

## Supplement

# Kinetic Model Development of the Oligomerization of High Olefin Containing Hydrocarbon By-products to Clean Engine Fuels on Amberlyst Catalyst

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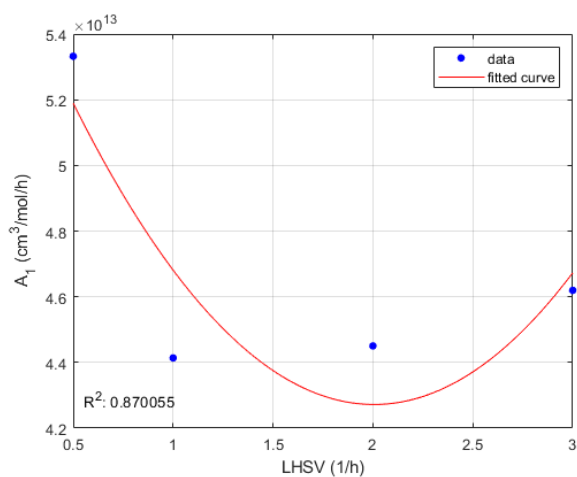
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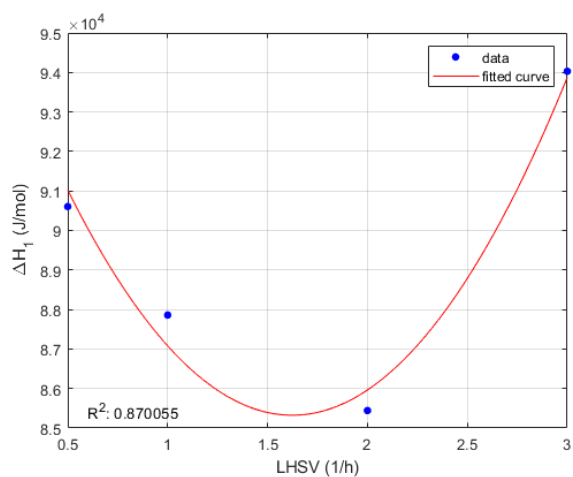
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Figs. S1–S28 are additions of Fig. 8. All of identified kinetic parameters and the fitted second-degree

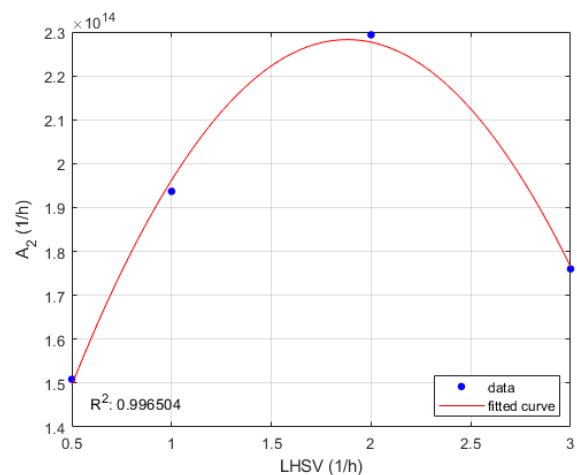
polynomials with the  $R^2$  values are depicted in function of LHSV.



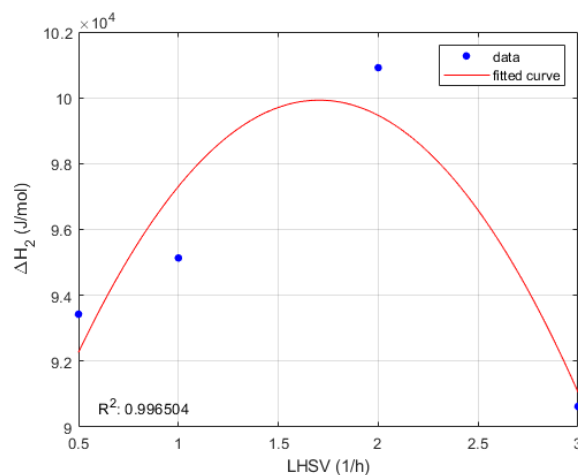
**Fig. S1** The change of  $A_1$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV



