

# SYNTHESIS AND CHARACTERIZATION OF SOLIDS WITH STRONG ACIDIC AND BASIC PROPERTIES, APPLIED AS CATALYSTS IN THE SYNTHESIS OF IONONES

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**I**onones are fine compounds of isoprenoid nature of high commercial value that can be synthesized in two stages catalyzed in homogeneous phase: aldol condensation between citral and acetone catalyzed by a mineral base to produce pseudoionone (PI), and cyclization of pseudoionone catalyzed by mineral acid. This route generates operational problems and environmental pollution, which can be avoided or minimized by the use of heterogeneous catalysts. In the present work, we report the synthesis of ionones using mixed oxides ( $\text{MgO-Al}_2\text{O}_3$ ,  $\text{CaO-Al}_2\text{O}_3$ ,  $\text{SrO-Al}_2\text{O}_3$ ,  $\text{MgO-CaO-Al}_2\text{O}_3$  and  $\text{CaO-SrO-Al}_2\text{O}_3$ ) and sulfated silica as possible catalysts. The materials were characterized by the techniques, Energy-dispersive X-ray spectroscopy (EDS), discontinuous Reception (DRX), scanning electron microscopy (SEM), DTP and nitrogen fisisorción. The reaction mixtures were analysed by GC-MS technique, obtaining PI with yield up to 79% with the  $\text{CaO-Al}_2\text{O}_3$  oxide, while the best ion one yield was obtained using silica SBA-15 treated with 1M aqueous solution in  $\text{H}_2\text{SO}_4$ : 16%  $\beta$ -ionone at 60°C and 17%  $\alpha$ -ionone at 80°C, under reflux conditions. The production of PS and retinoles during the condensation reaction suggests that it is possible to synthesize oxide materials with acid/base properties that promote ionone synthesis in a single step.

## Biography

Rodrigo González is currently pursuing PhD in Chemical Sciences, has completed Master's degree in Semiconductor Devices and a degree in Chemical Engineering. He has worked as a Science Teacher in different institutions and participated in international congresses as Japan or Mexico.

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