Polymer Supported Ni(salen) Catalysts and Ni(II)-salen zeolite Y as Catalysts for Heterogeneous Electrohydrocyclization Reactions

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Polymer supported Ni(salen) and zeolite encapsulated Ni(salen) were synthesized and investigated as electrocatalysis agents in the electrohydrocyclization reaction using a reticulated vitreous carbon electrode in dimethylformamide. Cyclic voltammetry was used to establish the reduction potentials of the heterogeneous catalysts using a modified glassy carbon electrode. Additionally, the corresponding homogeneous catalysts were also synthesized and studied. Bulk electrolysis experiments revealed that the heterogeneous catalysts were superior to the homogeneous catalysts with both shorter reaction times and cyclized product yields.

Keywords: electrocatalysis; organic electrochemistry; zeolite; nickel salen

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