# Supporting Information

## Development of adiabatic criterion for runaway detection and safe operating condition designing in semibatch reactors

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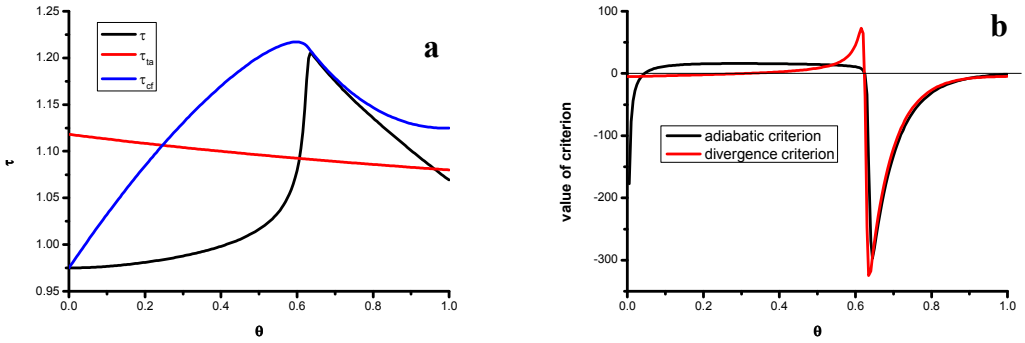


**Figure S1.** Isoperibolic SBRs profiles at $\tau_j=\tau_{dos}=$**0.975**: a) dimensionless temperature profile; b) criteria values profiles. $\nu_A DaRE$=1.8, $\varepsilon$=0.4, $\gamma$=38, $Wt$=10, $RH$=1, $\Delta\tau$=0.6, $n$=1, $m$=1. This figure is for **liquid homogeneous reactions**.

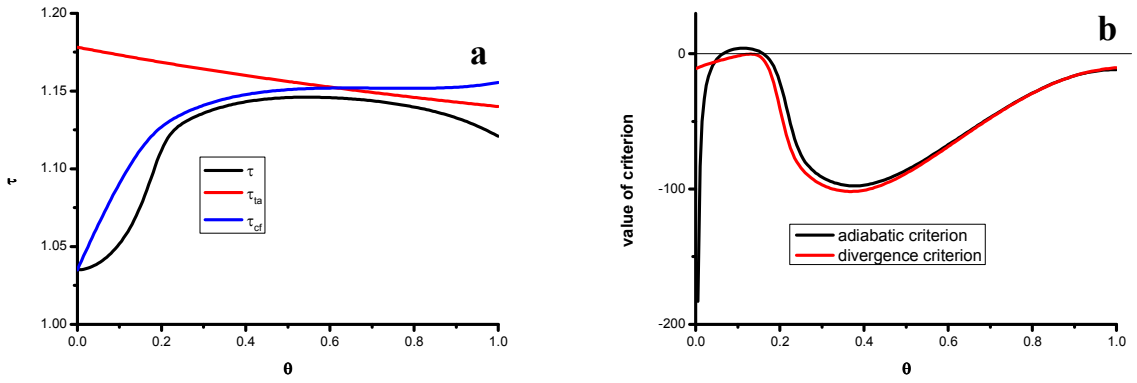


**Figure S2.** Isoperibolic SBRs profiles at $\tau_j=\tau_{dos}=$**1.035**: a) dimensionless temperature profile; b) criteria values profiles. $v_A DaRE$=1.8, $\varepsilon$=0.4, $\gamma$=38, $Wt$=10, $RH$=1, $\Delta\tau$=0.6, $n$=1, $m$=1. This figure is for **liquid homogeneous reactions**.

