

Supplementary information

Pt decorated 3D vertical graphene nanosheet arrays for efficient methanol oxidation and hydrogen evolution reaction

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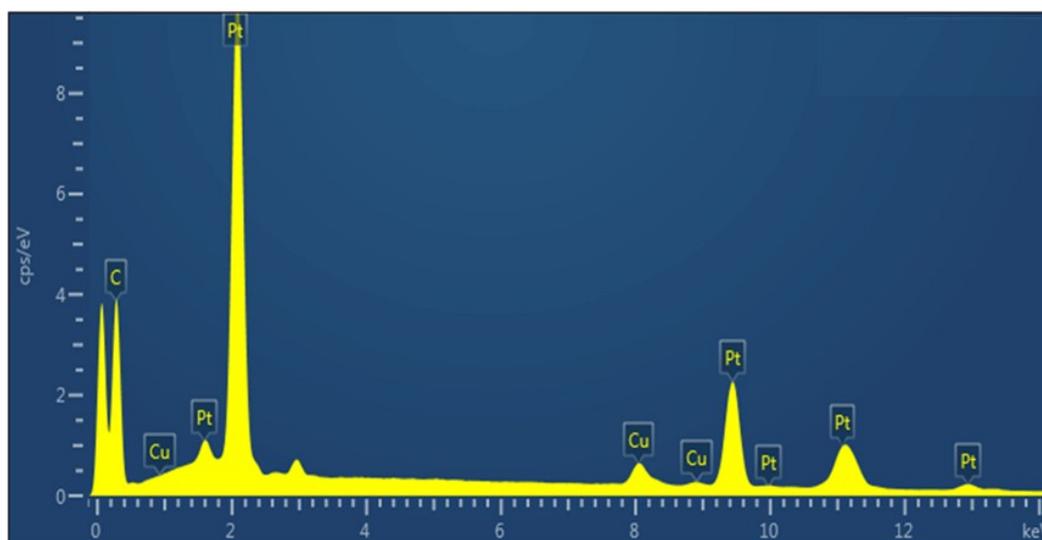


Figure S1. EDX spectra of the Pt G NSAs/CC.

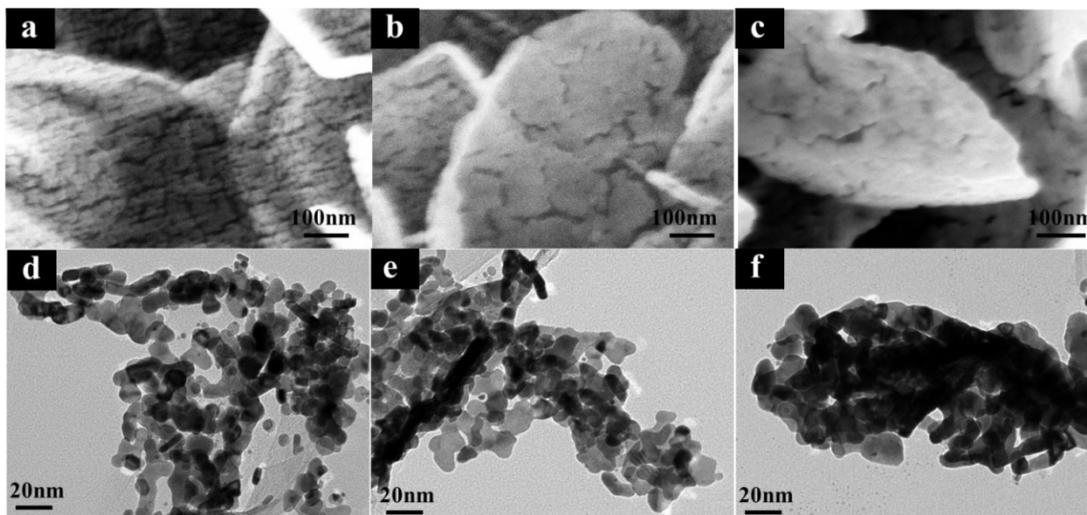


Figure S2. SEM and TEM images of (a) and (d) Pt200-VGNSAs/CC; (b) and (e) Pt300-VGNSAs/CC; (c) and (f) Pt400-VGNSAs/CC;

