

### البحث الخامس (رقم 38 في قائمة البحوث الكلية)

<b>Title</b>	Water as a solvent for Ru-catalyzed click reaction: Highly efficient recyclable catalytic system for triazolocoumarins synthesis
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A new family of Ru (III) complexes has been synthesized, characterized and their catalytic performance has been tested for alkyne–azide cycloaddition (AAC) in water under ultrasonic irradiation conditions. These complexes are found to be effective heterogeneous catalysts for the regioselective synthesis of 1,4-disubstituted-1,2,3-triazoles giving access to these products in excellent yields. The catalyst system is equally active for one-pot multi-component protocol of the AAC reactions. Also, successive sequencing of Huisgen reaction with Knoevenagel condensation reaction results in the effective assembly of a diversified hitherto unreported 1,2,3-triazolyl coumarin frameworks. In present strategy, the catalyst could be easily isolated by simple filtration and reused up to eight consecutive cycles without significant drop in the reaction yields. During the leaching experiment, there is no leaching amount of the catalyst was detected, suggesting true heterogeneity in the catalytic system. The results of gram-scale reaction and green metrics calculations also confirmed the sustainability and industrial applicability of the current catalytic protocol.