Electronic Supplementary Material (ESI) for Journal of Materials Chemistry

Supporting information

A new method to synthesize very active and stable supported metal Pt catalysts: thermo-destabilization of microemulsions

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1. Preparation of Pt nanoparticles

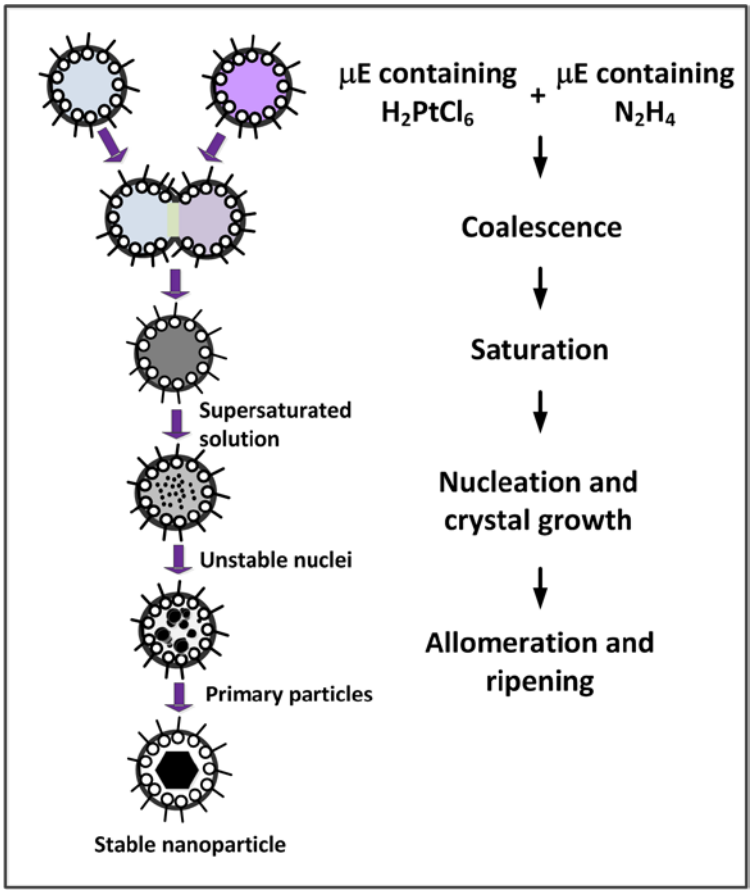


Figure S1. Mechanism of Pt nanoparticle formation

Table S1. Product description of support materials

Name	Product description	Surface area [m^2/g]
γ-Al_2O_3	pH neutral, M.W. = 101.96	155-200
SBA-15	pH = 5, M.W = 60.08	850

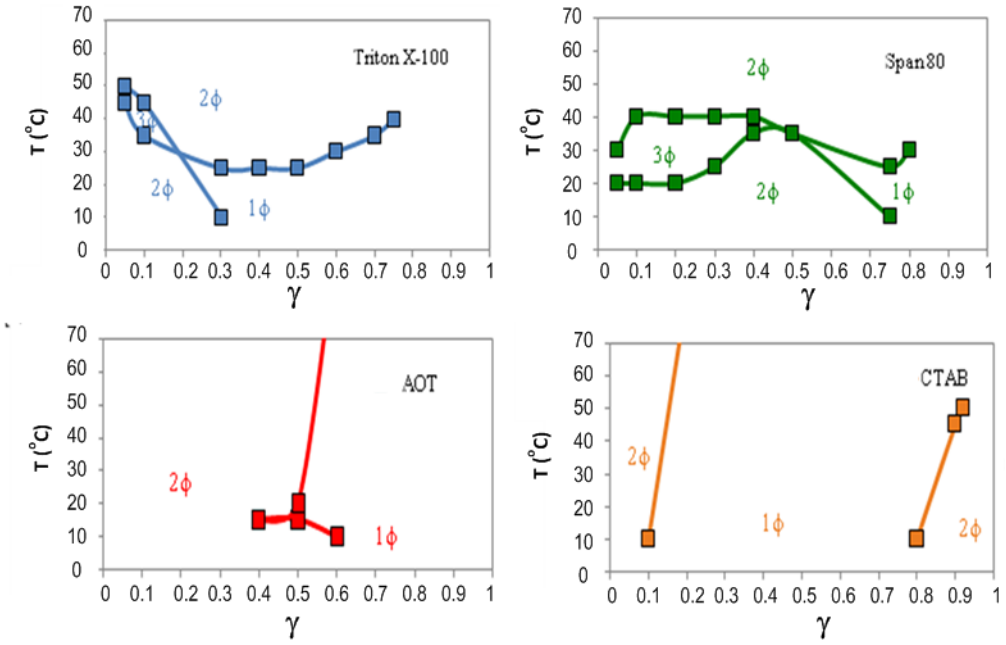


Figure S2. Phase diagram of microemulsions with equal amounts of oil and water (α = 0.5) as a function of surfactant concentration (γ) and temperature (T).

