Supporting Information

Comparing study of the effect of the CeO_2-based carrier materials on the total oxidation of CO, methane, and propane over RuO_2

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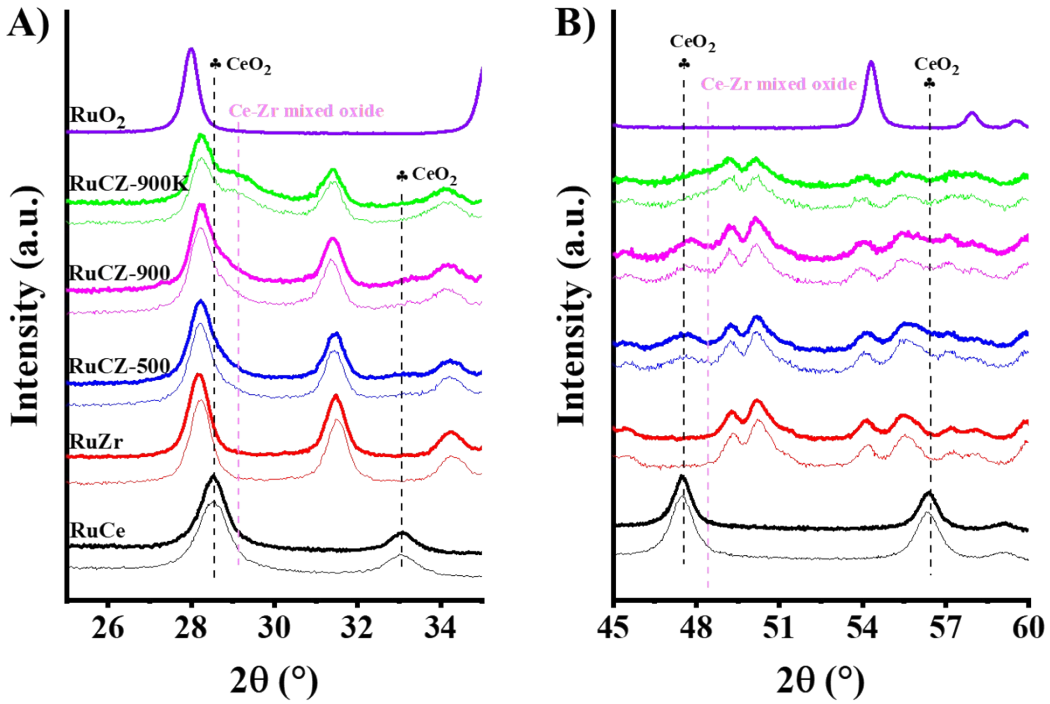

Figure S1: Enlarged XRD patterns of the various RuO_2-supported catalysts.

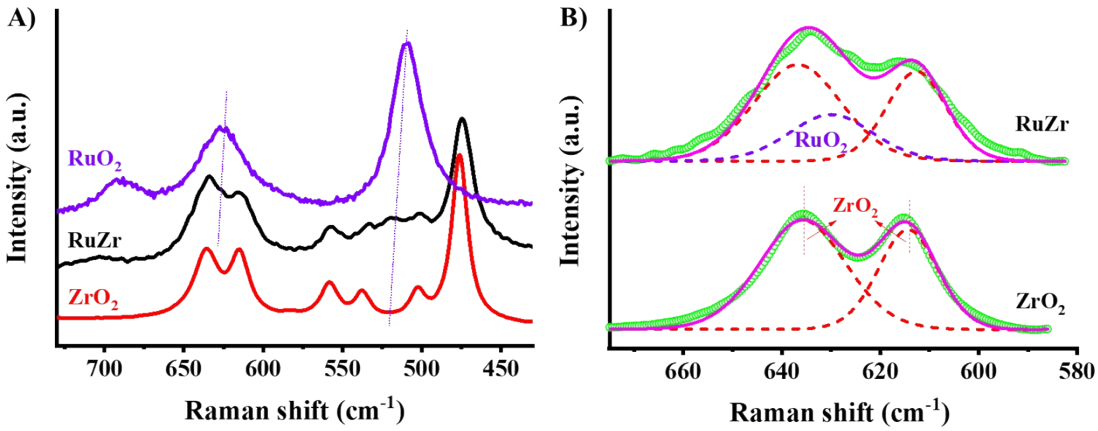

Figure S2: Deconvolution of vibrational Raman modes in the region 600-650 cm^{-1} of ZrO_2 and RuZr, revealing a RuO_2-related feature.

