

Supporting online materials for

A high-performance platinum electrocatalyst loaded on graphene hydrogel for high-rate methanol oxidation

Xiluan Wang, Chun Li & Gaoquan Shi*

*Department of Chemistry, Tsinghua University, Beijing 100084, People's Republic of China. *e-mail:gshi@tsinghua.edu.cn*

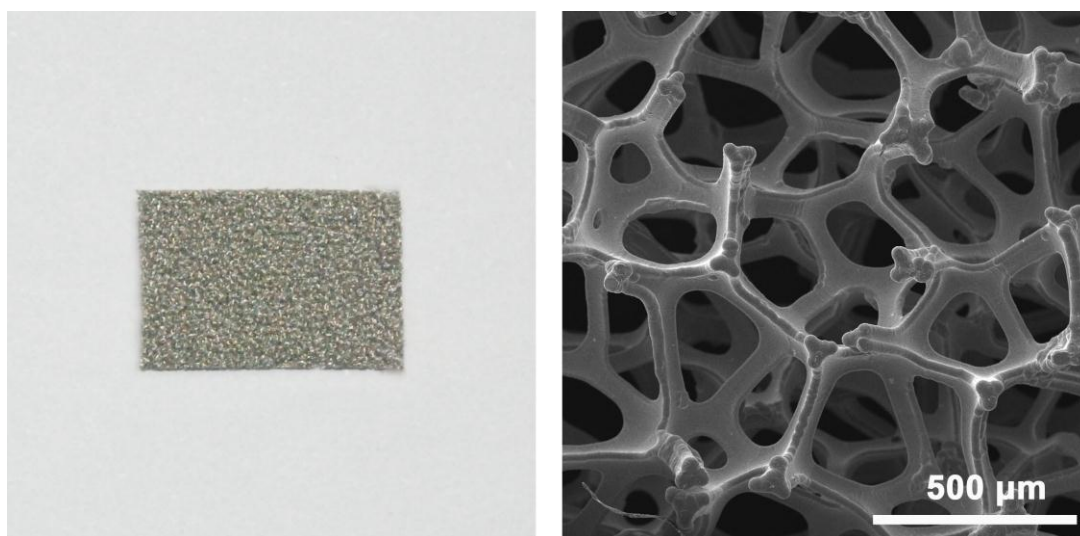


Fig. S1 The photograph and cross-sectional SEM image of a neat NF.

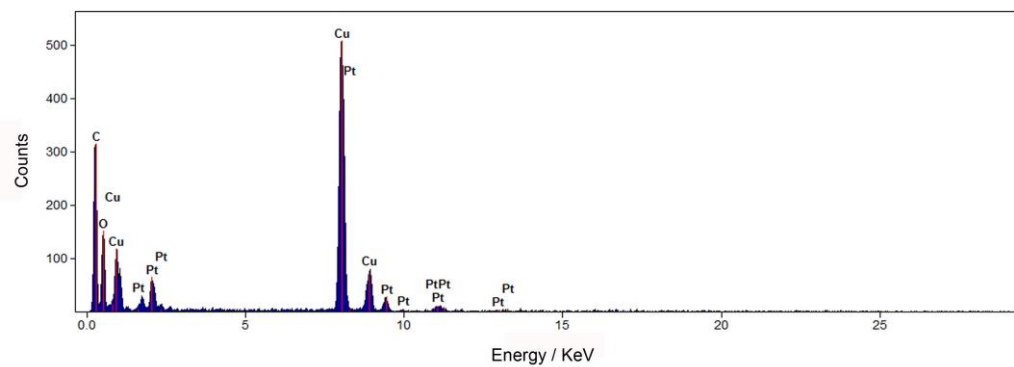


Fig. S2 EDX spectrum of the Pt/G-Gel composite sheets released from Pt/G-Gel/NF-4.