**Fig. S2** The change of  $\Delta H_1$  (J/mol) in function of LHSV



**Fig. S3** The change of  $A_2$  (1/h) in function of LHSV



**Fig. S4** The change of  $\Delta H_2$  (J/mol) in function of LHSV

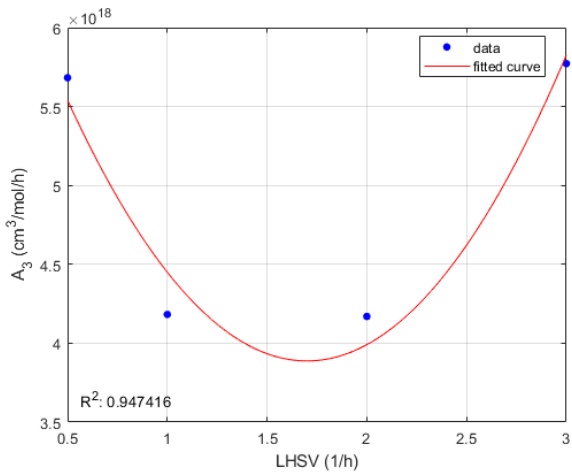


Fig. S5 The change of  $A_3$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV

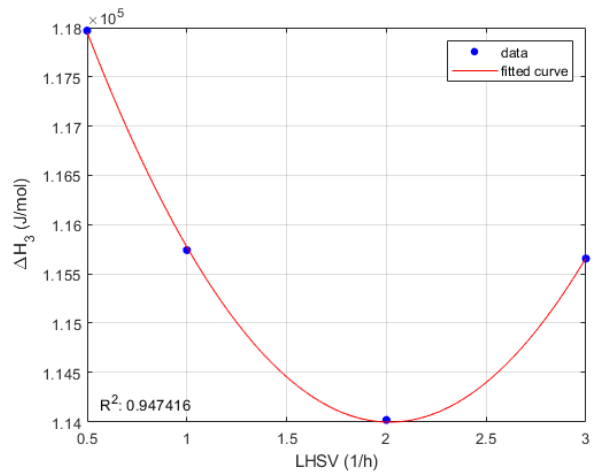


Fig. S6 The change of  $\Delta H_3$  (J/mol) in function of LHSV

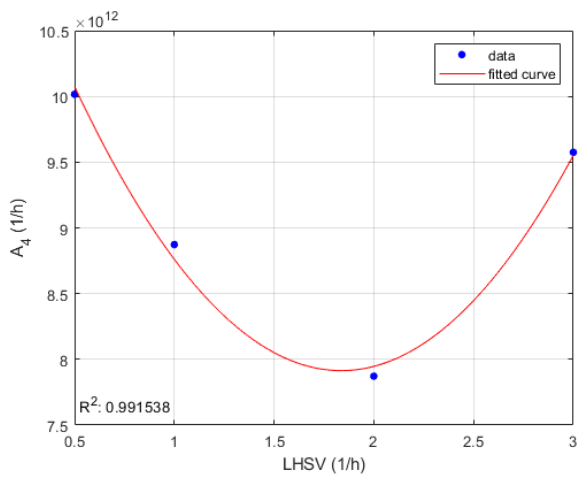


Fig. S7 The change of  $A_4$  (1/h) in function of LHSV

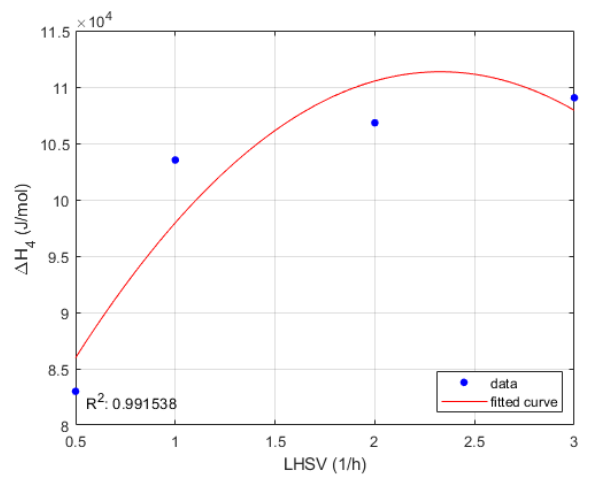


Fig. S8 The change of  $\Delta H_4$  (J/mol) in function of LHSV

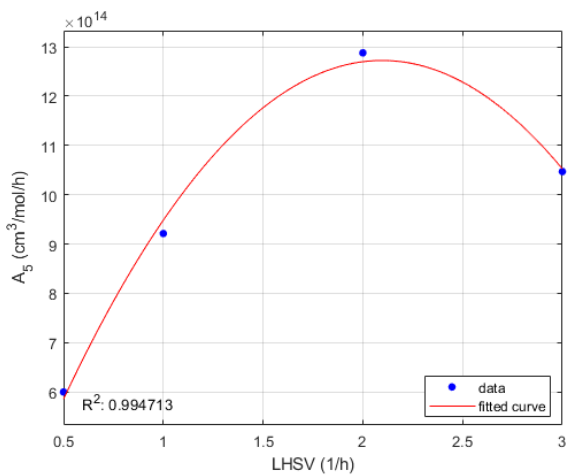


Fig. S9 The change of  $A_5$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV

