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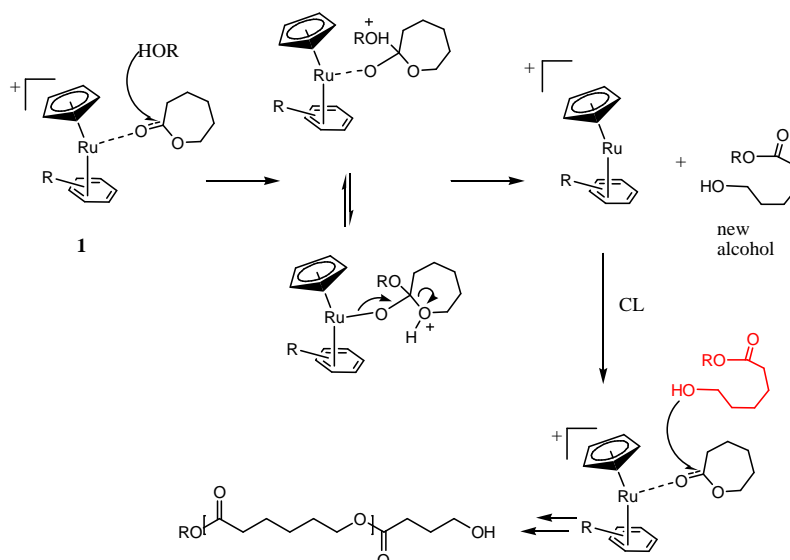


Polymerization of ϵ -caprolactone using Ru(II) catalysts: mechanistic insights

A. Valente^{a,b}, P. Zinck^a, A. Mortreux^a, M. Visseaux^a, Paulo J. G. Mendes^b, Tiago J. L. Silva^b, M. Helena Garcia^{*,b}

^aUniversité Lille Nord de France - ENSCL, Unité de Catalyse et Chimie du Solide, UMR CNRS 8181, 59652 Villeneuve d'Ascq, France - +33 3 20 43 65 86; ^bCentro de Ciências Moleculares e Materiais, Faculdade de Ciências da Universidade de Lisboa, Campo Grande, 1749-016 Lisboa, Portugal - lga.garcia@fc.ul.pt / +351 21 7500 972

Ring-opening polymerization of cyclic esters is an important field in polymerization chemistry due to the biocompatibility and biodegradability of the obtained materials.¹ Even if the literature concerning the ROP of lactones is vast, there is not detailed research for Group 8 transition metal based catalysts or initiators. It was only in 2006 that was reported the first example regarding the use of ruthenium derivatives in ROP of lactones.² In this contribution we present the results of the polymerization of ϵ -caprolactone by $[\text{Ru}(\eta^5\text{-C}_5\text{H}_5)(\eta^6\text{-substituted arene})][\text{PF}_6]$ complexes in the presence of isopropyl alcohol. By *in situ* NMR techniques it was found that this polymerization proceeds via an activated monomer mechanism. A DFT study of the polymerization initiation step will also be presented in order to corroborate this mechanism.



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