2. Catalytic testing of supported Pt catalyst

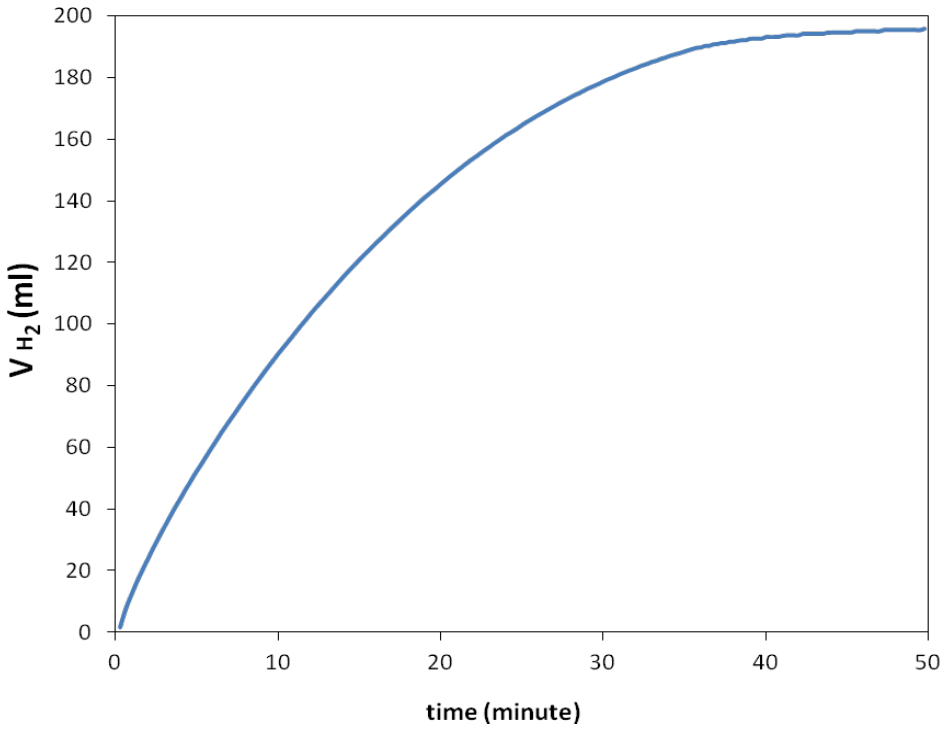


Figure S3. A representative profile of AMS hydrogenation with 0.01% Pt/Al_2O_3 at 20°C and 1 bar

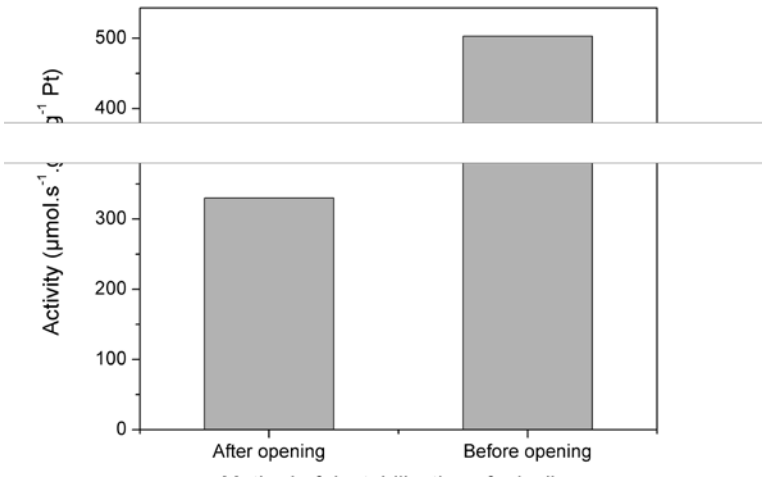


Figure S4. The activities of the Pt-catalysts prepared in different support feeding prior to deposition process