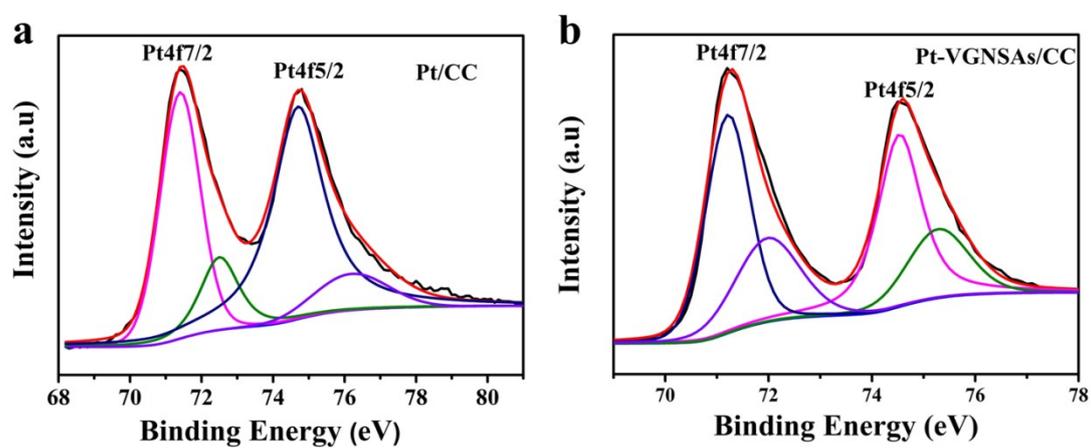


Figure S3. XPS spectrum of the (a) Pt/CC, (b) Pt-VGNSAs/CC

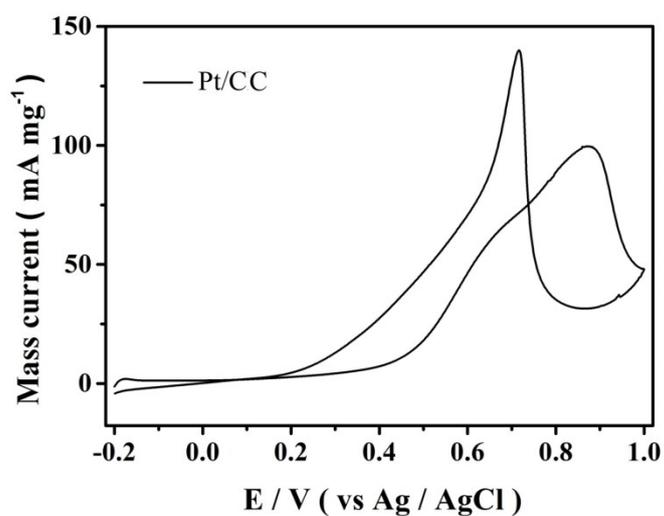


Figure S4. CVs of Pt/CC in the solution of 0.5 M CH₃OH + 0.5 M H₂SO₄ at 50 mV/s

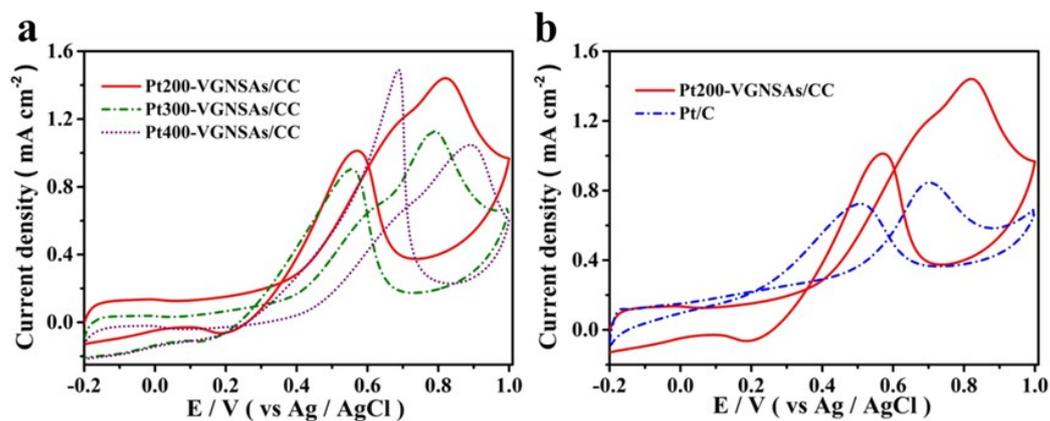


Figure S5.(a) and (b) CVs of Pt200- VGNSAs/CC, Pt300- VGNSAs/CC, Pt400- VGNSAs/CC and Pt/C/CC in the solution of 0.5 M CH₃OH + 0.5 M H₂SO₄ at 50 mV/s.(the current densities all are normalized to the ECSAs of catalysts)

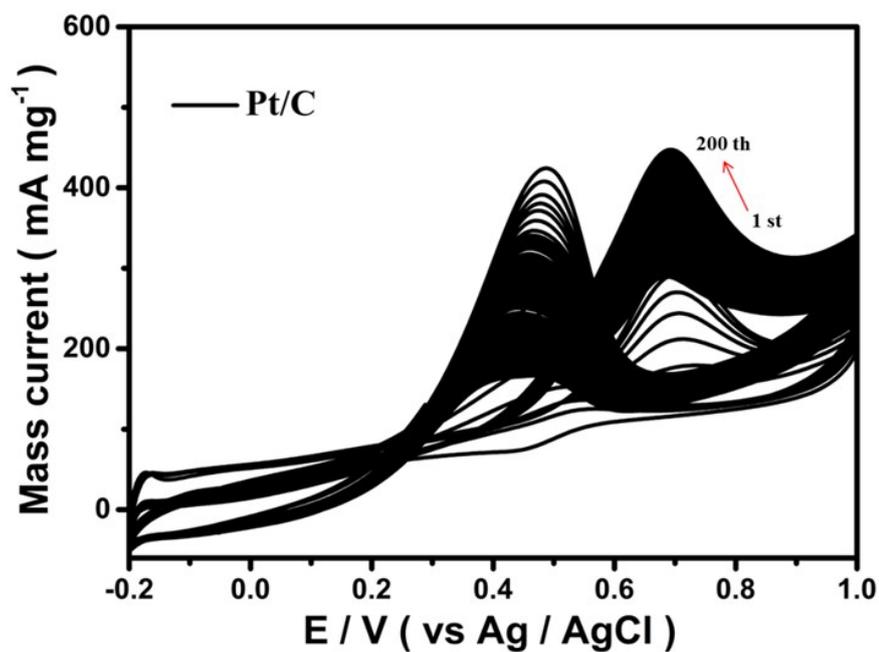


Figure S6 CVs of Pt/C/CC catalyst from the 1st to the 200th cycle in the solution of 0.5 M CH₃OH + 0.5 M H₂SO₄ at 50 mV/s.