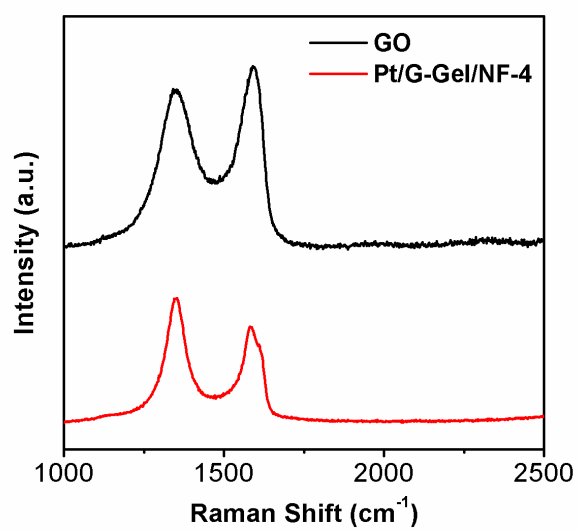


Fig. S3 Raman spectrum of GO and Pt/G-Gel/NF-4 sample.

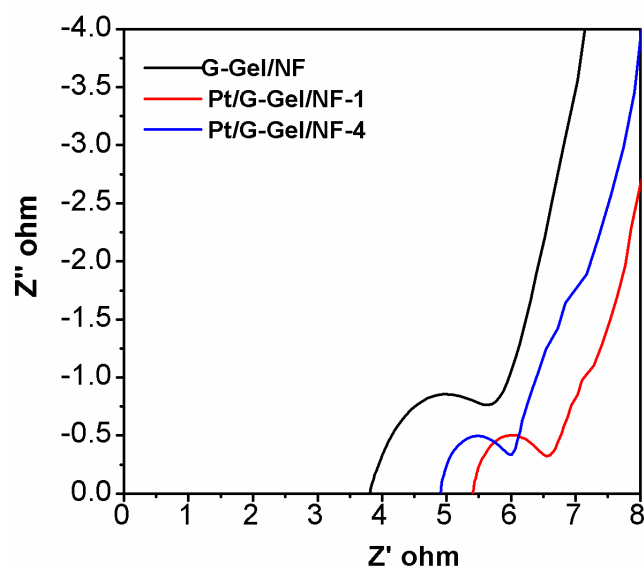


Fig. S4 EIS curves of G-Gel/NF (black), Pt/G-Gel /NF-1 (blue), Pt/G-Gel/NF-4 (red) electrodes in 1 M CH₃OH + 0.5 M KOH solution.

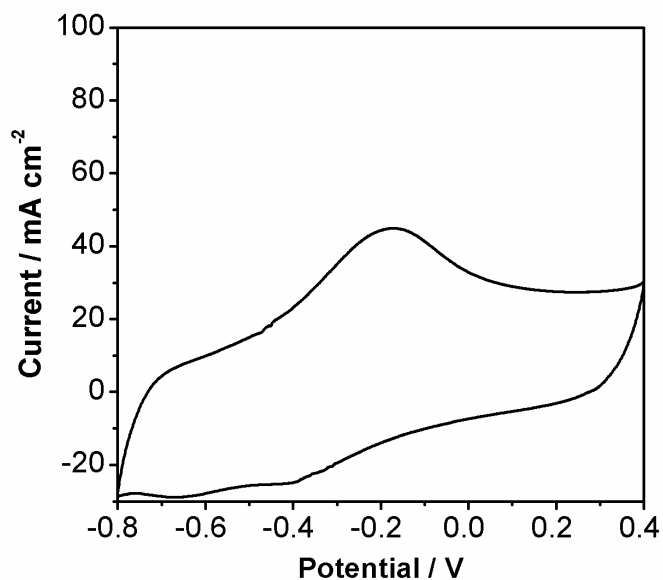


Fig. S5 CV of Pt/G-Gel/NF-6 film in 1 M CH₃OH + 0.5 M KOH solution at scan rate of 50 mV s⁻¹.

