

البحث الثامن (رقم 41 في قائمة البحوث الكلية)

Title	Ru-Based Complexes as Heterogeneous Potential Catalysts for the Amidation of Aldehydes and Nitriles in Neat Water
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Five novel heterogeneous mononuclear complex-anchored Ru(III) have been efficiently sono-synthesized and characterized by utilizing several analytical techniques. The assembled complexes could be utilized as effective, robust and recyclable (up to eight consecutive runs) catalysts for one-pot transformation of a vast array of nitriles and aldehydes to primary amides in H₂O under aerobic conditions. Moreover, some unreported di- and tetra-amide derivatives were obtained also under the optimal conditions. The results of ICP/OES analysis demonstrated that there is no detected leaching of the recycled catalyst, which suggests the real heterogeneity of the present protocol. The present Ru-complexes exhibited superiority compared to other reported catalysts for amide preparation in terms of low catalyst load, short reaction time, low operating temperature, no hazardous additives required, and high values of TON (990) and TOF (1980 h⁻¹).