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Catalytic Reactions of Alkynes in Aqueous Conditions

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Poster Presentation P79

CATALYTIC REACTIONS OF ALKYNES IN AQUEOUS CONDITIONS

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Catalysts are very important in chemistry and industry. They lower energy and monetary costs, time, and temperature of chemical reactions. We have found in literature a way to dimerize (add together) alkynes via aqueous conditions to form enones (a ketone functional group next to a double bond); a catalyst is necessary for this reaction. There is potential for improvement for this type of reaction. The catalytically active species we are studying presently is Rhodium based. Our goal is to investigate ways of increasing the efficiency and selectivity of the catalyst system. The product mixtures are analyzed using Infrared Spectroscopy, Nuclear Magnetic Resonance Spectroscopy, and Gas Chromatography. We hope to find a way to adjust the conditions in such a way to allow the reaction to occur at a lower temperature, shorter time, and/or higher selectivity.

There is potential use for these kinds of reactions in industry, for example pharmacy, since there is a high demand for cost efficient, time-saving, and stereo-specific reactions.