Supplementary Material (ESI) for Journal of Materials Chemistry

High Pt loading on functionalized multiwall carbon nanotube as a highly efficient cathode electrocatalyst for proton exchange membrane fuel cell†

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Supporting Information

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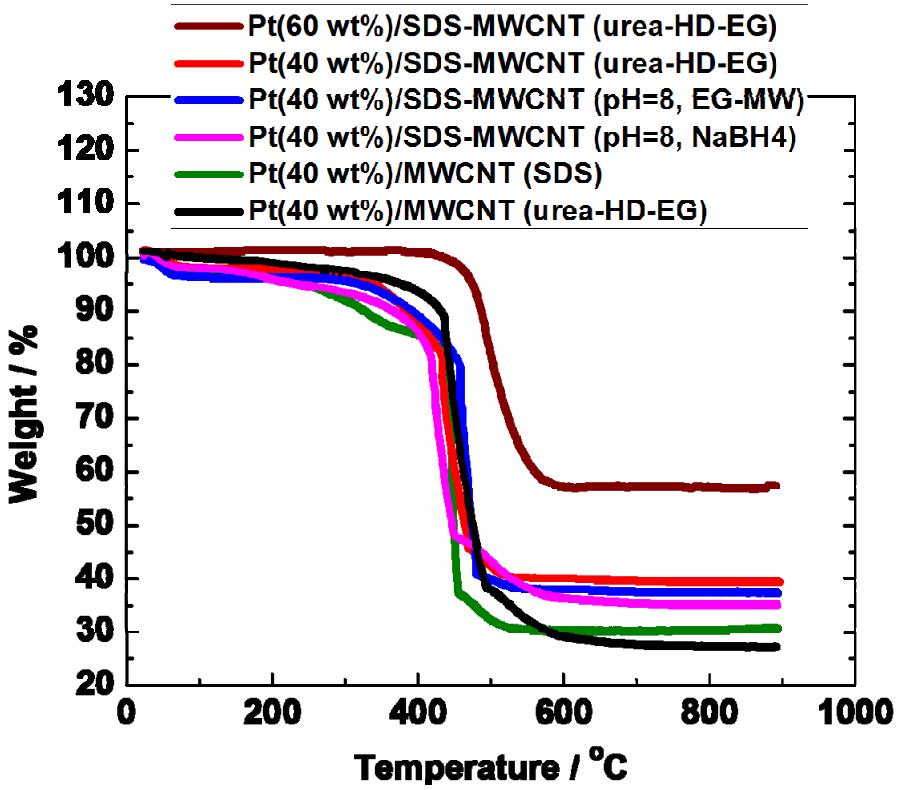

Fig. S1. Representative TGA profiles for MWCNT- or SDS-MWCNT-supported Pt catalysts synthesized by various strategies. The values marked for Pt loading are nominal ones.