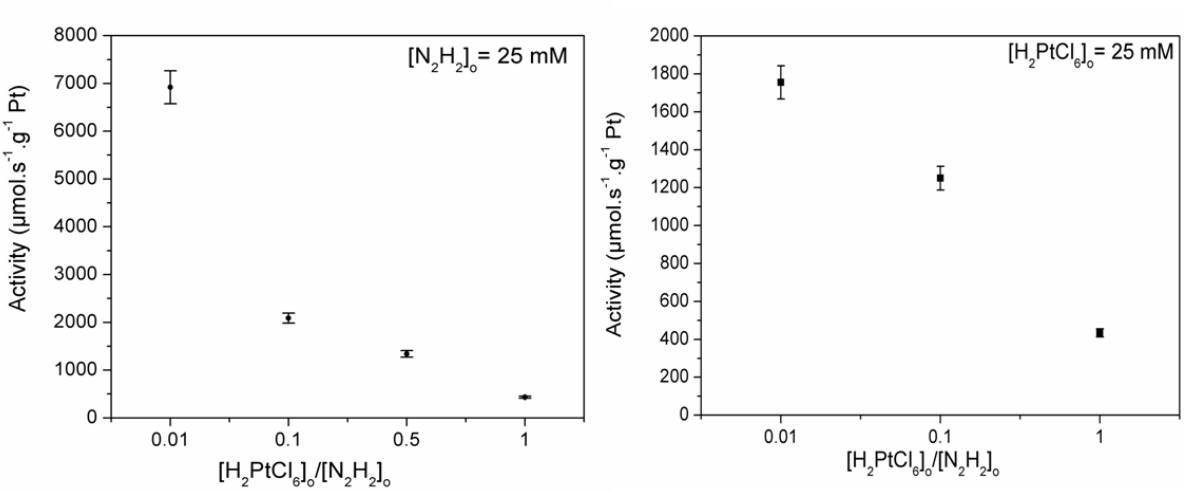


Figure S5. The activities of the Pt-catalysts prepared in different ratio of initial concentrations

