Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics

Supporting information

Advantages of electrodes with dendrimer-protected platinum nanoparticles and carbon nanotubes for electrochemical methanol oxidation

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Table S1. Anodic peak potentials (E_{pa}) and ratios (I_F/I_R) of anodic peak currents at forward (I_F) and reverse (I_R) scans. The peak current density is compensated for non-Faraday current.

Sample	DEN(PtNP)s-loaded SAM-SPCG Electrode			CNT/DEN(PtNP)s-loaded SAM-SPCG Electrode			DEN(PtNP)s-loaded SPCGC Electrode			CNT/DEN(PtNP)s-loaded SPCGC Electrode		
M:D	E_{pa} (V)	I_F (mA)	I_F/I_R	E_{pa} (V)	I_F (mA)	I_F/I_R	E_{pa} (V)	I_F (mA)	I_F/I_R	E_{pa} (V)	I_F (mA)	I_F/I_R
0.1	0.38	0.41	-	0.39	0.14	-	0.30	0.02	-	0.39	0.25	-
0.2	0.42	0.35	-	0.44	0.15	-	0.47	0.17	2.28	0.40	0.35	-
0.3	0.54	0.65	-	0.45	0.15	-	0.54	0.68	3.10	0.53	1.74	4.24
0.4	0.50	1.71	6.33	0.45	0.19	-				0.50	1.94	7.76
0.5	0.58	2.57	4.94	0.52	0.32	-				0.50	2.19	8.11