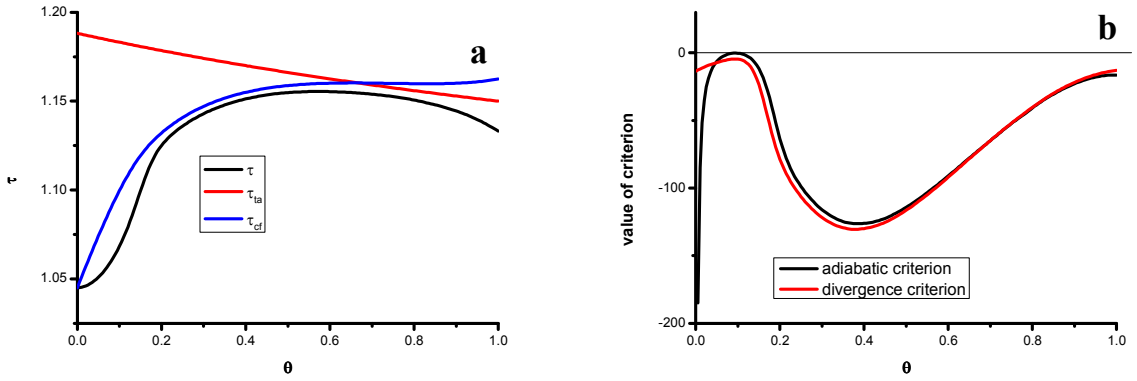


**Figure S3** Isoperibolic SBRs profiles at $\tau_j=\tau_{dos}=$**1.045**: a) dimensionless temperature profile; b) criteria values profiles. $\nu_A DaRE$=1.8, $\varepsilon$=0.4, $\gamma$=38, $Wt$=10, $RH$=1, $\Delta\tau$=0.6, $n$=1, $m$=1. This figure is for **liquid homogeneous reactions**.

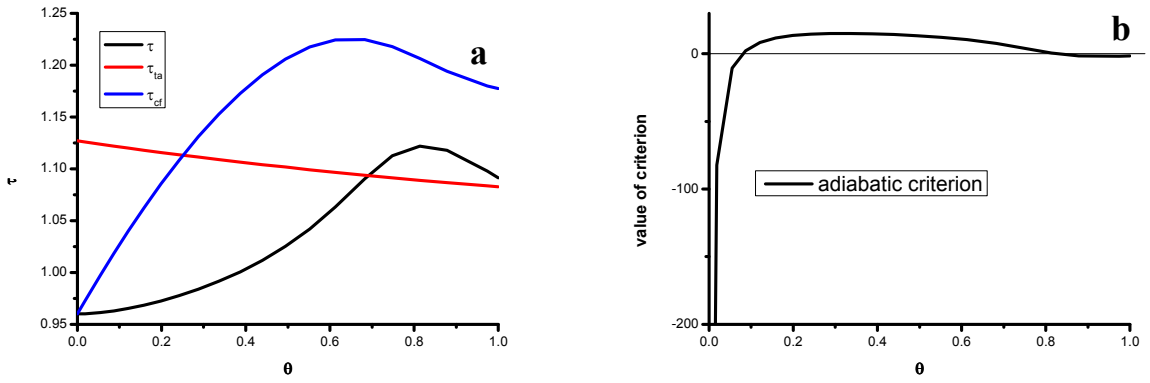


**Figure S4** Isoperibolic SBRs profiles at $\tau_j=\tau_{dos}=$**0.96**: a) dimensionless temperature profile; b) criteria values profiles. $v_A DaRE$=3, $\varepsilon$=0.4, $\gamma$=38, $Wt$=10, $RH$=1, $\Delta\tau$=0.7, $n$=1, $m$=1. This figure is for **single diffusion controlled liquid-liquid heterogeneous reactions** that occur in the continuous phases.

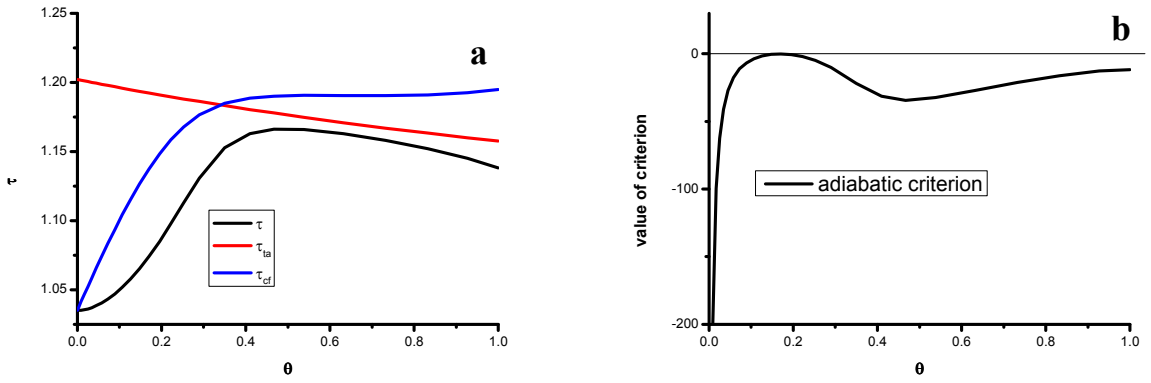


**Figure S5** Isoperibolic SBRs profiles at $\tau_j=\tau_{dos}=$**1.035**: a) dimensionless temperature profile; b) criteria values profiles. $v_A DaRE$=3, $\varepsilon$=0.4, $\gamma$=38, $Wt$=10, $RH$=1, $\Delta\tau$=0.7, $n$=1, $m$=1. This figure is for **single diffusion controlled liquid-liquid heterogeneous reactions** that occur in the continuous phases.