Supplementary Material

In Situ DRIFTS Study of Single-Atom, 2D, and 3D Pt on γ-Al_2O_3 Nanoflakes and Nanowires for C_2H_4 Oxidation

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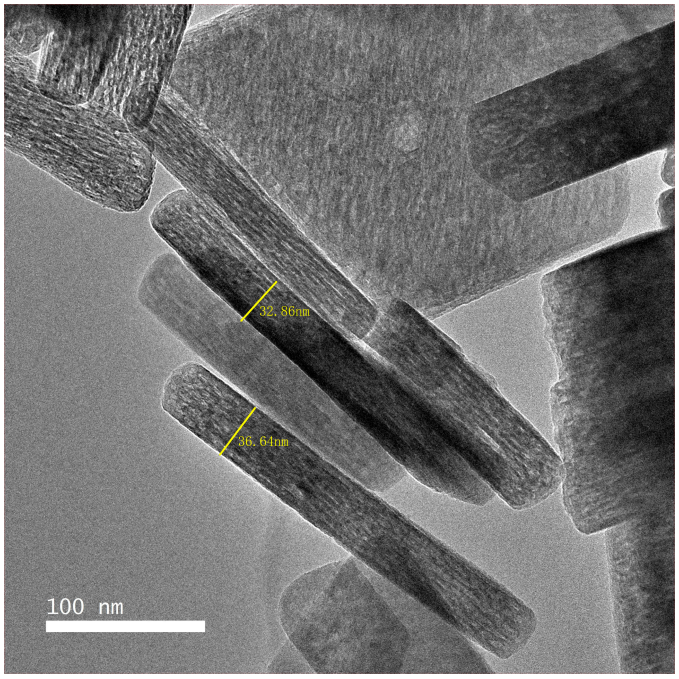

Figure S1. TEM images of synthesized γ-Al_2O_3 (Al-NF).

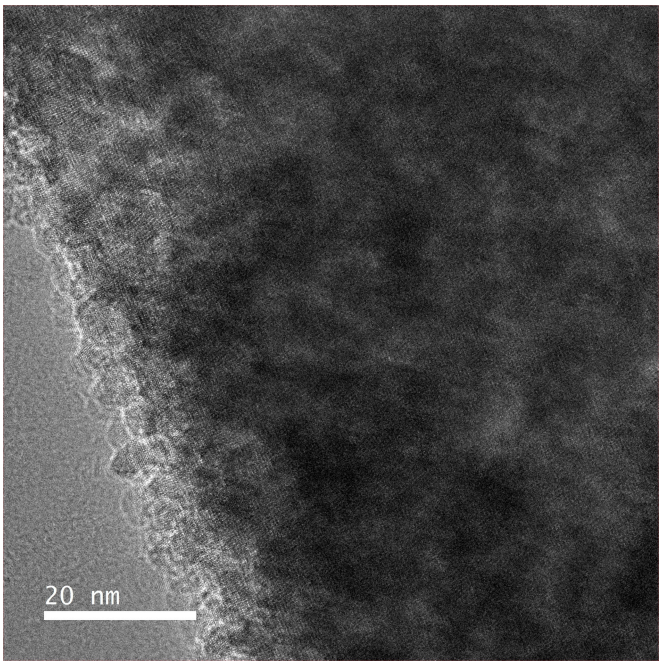

Figure S2. HRTEM images of synthesized γ-Al_2O_3 (Al-NF). The nanoflakes in sample Al-NF were composed of aggregated crystalline grains with sizes of around 10 nm, which fused to form nanoflakes.

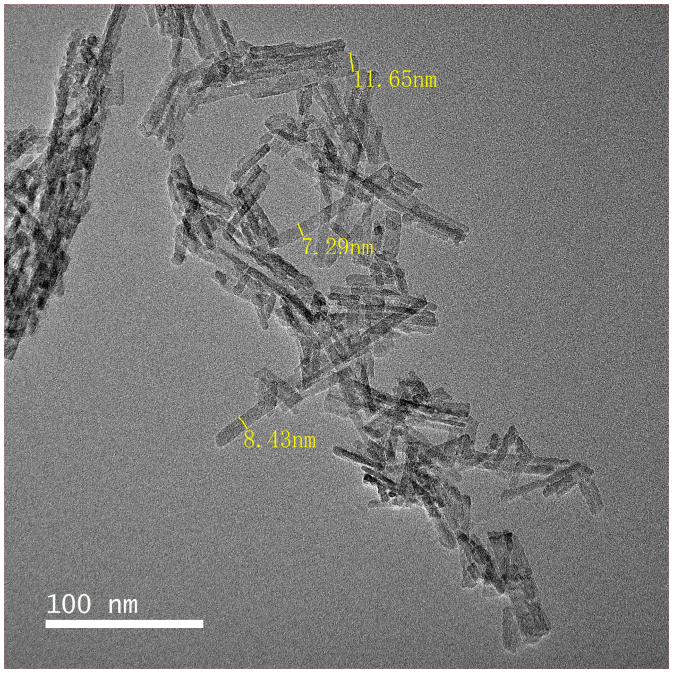

Figure S3. TEM images of synthesized γ-Al_2O_3 (Al-NW).