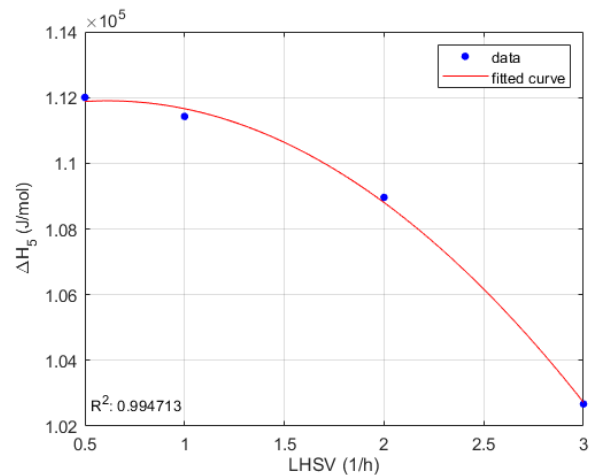


Fig. S10 The change of  $\Delta H_5$  (J/mol) in function of LHSV

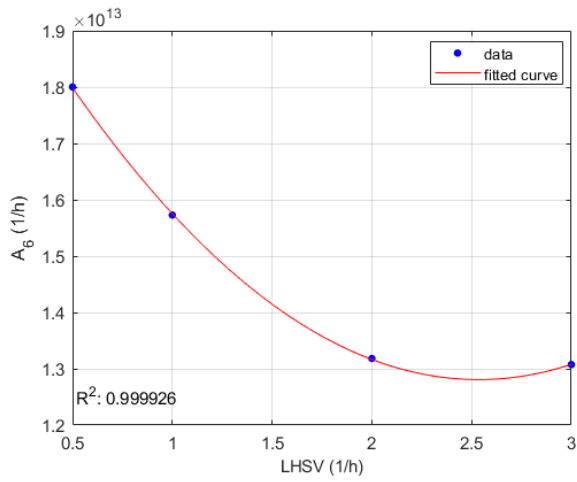


Fig. S11 The change of  $A_6$  (1/h) in function of LHSV

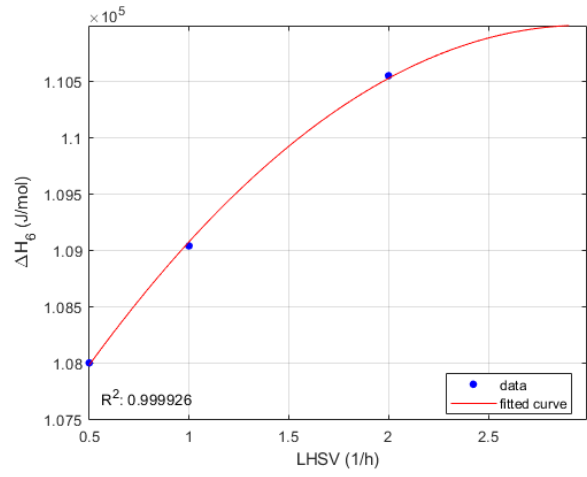


Fig. S12 The change of  $\Delta H_6$  (J/mol) in function of LHSV

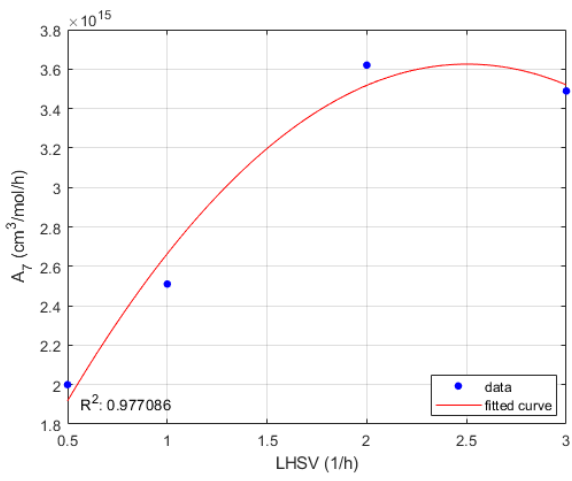