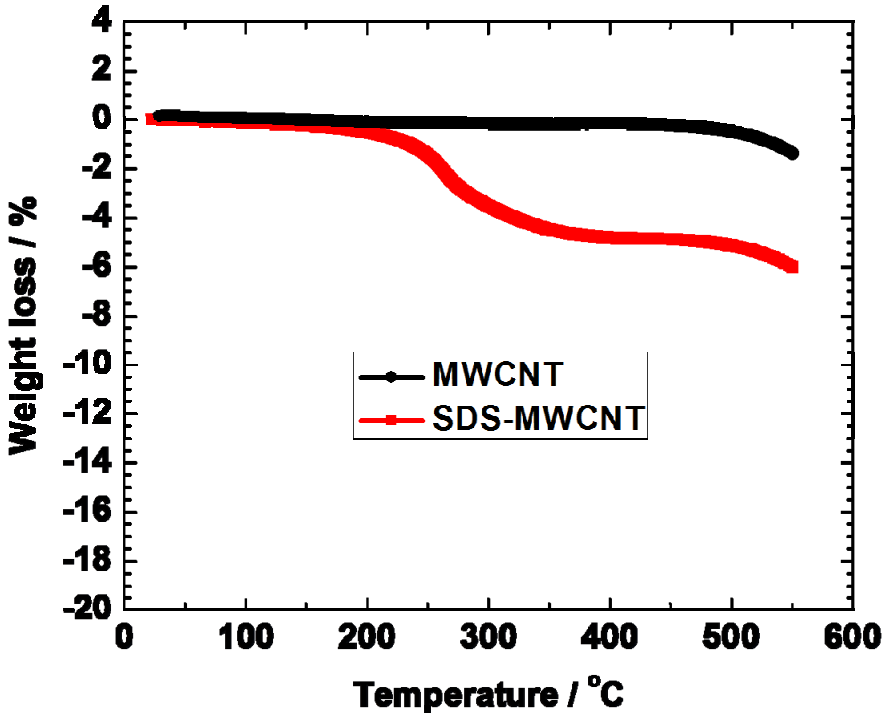

Fig. S2. Representative TGA profiles for the as-received MWCNT and SDS-modified MWCNT.

For the MWCNT without SDS modification, there is almost no obvious weight loss when the temperature is less than 500 ^{o}C. However, for the CNTs modified with SDS, an obvious weight loss is observed in the temperature range of 170-500 ^{o}C, which is mainly attributable to the decomposition of the SDS. The TGA data confirm that SDS was successfully coated onto MWCNT. From the difference in weight loss of the MWCNT without and with SDS at 500 ^{o}C, the amount of the SDS on MWCNT was estimated to be ca. 5 wt % of the SDS-MWCNT.