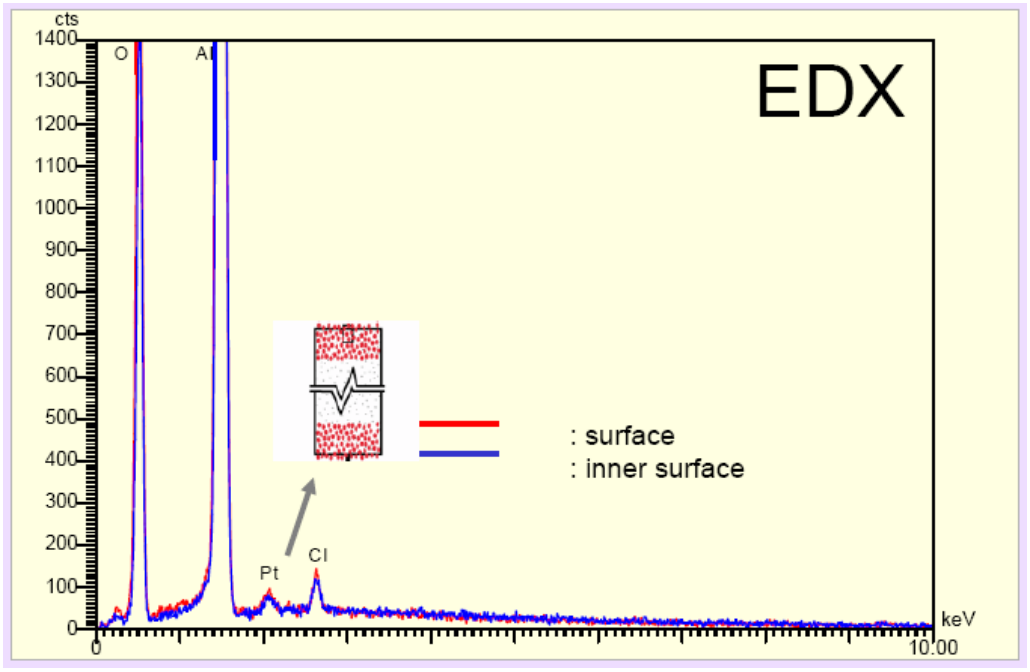
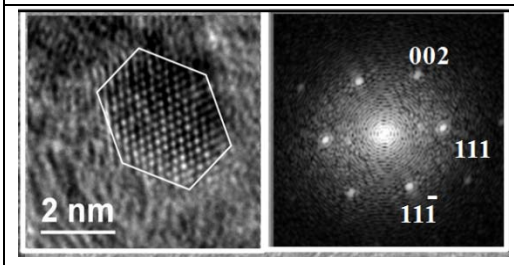
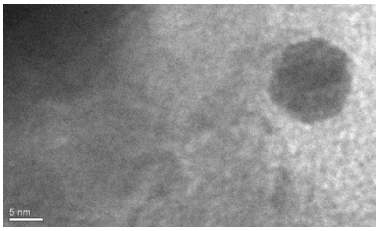
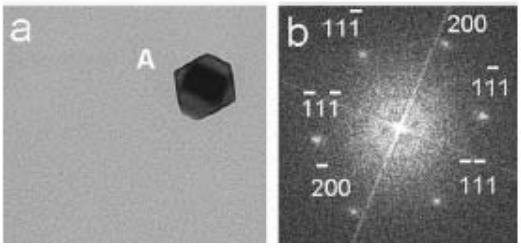
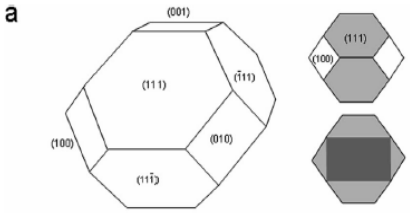
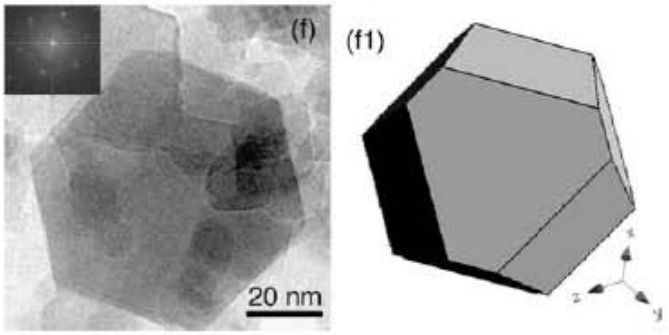
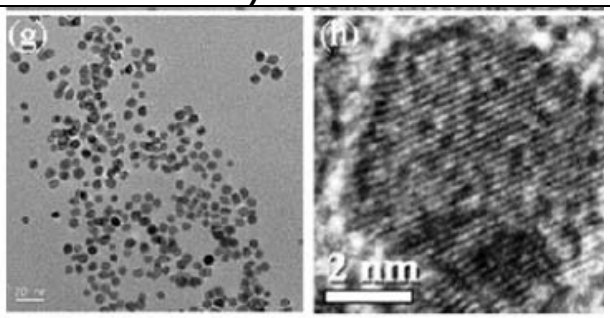
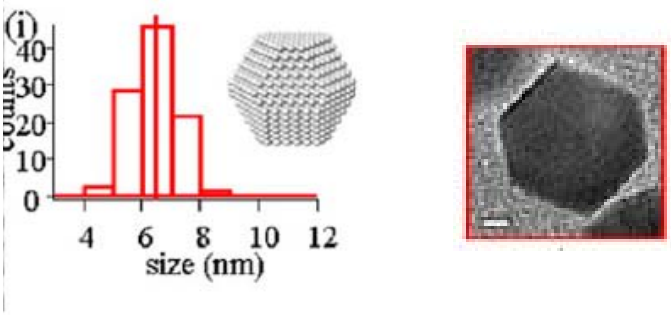
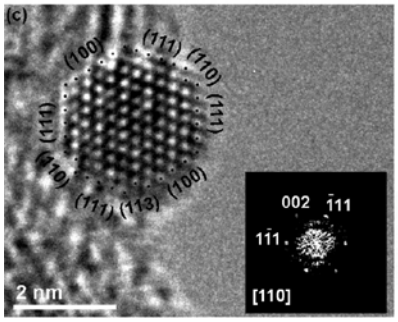
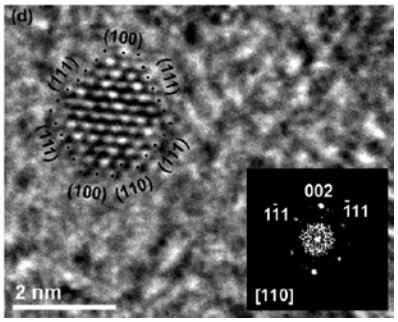


Figure S6. The location Pt-metal on the surface of the Al_2O_3

Table S2. Comparison of our TEM images and Fast Fourier Transform to other results.

Our Results	Other Results
 	  **(Ferreira et.al.)**
	 **(Swaminathan et.al)**
	  **(Alayoglu.et.al)**





(Lee et.al)