Fig. S13 The change of  $A_7$  (cm<sup>3</sup>/mol/h) in function of LHSV

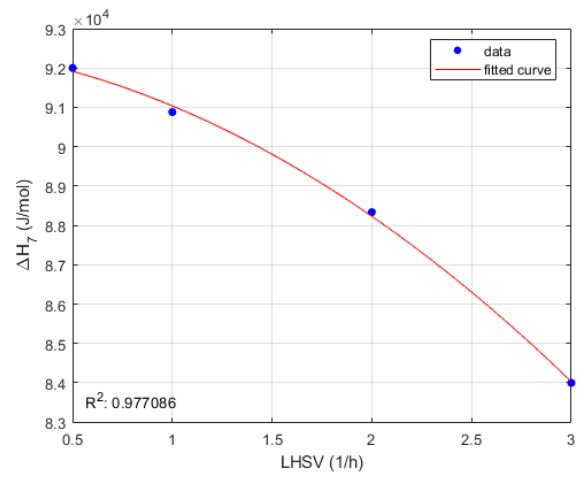


Fig. S14 The change of  $\Delta H_7$  (J/mol) in function of LHSV

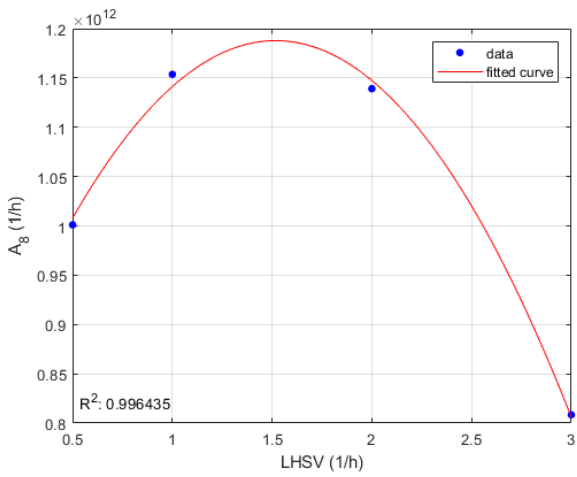


Fig. S15 The change of  $A_8$  (1/h) in function of LHSV

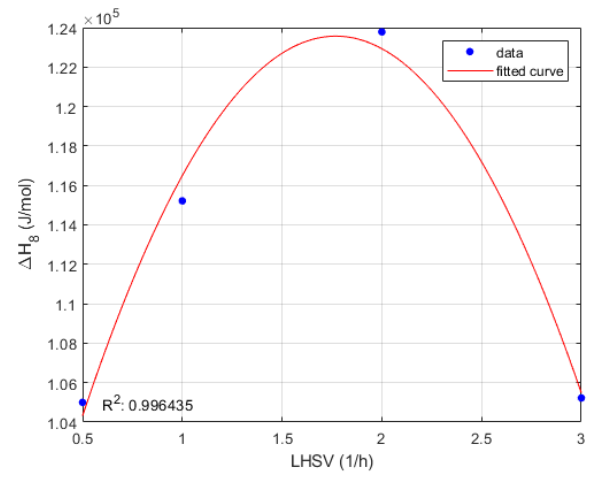


Fig. S16 The change of  $\Delta H_8$  (J/mol) in function of LHSV

