Prediction for alkylation of isobutane with 2-butene using acidic ionic liquid

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In this study, ionic liquid has been employed as a green catalyst in alkylation of isobutane with 2-butene. One of acid ionic liquids, 1-octyl-3-methylimidazolium bromide aluminum chloride, was used in the reaction. Effect of liquid hourly space velocity (LHSV), reaction temperature and composition of ionic liquid was investigated over 1-Octyl-3-methylimidazolium bromide aluminum chloride. Under the identical reaction conditions, the optimum reaction temperature was 80 oC and ionic liquid with anion composition of 0.56 showed higher reaction activity. Moreover, a correlation model is developed with statistical approach to predict the product yields.