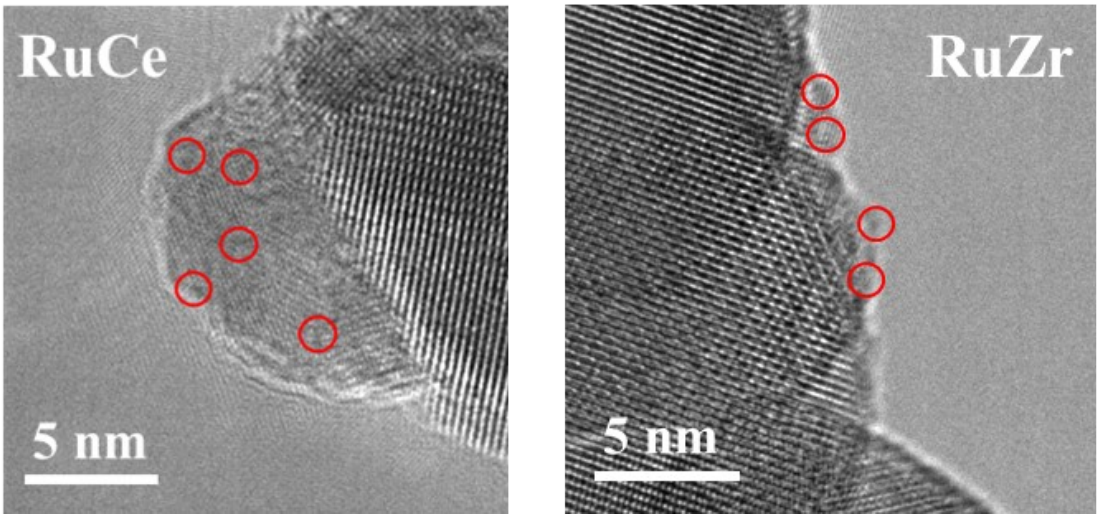

Figure S3. STEM images of RuCe (left) and RuZr (right) indicating with red circles the position of possible particles.

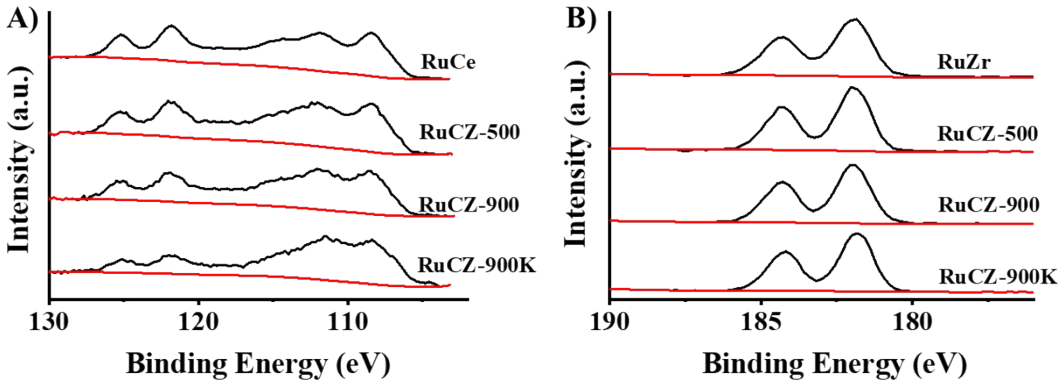

Figure S4. Ce 4d (A) and Zr 3d (B) XPS spectra of the various RuO_2-supported catalysts.

