

四甲基二硅桥连二(环己基环戊二烯基)四羰基二铁的合成、结构及热重排反应研究

孙秀丽,王佰全,徐善生,周秀中,翁林红

南开大学化学系;复旦大学化学系

收稿日期 修回日期 网络版发布日期 接受日期

摘要 1, 2-二(环己基环戊二烯基)四甲基二硅烷与 $\text{Fe}(\text{CO})_5$ 在二甲苯中加热回流生成二铁化合物 $[\text{Me}_2\text{SiSiMe}_2][(\text{c-C}_6\text{H}_{11}\text{-C}_5\text{H}_3)\text{Fe}(\text{CO})]_2(\mu\text{-CO})_2$ (2)。通过柱层析分离到2的顺反两种异构体2c和2t, 并分别进行热重排反应, 发现顺式底物2c重排生成反式重排产物 $[\text{Me}_2\text{Si}(\text{c-C}_6\text{H}_{11}\text{C}_5\text{H}_3)\text{Fe}(\text{CO})_2]_2$ (3t), 而反式底物2t重排则生成顺式重排产物3c。这表明重排反应是立体专一性的。通过X射线衍射分析测定了化合物2c和3t的晶体结构。

关键词 [硅烷 P](#) [X射线衍射分析](#) [晶体结构](#) [重排反应](#) [铁化合物](#) [专一性](#)

分类号 [0621](#)

Synthesis, Structure and Thermal Rearrangement Reaction of Tetramethyldisilane bridged Bis(cyclohexylcyclopentadienyl) tetracarbonyldiiron

Sun Xiuli, Wang Baiquan, Xu Shansheng, Zhou Xiuzhong, Weng Linhong

State Key Laboratory of Elemento-Organic Chemistry, Department of Chemistry, Nankai University

Abstract The reaction of 1,2-bis(cyclohexylcyclopentadienyl) tetramethyldisilane with $\text{Fe}(\text{CO})_5$ in refluxing xylene afforded a mixture of cis and trans isomers of the diiron complex $(\text{Me}_2\text{SiSiMe}_2\text{-C}_6\text{H}_{11}\text{C}_5\text{H}_3\text{FeCO})_2(\mu\text{-CO})_2$ (2), which were separated by column chromatography. When the two isomers were heated in refluxing xylene, the cis substrate 2c rearranged to the trans product $[\text{Me}_2\text{Si}(\text{c-C}_6\text{H}_{11}\text{C}_5\text{H}_3)\text{Fe}(\text{CO})_2]_2$ (3t), while the trans substrate 2t to the cis product 3c. This indicates that the rearrangement reaction is stereospecific. Molecular structures of 3c and 4t were determined by X-ray diffraction analysis.

Key words [SILANE P](#) [XRD](#) [CRYSTAL STRUCTURE](#) [REARRANGEMENT REACTION](#) [IRON COMPOUNDS](#) [SPECIFICITY](#)

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“硅烷 P”的相关文章](#)

▶ 本文作者相关文章

- [孙秀丽](#)
- [王佰全](#)
- [徐善生](#)
- [周秀中](#)
- [翁林红](#)