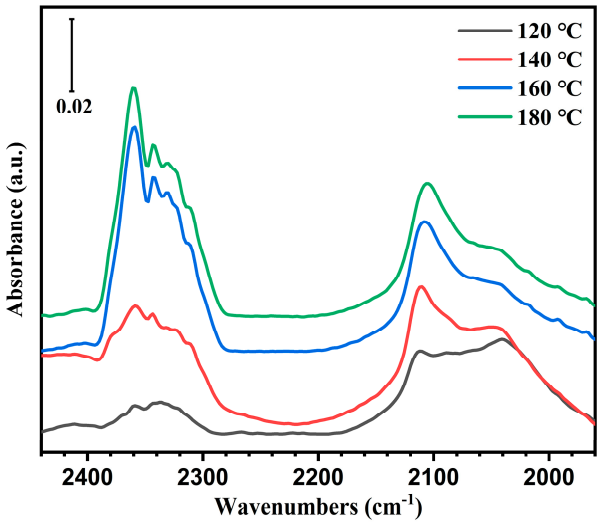

Figure S4. In situ DRIFTS spectra over PtAl-NW at temperatures from 120 to 180 °C. Reaction conditions: 700 ppm C_2H_4, 10% O_2, N_2 balance, 17 mg catalyst, 50 ml min^{-1} flow rate.

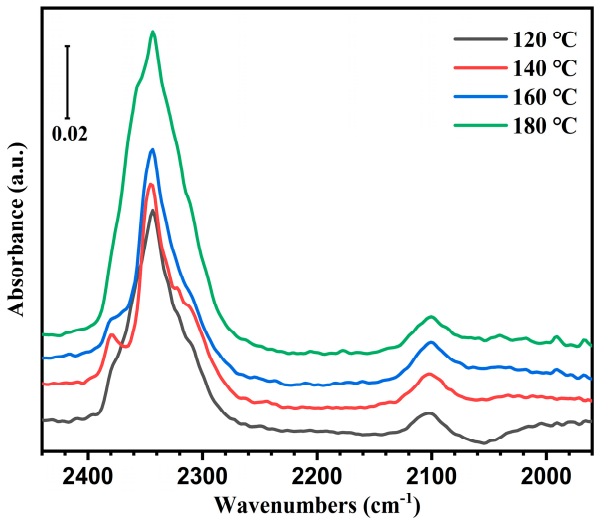

Figure S5. In situ DRIFTS spectra over PtAl-NF at temperatures from 120 to 180 °C. Reaction conditions: 700 ppm C_2H_4, 10% O_2, N_2 balance, 17 mg catalyst, 50 ml min^{-1} flow rate.

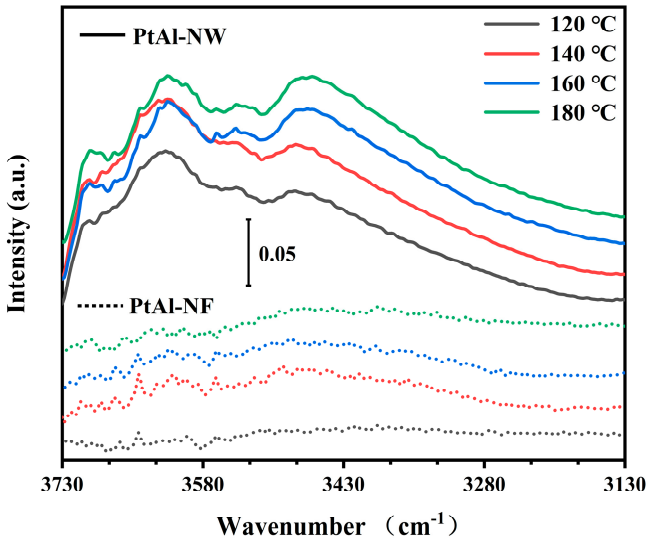

Figure S6. In situ DRIFTS spectra over Pt/γ-Al_2O_3 at temperatures from 120 to 180 °C. Reaction conditions: 700 ppm C_2H_4, 10% O_2, N_2 balance, 17 mg catalyst, 50 ml min^{-1} flow rate.