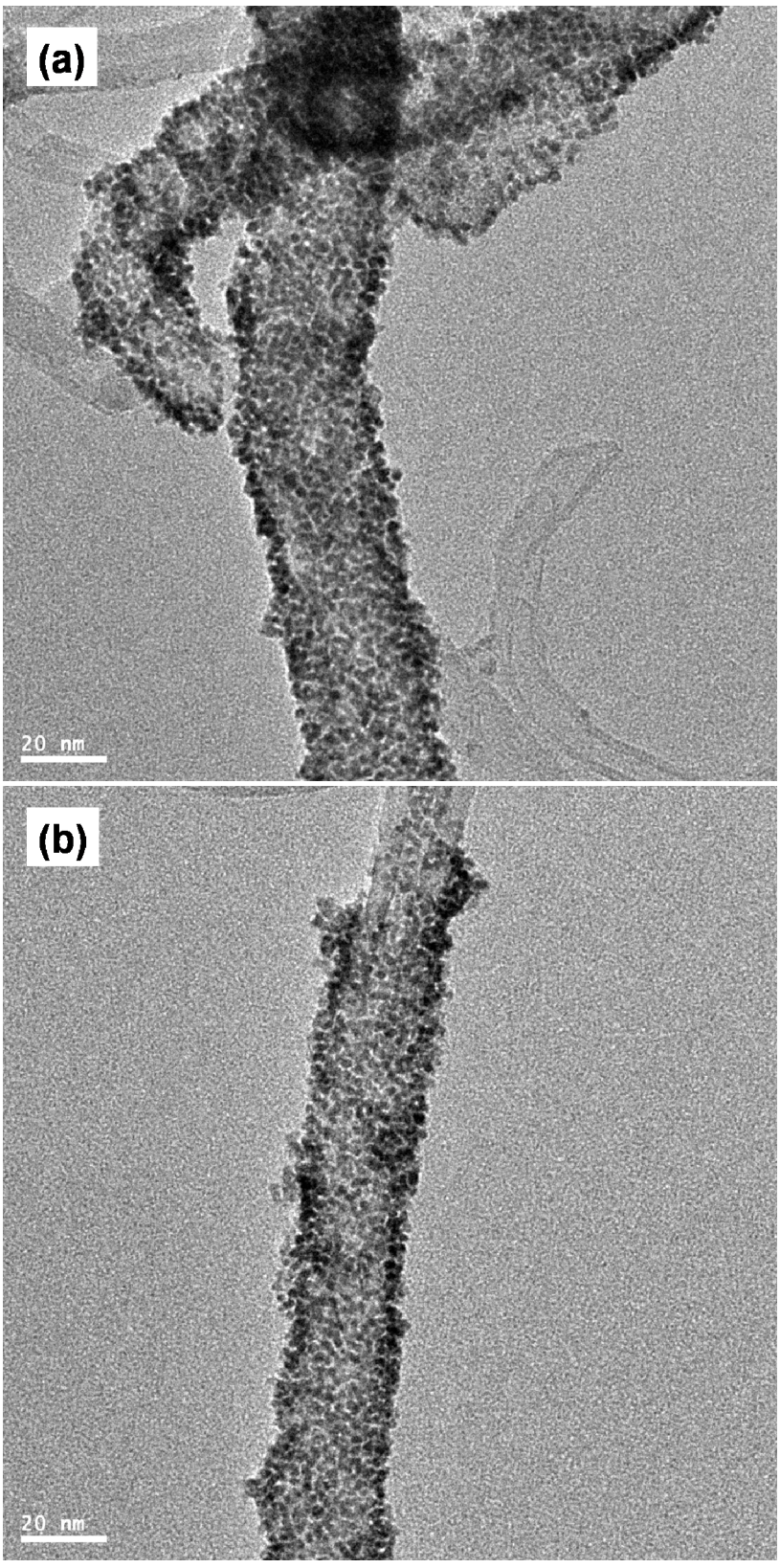

Fig. S3. Representative TEM images for SDS-MWCNT-supported Pt (60 wt%) synthesized by urea-assisted HD-EG strategy. Images (a) and (b) taken from the same sample but with different locations.

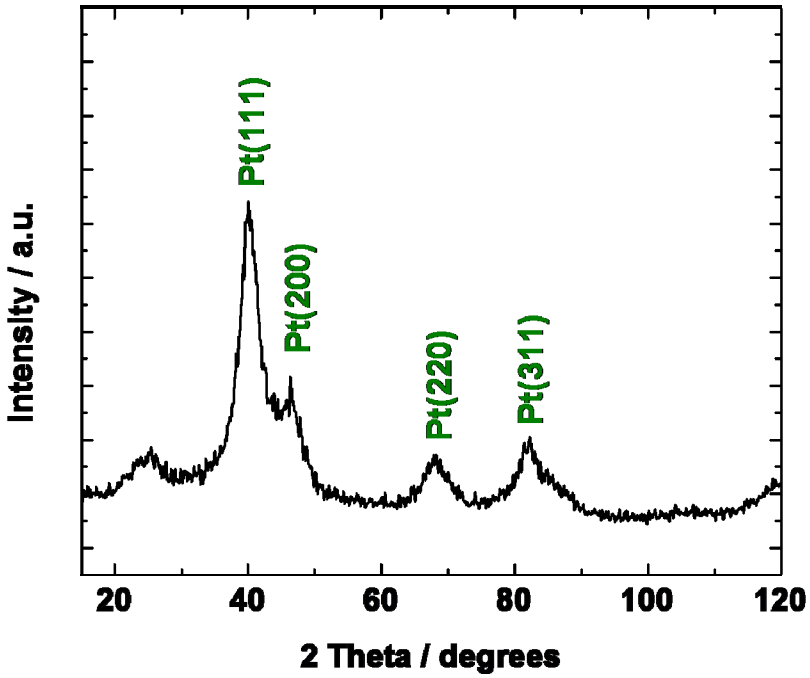

Fig. S4. Representative XRD pattern for the SDS-MWCNT-supported Pt (60 wt%) prepared by using urea-assisted HD-EG strategy.