Supporting Information

Catalytic Pyrolysis of Poly(Ethylene Terephthalate) in the Presence of Metal Oxides for Aromatic Hydrocarbon Recovery Using Tandem μ-Reactor-GC/MS

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SEM analysis of the metal oxides

SEM images of the different metal oxides are displayed in Figure S1. Figure S1(a) shows that ZnO consists of hexagonal prismatic particles of various diameters, which is consistent with the XRD results (JCPDS No. 03-065-3411). In Figure S1(b), MgO consists of cubic particles that are relatively uniform in diameter, which is consistent with the XRD results for MgO with the unit lattice of a hexagonal crystal system (JCPDS No. 78-0430). Figure S1(c) shows that TiO_2 consists of prismatic particles of various diameters, in agreement with the XRD results for TiO_2 with the unit lattice of a tetragonal crystal system (JCPDS No. 00-021-1276). On the other hand, in Figure S1(d) ZrO_2 has a structure based on agglutination of particles that are characteristic of a monoclinic crystal system.

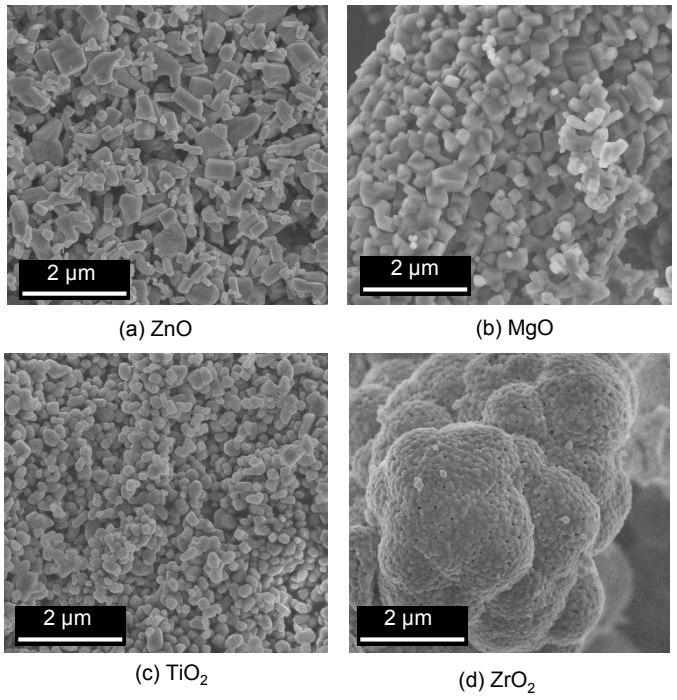

Figure S1. SEM images of metal oxides calcined at 700 °C (×15,000): (a) ZnO, (b) MgO, (c) TiO_2, and (d) ZrO_2.

N_2 adsorption/desorption

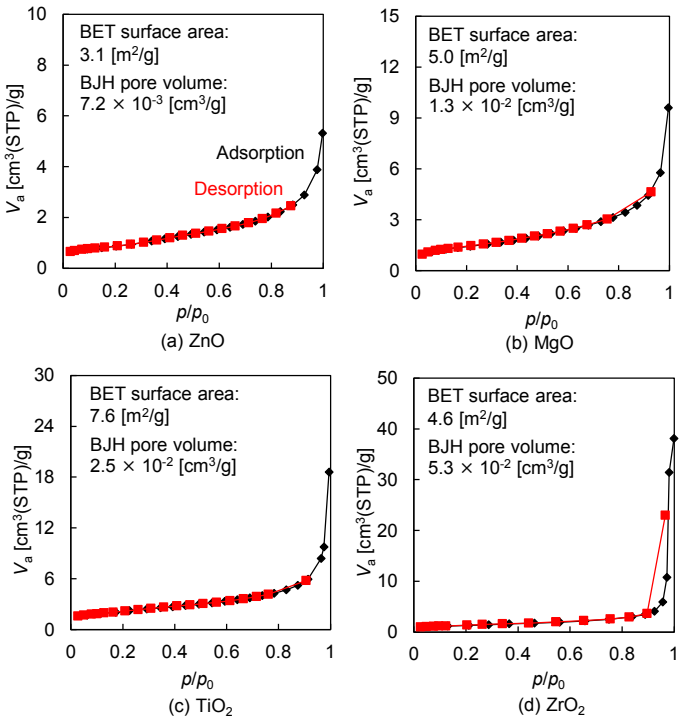

Figure S2. N_2 adsorption/desorption isotherms of (a) ZnO, (b) MgO, (c) TiO_2, and (d) ZrO_2.

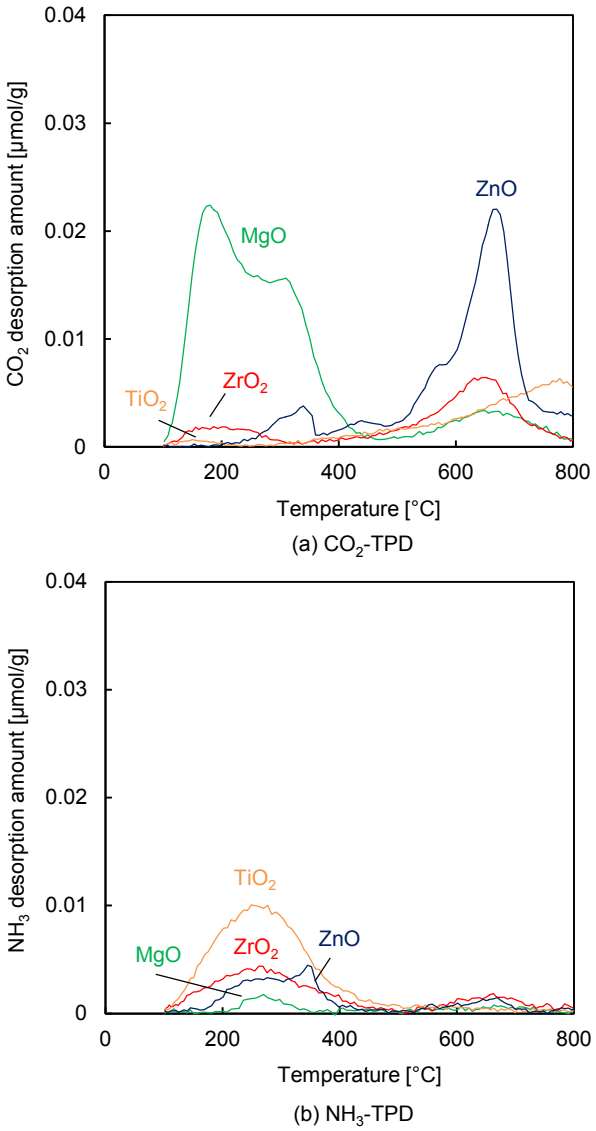

Figure S3. (a) CO_2-TPD and (b) NH_3-TPD of each metal oxide