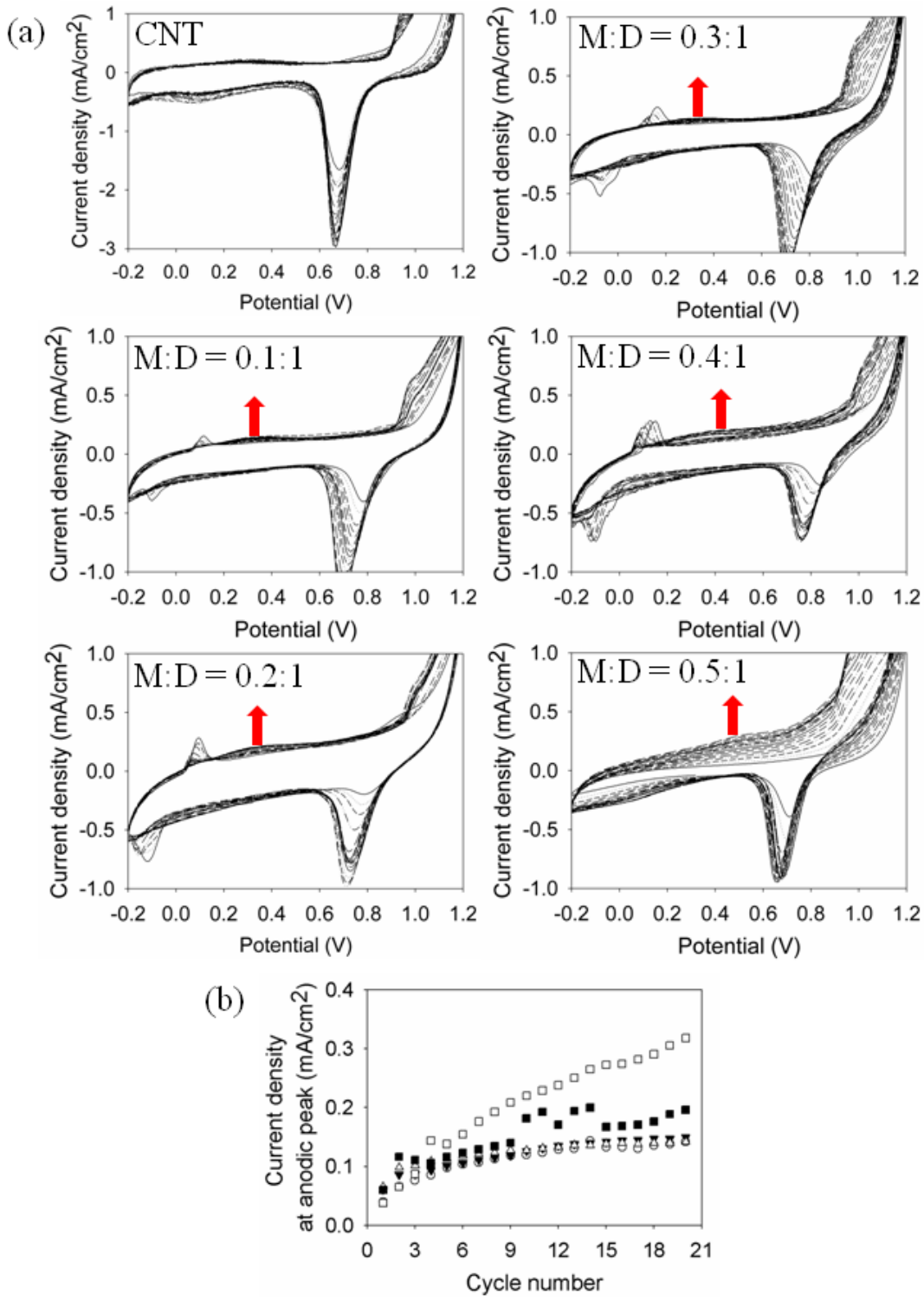

Figure S1. (a) Cyclic voltammograms of CNT/DEN(PtNP)s-loaded SAM-SPCG electrodes in an 0.5 M H_2SO_4 solution with 2 M MeOH and (b) a plot of current density (compensated for non-Faraday current) at anodic peak against cycle number. CNT-loaded: ●. CNT/DEN(PtNP)s-loaded (M:D): ○ 0.1:1, ▼ 0.2:1, Δ 0.3:1, ■ 0.4:1, □ 0.5:1.

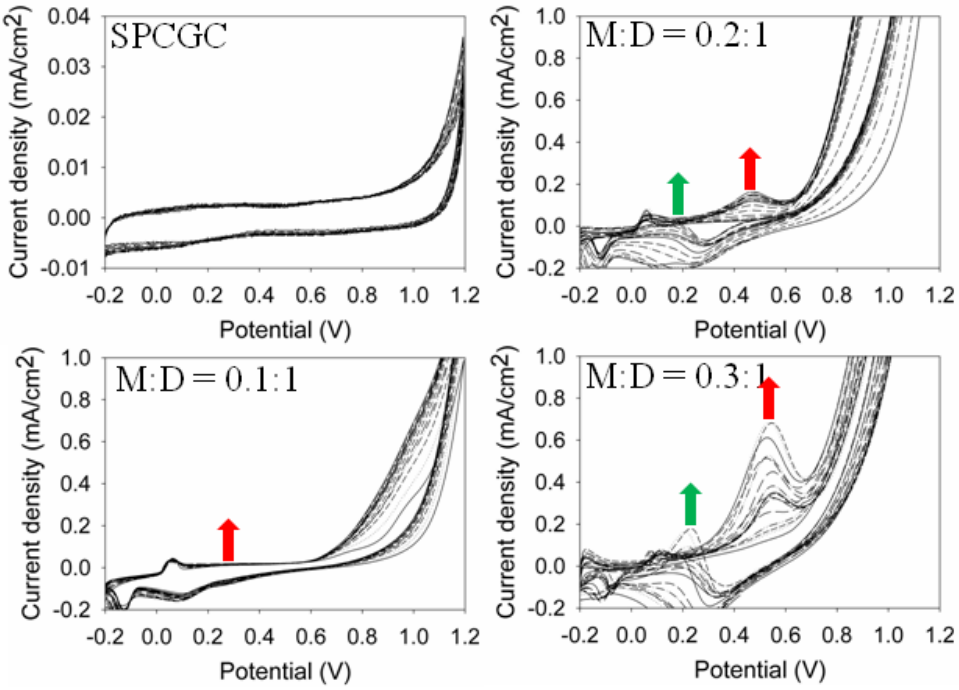

Figure S2. Cyclic voltammograms of DEN(PtNP)s-loaded SPCGC electrodes in an aqueous 0.5 M H_2SO_4 solution with 2 M MeOH.

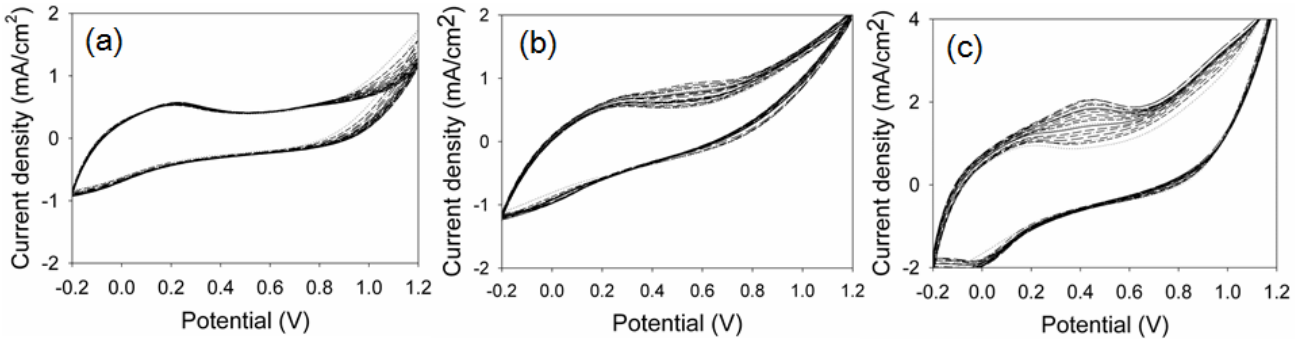

Figure S3. Cyclic voltammograms of CNT/DEN(PtNP)s-loaded SPCGC electrodes at M:D = (a) 0.1:1, (b) 0.3:1 and (c) 0.5:1 in an aqueous 0.5 M H_2SO_4 solution with 0.1 M MeOH.