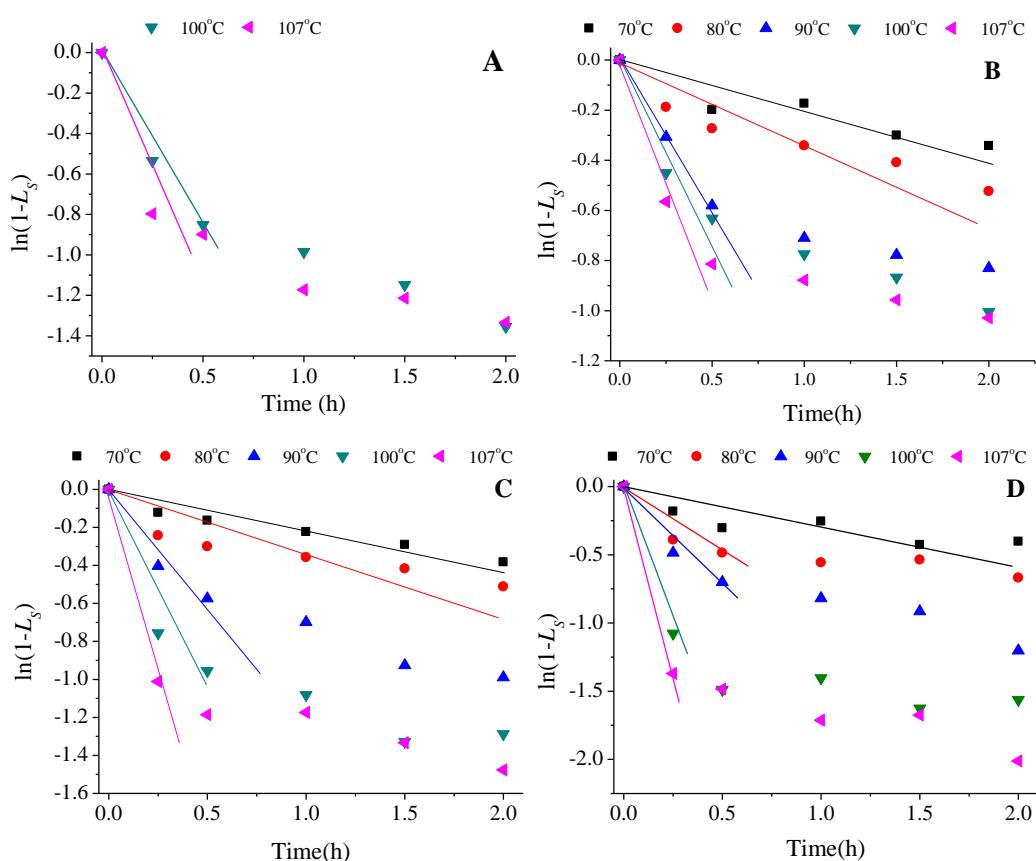


## Supplemental data

**Figure S1** Plotting of  $\ln(1-L_s)$  versus reaction time  $t$  at different temperatures and formic acid concentration (A: 60 %; B: 70 %; C: 80 %; D: 88 %). The plotting showed an apparent deviation from linear relationship, which indicates that the kinetic model of  $\frac{dL_s}{dt} = k_L(1-L_s)$  (Saeman's model) cannot be employed to accurately describe the kinetic of lignin delignification by aqueous formic acid.



**Figure S2** Comparison of experiment-determined data and model-predicted data by multivariate linear regression for rate constant ( $k_L$ ,  $k_X$  and  $k_G$ ) and degree of reaction ( $d_D$ ,  $d_{SX}$  and  $d_{SG}$ )

