性,研究表明,OXO-金属卟啉的形成是反应的关键步骤。

关键词 [催化](#) [氧化](#) [氯化物](#) [次氯酸钠](#) [铁络合物](#) [金属络合物](#) [苯甲醛](#) [锰络合物](#) [乙酸盐](#) [卟啉](#) [金属卟啉](#)

分类号 [0627](#)

Oxygenation of aromatic aldehydes by the metallotetraphenylporphyrin-sodium hypochlorite system

LI CUNFA,ZHENG WEIZHONG,WANG XIANYUAN,LI GUANGNIAN

Abstract The catalytic behaviors of Mn(III)-porphyrin in the oxidation of aromatic aldehydes with NaOCl as oxidant under two-phase condition have been investigated. When TPPMn(III)OAc (TPP = tetraphenylporphyrin), TPPFe(III)Cl, TPPCo(II), and TPPNi(II) were used as catalysts, only TPPMn(III)OAc and TPPFeCl exhibit distinct activities. With TPPMn(III)OAc as catalyst, UV - visible spectral changes of the fourth band from 425 nm to 478 nm were observed during the course of the oxygen transfer, suggesting that oxo-manganese(V) porphyrin is the key element for the oxygenation of aldehydes. Electron withdrawing para-substituents of TPPMnOAc lead to an increase in activities and stabilities. Electron withdrawing ortho substituents increase the stabilities of manganese porphyrins, but decrease their activities.

Key words [CATALYSIS](#) [OXIDATION](#) [CHLORIDE](#) [SODIUM HYPOCHLORITE](#) [IRON COMPLEX](#) [METAL COMPLEX](#) [BENZALDEHYDE](#) [MANGANESE COMPLEX](#) [ACETATE](#) [PORPHYRIN](#) [METALLOPORPHYRIN](#)

DOI:

通讯作者

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(0KB\)](#)

▶ [HTML全文\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“催化”的 相关文章](#)

▶ 本文作者相关文章

- [李存发](#)
- [郑维忠](#)
- [王先元](#)
- [李广年](#)