TERMINAL OLEFIN ISOMERIZATION REACTIONS CATALYZED BY POLY(SILOXANE)-SUPPORTED $RU_3(CO)_{12}$: THE EFFECT OF THE SUPPORT ON THE CATALYST SELECTIVITY, ACTIVITY AND STABILITY

Hikmat S. Hilal, Mohammad A. Sulaiman, Waheed J. Jondi
Shukri Khalaf and Moayyad Massoud (in part)
Department of Chemistry, An-Najah N. University, Nablus, P.O Box 7, West Bank, Palestine, (via Israel),

Abstract: Dodecacarbonyltriruthenium(0), $Ru_3(CO)_{12}$, **1**, has been chemically anchored to the aminated polysiloxane surface, **2**. The resulting supported ruthenium complex, **3**, was evaluated as catalyst for the olefin isomerization reactions. Contrary to its homogeneous catalyst counterpart, **1**, the supported catalyst **3** showed exceptionally high selectivity towards 1-octene isomerization, and trans-2-octene was the sole product of the reaction mixture. The olefin isomerization reaction was markedly activated by the presence of the tertiary silane $(EtO)_3SiH$. No hydrosilylation reaction products were detected. Preliminary kinetic study indicated catalysis by lower nuclearity catalytic species, where the cluster fragments during the reaction process. The effects of different reaction parameters on the rate of the reaction have been investigated..