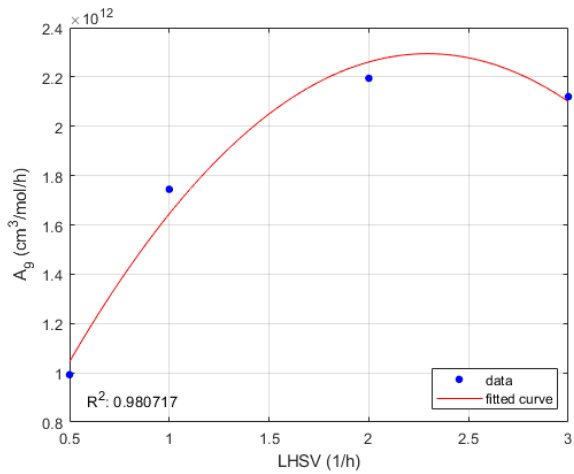


Fig. S17 The change of  $A_9$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV

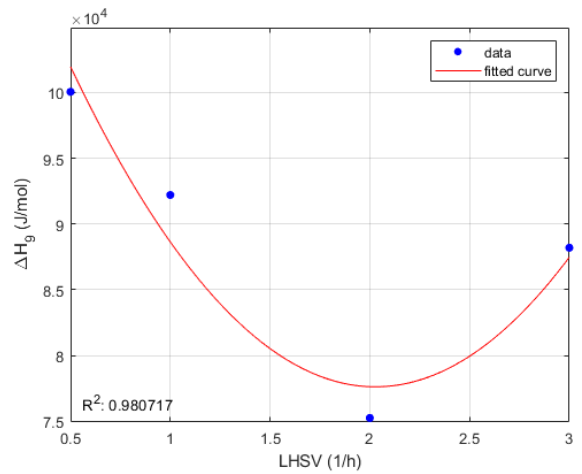


Fig. S18 The change of  $\Delta H_9$  (J/mol) in function of LHSV

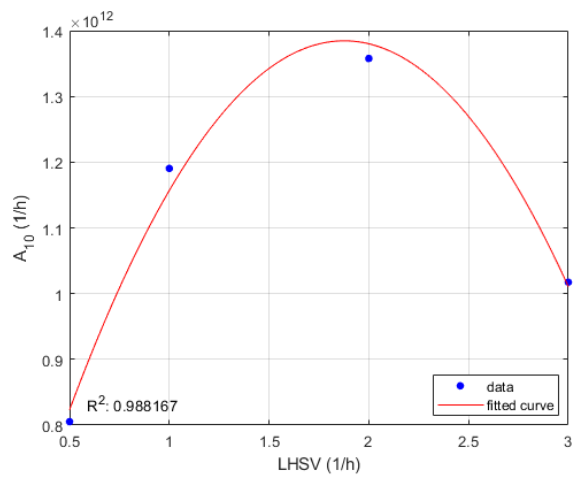


Fig. S19 The change of  $A_{10}$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV

