Electronic supplementary material

Electrocatalytic activity of Pt subnano/nanoclusters stabilized by pristine graphene nanosheets

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Figure S1. TEM (A) and HRTEM (B) micrographs of the GNS support. (Inset in (B): SAED pattern of the graphene sheet)



Figure S2. TEM micrographs (left) and corresponding histograms (right) of the Pt clusters decorated on (A) graphene edges and (B) surface defects.



Figure S3. High-resolution TEM micrograph of the Pt/GNS catalyst.



Figure S4. XPS spectra of (A) C1s and (B) O 1s spectrum



Figure S5. Linear sweeping voltammetry curves of Pt/C (dotted line) and Pt/GNS catalyst (solid line) at 25 °C 1 M methanol–1 M H₂SO₄ with a scan rate of 1 mV s⁻¹.



Figure S6. Cyclic voltammetry curves of the substrate Au patch in 1 M alcohol - 1 M H₂SO₄ in the potential range of 0.2 to 1.0 V vs. SCE with a scan rate of 50 mV s⁻¹.



Figure S7 TEM micrograph of the spent Pt/GNS sample after 50 cycles of cyclic voltammetry test.