

## **Supporting Information**

### **Selective Hydrogenation of the C<sub>8</sub> Aromatic Fraction of Pyrolysis Gasoline over NiZn<sub>3</sub>/α-Al<sub>2</sub>O<sub>3</sub>: Experimental and Modeling Studies**

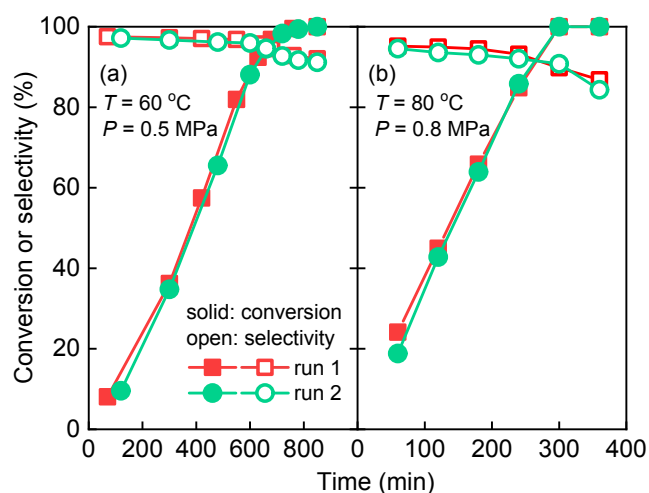
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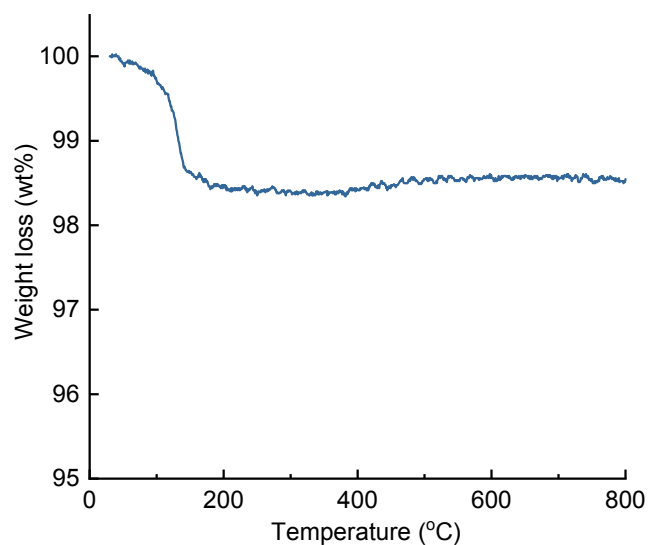
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**Figure S1.** Reproducibility test of the phenylacetylene hydrogenation over  $\text{NiZn}_3/\alpha\text{-Al}_2\text{O}_3$  (conditions: (a)  $60\text{ }^{\circ}\text{C}$  and  $0.5\text{ MPa}$ ; (b)  $80\text{ }^{\circ}\text{C}$  and  $0.8\text{ MPa}$ ). It is clear that a good reproducibility is obtained in two repeated runs under different conditions.



**Figure S2.** TGA curve of 100 h-used  $\text{NiZn}_3/\alpha\text{-Al}_2\text{O}_3$  (with a heating rate of  $10\text{ }^{\circ}\text{C}/\text{min}$  in air). The weight loss at temperatures lower than  $200\text{ }^{\circ}\text{C}$  is attributed to the adsorbed organic species and water, while the slight weight increase at above  $400\text{ }^{\circ}\text{C}$  is ascribed to the oxidation of metallic Ni. This figure indicates that no coke formation occurs on  $\text{NiZn}_3/\alpha\text{-Al}_2\text{O}_3$ .