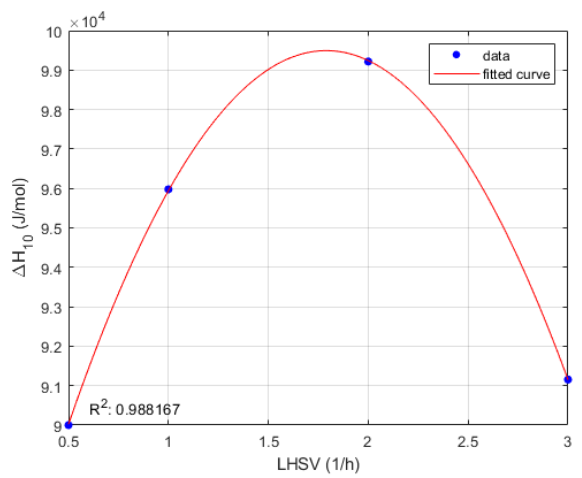


Fig. S20 The change of  $\Delta H_{10}$  (J/mol) in function of LHSV

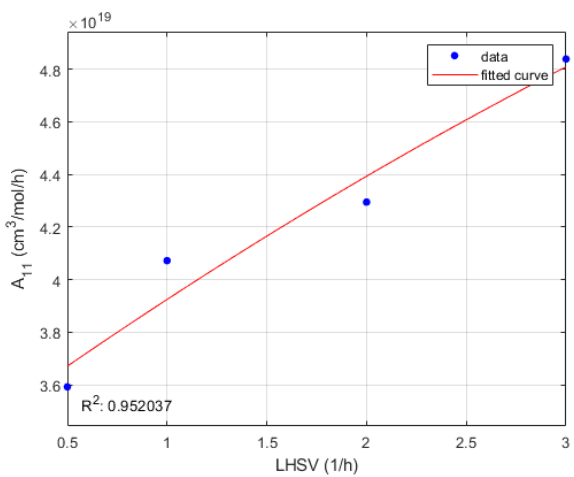


Fig. S21 The change of  $A_{11}$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV

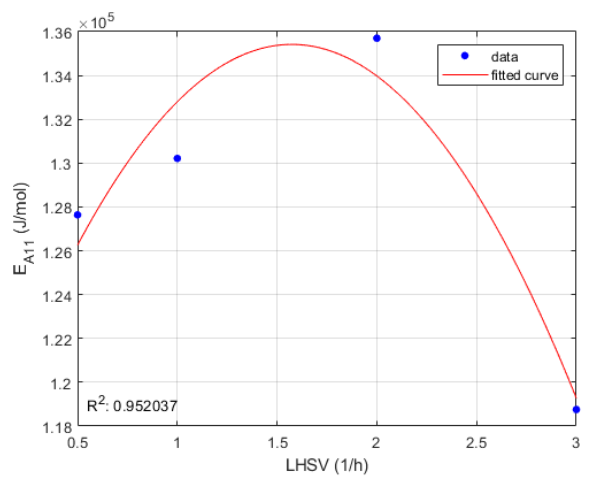


Fig. S22 The change of  $E_{A11}$  (J/mol) in function of LHSV

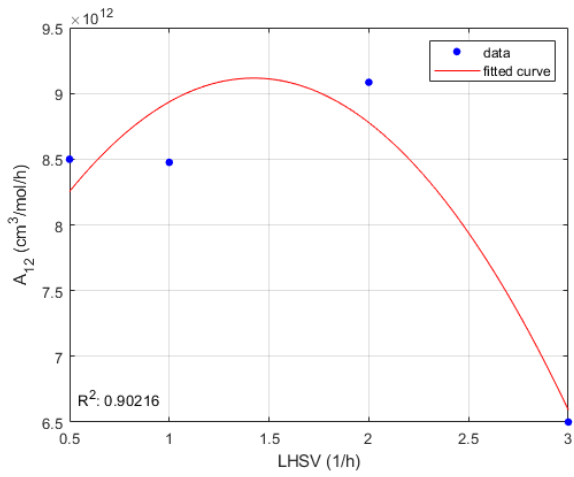


Fig. S23 The change of  $A_{12}$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV

