

Supplementary material

Activated bentonite nanocomposite for the synthesis of solketal from glycerol in liquid phase

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Kinetic model

In order to determine the kinetic expression that represents the experimental data, the Langmuir-Hinshelwood-Hougen-Watson model (LHHW) was proposed, considering the adsorption of the different compounds individually (glycerol, acetone, water or solketal) in the denominator of Eq. 1. The results at 60° are presented in Fig. S1 and Tab. S1 as an example. As solketal and water concentrations are always the same, the data treatment led to the same results for the adsorption parameters.

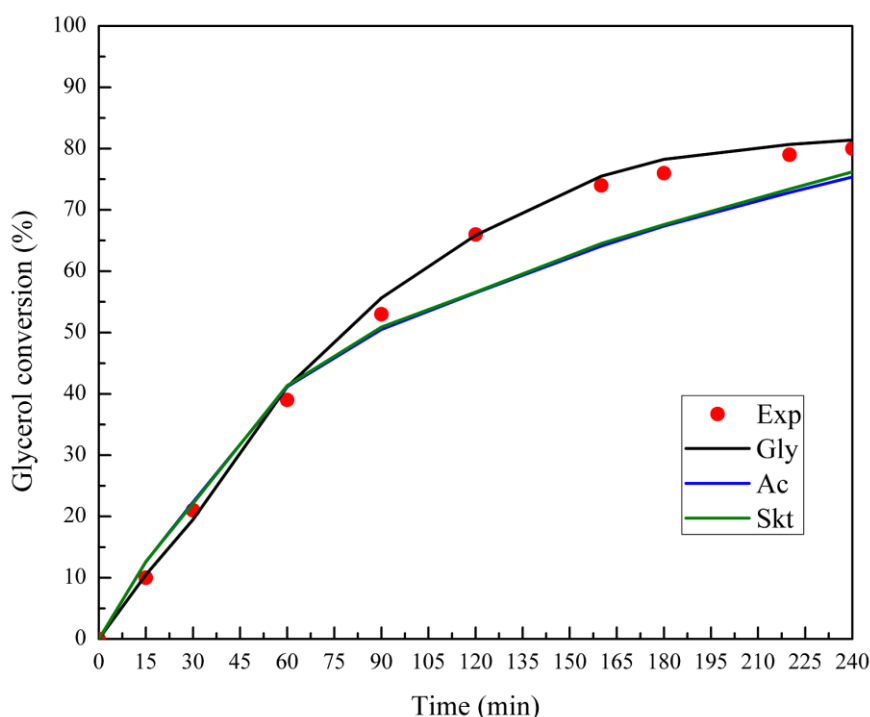


Fig. S1. Results of conversion vs. time considering the adsorption of different compounds.

Parameter	Gly	Ac	Skt/W
k [mol g ⁻¹ L ⁻¹ sec ⁻¹]	0.0905 ± 0.0538	21.159 ± 7363.533	0.01251 ± 0.00317
K_{eq}	0.626 ± 0.0889	1.680 ± 6.192	3.136 ± 15.759
K_i	1.271 ± 0.630	3.638 ± 648.805	0.00001 ± 0.288

Tab. S1. Adsorption parameters values.