

Supporting Information

The Effect of Strong Metal-Support Interaction (SMSI) on Pt-Ti/SiO₂ and Pt-Nb/SiO₂ Catalysts for Propane Dehydrogenation

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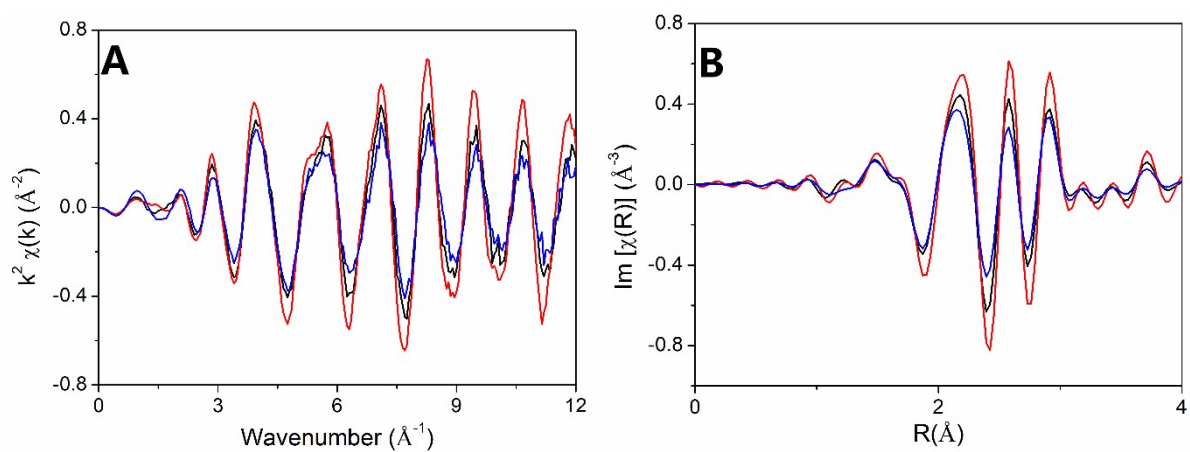


Figure S1. Pt L₃ edge EXAFS spectra: A) k space, and B) R space FT imaginary part.

2Pt/SiO₂ (red), 2Pt-6Ti/SiO₂ (black) and 2Pt-8Nb/SiO₂ (blue).

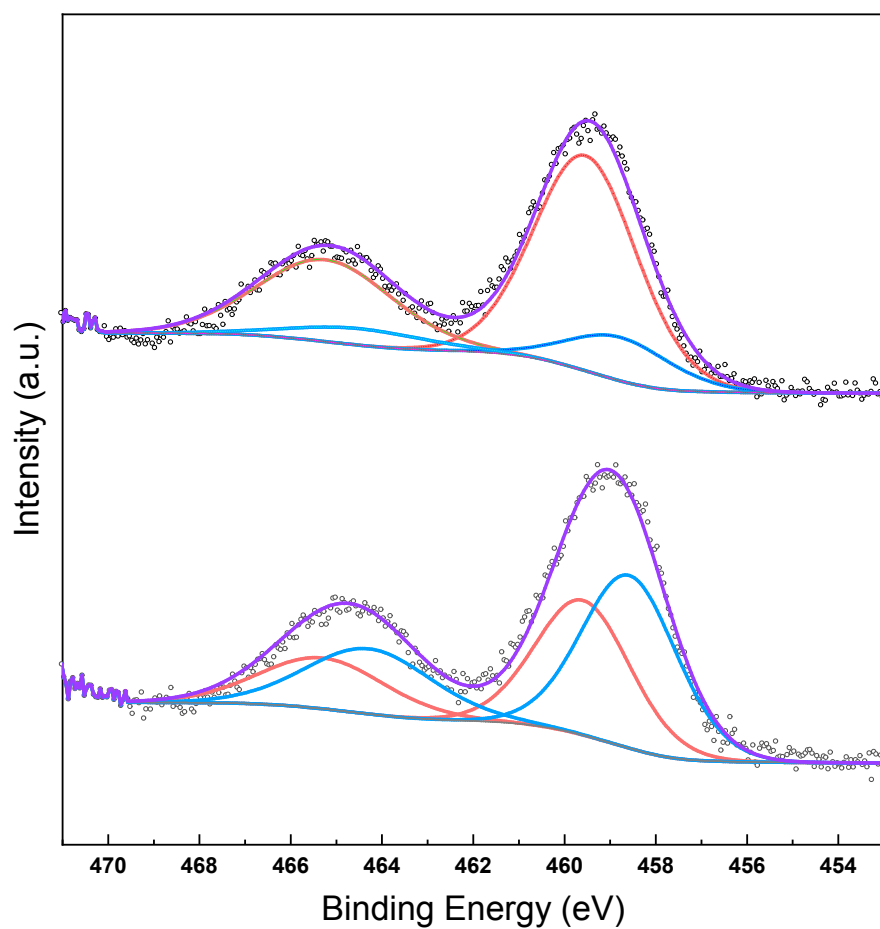


Figure S2. Ti 2p XPS spectra of 2Pt-3Ti/SiO₂ (lower) and 2Pt-6Ti/SiO₂ (upper) catalysts. Black dots: experimental data; dash lines: background; solid lines: fitted data.

