

TRABALHOS APRESENTADOS EM EVENTOS

CHAGAS, L. H. et al. Butadiene from Ethanol Employing Doped *t*-ZrO₂. In: INTERNATIONAL SYMPOSIUM ON ACID-BASE CATALYSIS, 8., 2017, Rio de Janeiro. **Book of Abstracts...** Rio de Janeiro: [s.n.], 2017. p. 1-2. Oral Presentation 30 - ID 142.

RESUMO: The synthesis of 1,3-butadiene (BD) from ethanol is a complex reaction system in which the mechanism involves several steps. In order to better understand this reaction system, the use of simple zirconia-based catalysts as well as physical mixtures containing Cu/ZnO/Al₂O₃ (CZA) was evaluated. The catalysts were characterized by the following techniques: XRD, SEM/EDS, BET, TPD of NH₃ and TPD of CO₂. Moreover, isopropanol decomposition and Meerwein-Ponndorf-Verley (MPV) between acetone and ethanol were used as model reactions to better describe the catalysts behavior. The experiments reveal that the *t*-ZrO₂ catalyst is the most active in the MPV step. Adding Ag or Na to *t*-ZrO₂ increase the 1,3-butadiene selectivity but decrease the MPV activity leading to heavy compounds. However, employing low amount of CZA is possible to achieve high BD productivity and low ethene selectivity. The results show that for *t*-ZrO₂ based catalysts the formation of acetaldehyde is the limiting step of the reaction.

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