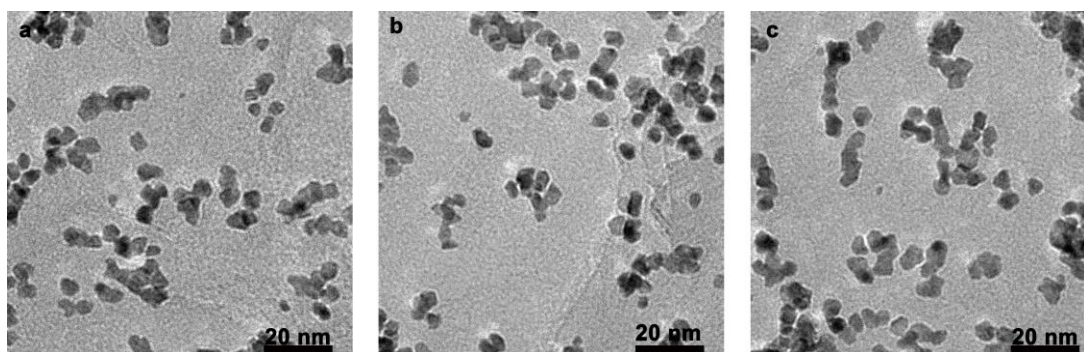


Fig. S6 (a-c) HRTEM images of the Pt/G-Gel sheets released from Pt/G-Gel/NF-4 (a) before, (b) after 1h or (c) 3h of methanol oxidation at -0.3 V.

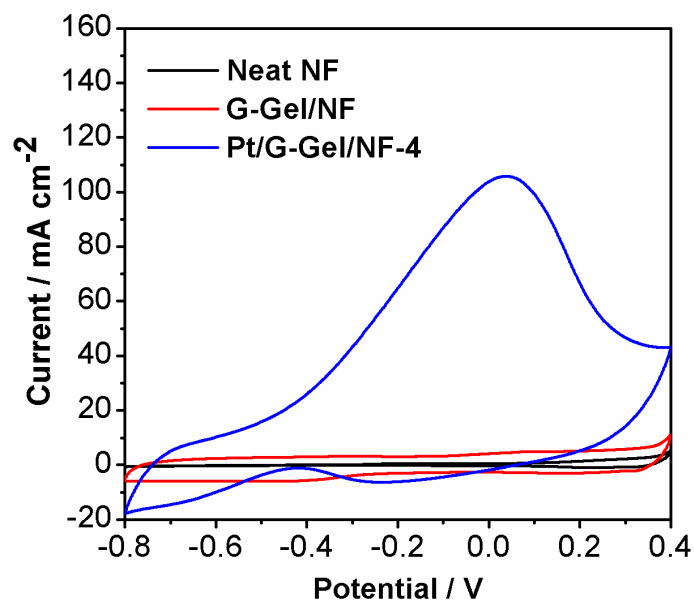


Fig. S7 CVs of neat NF, G-Gel/NF and Pt/G-Gel/NF-4 films in 1 M CH_3OH + 0.5 M KOH solution at a scan rate of 50 mV s^{-1} .

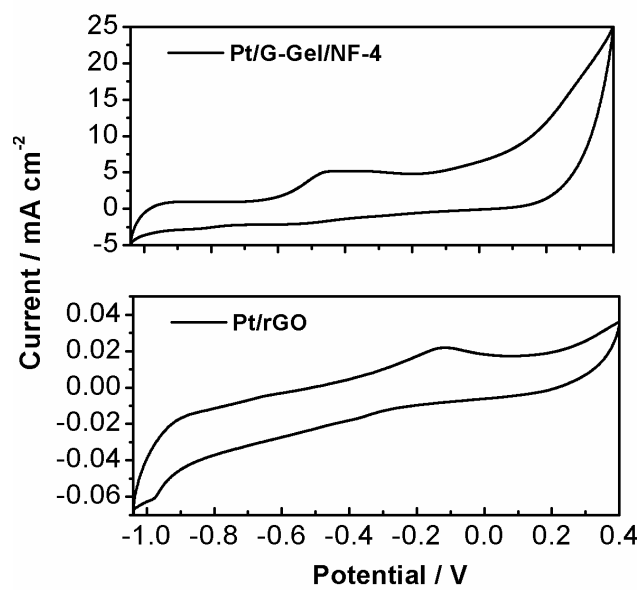


Fig. S8 CO stripping CVs of Pt/G-Gel/NF-4 and Pt/rGO electrodes in a CO saturated 0.5 M KOH solution. The scan rate was 20 mV s⁻¹.