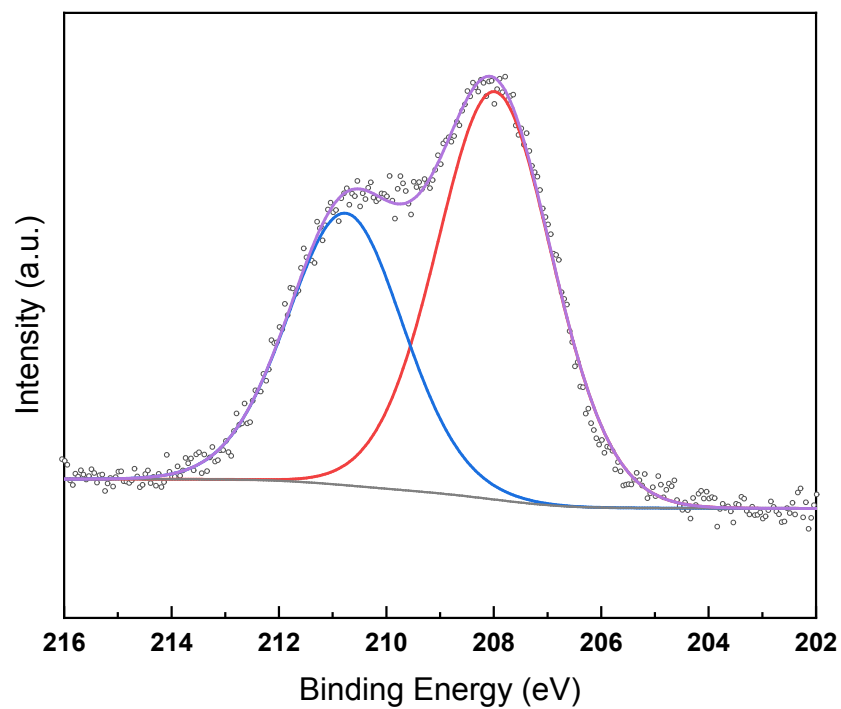


Figure S3. Nb 3d XPS spectrum of 2Pt-8Nb/SiO₂ catalyst. Black dots: experimental data; grey line: background; red line: Nb 3d_{5/2} peak, blue line: Nb 3d_{3/2} peak; purple line: sum curve.

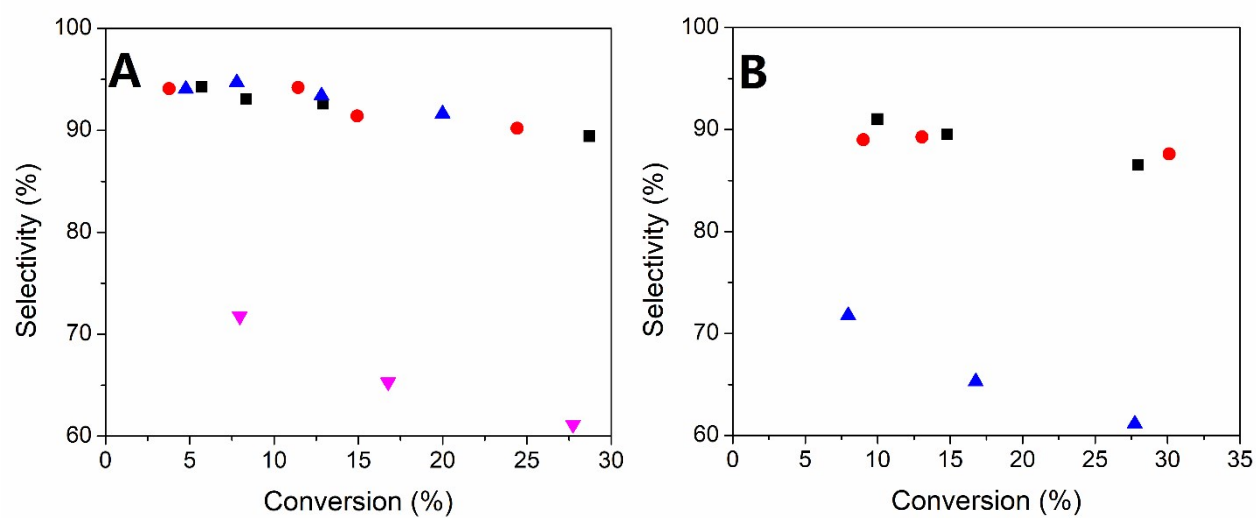


Figure S4. Propylene selectivity at different conversions of (A) 2Pt-3Ti/SiO₂ (black), 2Pt-6Ti/SiO₂ (red), 2Pt-8Ti/SiO₂ (red), 2Pt/SiO₂ (pink), (B) 2Pt-4Nb/SiO₂ (black) and 2Pt-8Nb/SiO₂ (red), 2Pt/SiO₂ (blue). Reaction conditions: 550 °C, 2.5 % C₃H₈ + 2.5 % H₂ balanced with N₂.