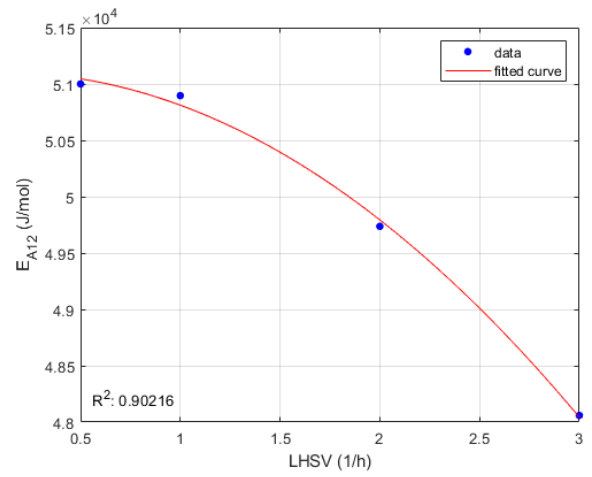


Fig. S24 The change of  $E_{A_{12}}$  (J/mol) in function of LHSV

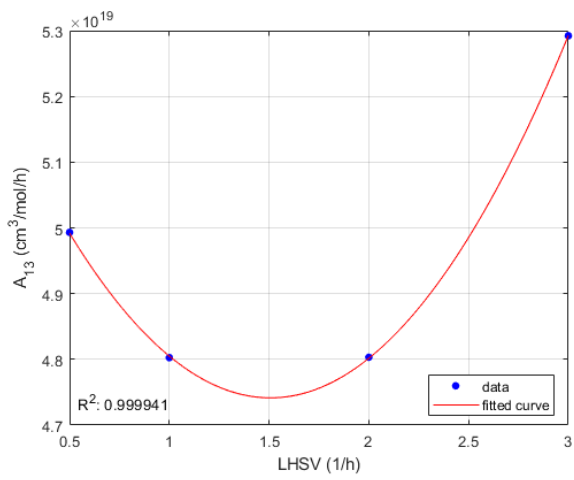


Fig. S25 The change of  $A_{13}$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV

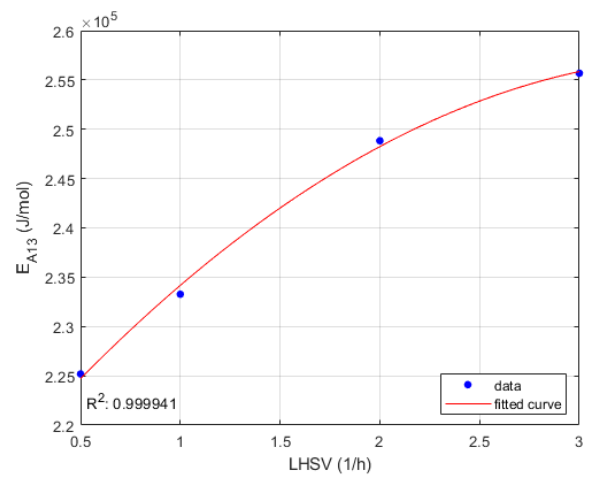


Fig. S26 The change of  $E_{A_{13}}$  (J/mol) in function of LHSV

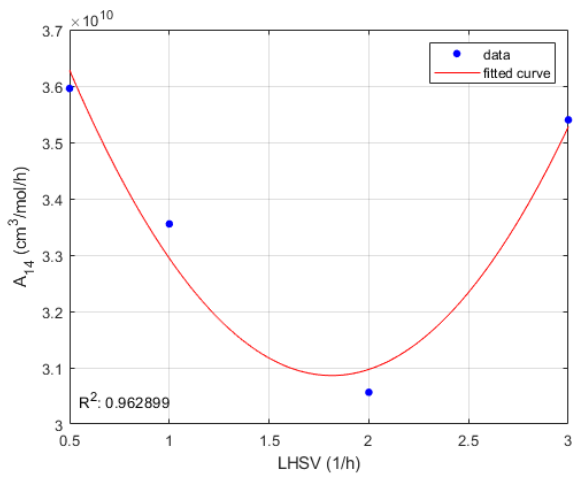


Fig. S27 The change of  $A_{14}$  ( $\text{cm}^3/\text{mol/h}$ ) in function of LHSV

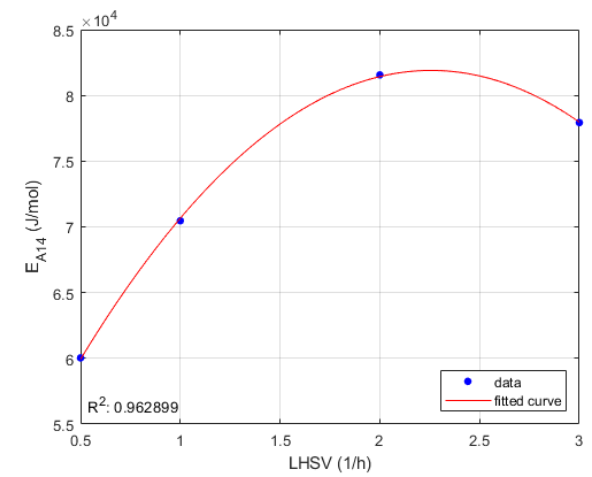


Fig. S28 The change of  $E_{A_{14}}$  (J/mol) in function of LHSV