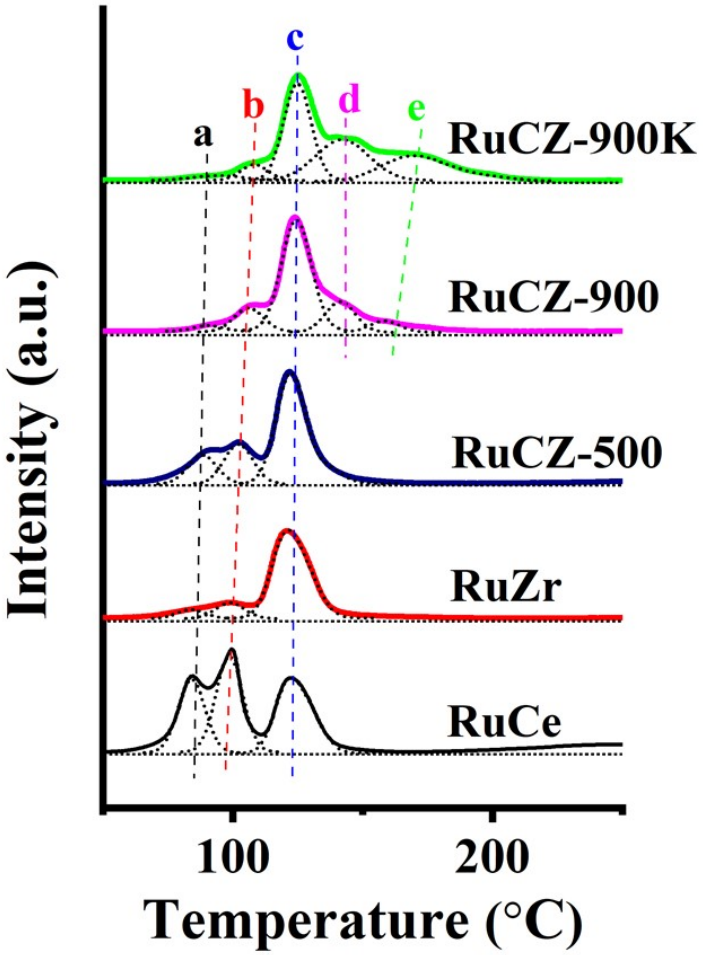

Figure S5: Deconvolution of H_2-TPR in the low temperature region of the various RuO_2-supported catalysts.

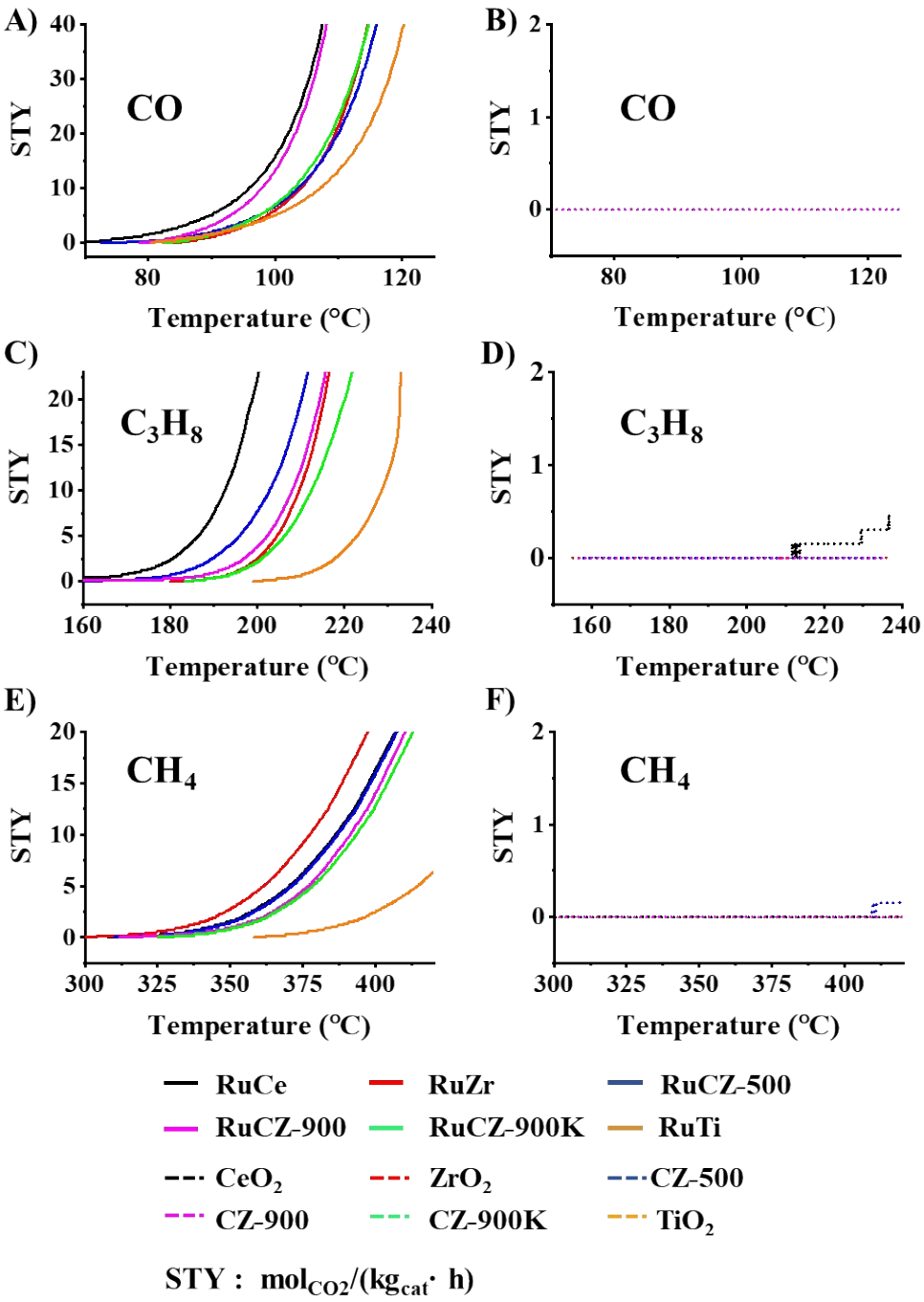

Figure S6. STY data as a function of reaction temperature of three different catalytic reactions (CO, propane, methane combustion) over RuO_2 that is supported on various carrier materials (A,C,E) and pure carriers (B,D,F).