Electronic Supplementary Information (ESI)

Green Synthesis of Pt-Pd Bimetallic Nanoparticles Decorated Reduced Graphene Oxide and its Robust Catalytic Activity for Efficient Ethylene Glycol Electrooxidation

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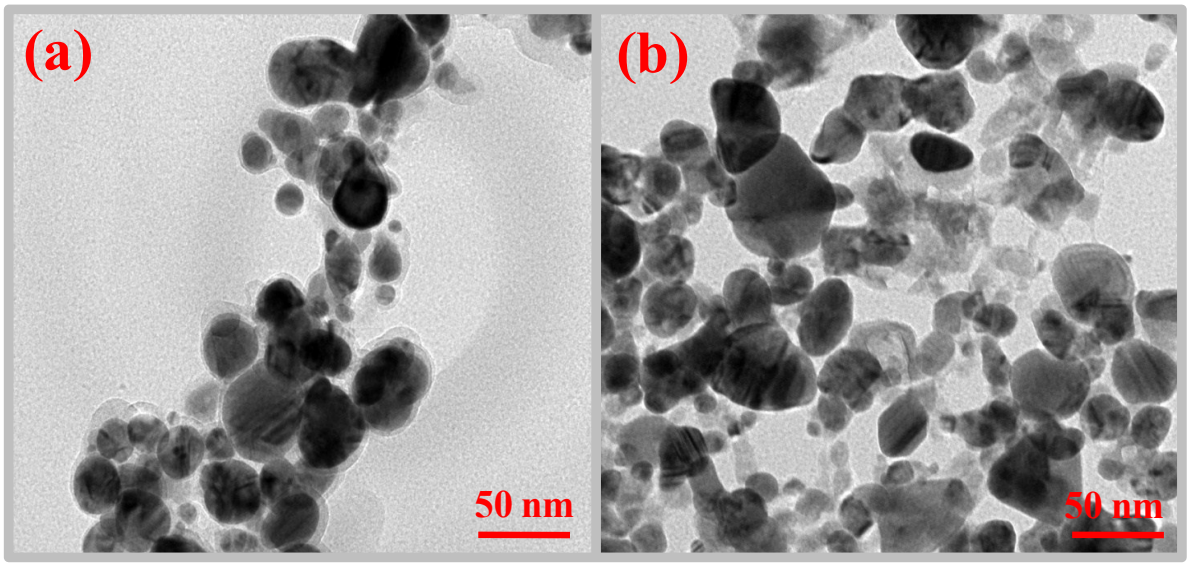

Fig. S1 TEM images of (a) Pt and (b) Pt-Pd nanostrucutres prepared with vermicast extract.

Table S1. Comparison of electrocatalytic activity of rGO/Pt-Pd prepared by using vermicasts extract with reported in literatures.

Catalysts	ECSA[a] ($m^2\ g^{-1}$)	I_f[b] ($A\ mg^{-1}$)	Electrolyte	References
rGO[c]/Pt-Pd NF[d]	53.72	1.72	1.0 M KOH	1
PtPd@Pt NCs[e]/rGO[c]	62.19	0.23	0.5 M H_2SO_4	2
PtPd@Pt NCs[e]/rGO[c]	62.19	1.16	1.0 M KOH	2
PtCu NW[f]		1.46	1.0 M KOH	3
PtAg NCs[e]	28.95	0.86	1.0 M KOH	4
AuPd NCs[e]	14.61	0.69	0.5 M KOH	5
Pd/Ag@C[g]	39.6	1.03	1.0 M KOH	6
Pt-Pd multipods	20.6	0.82	1.0 M KOH	7
PdPt ND[h]	31.50	0.14	1.0 M KOH	8
PdCo ND	25.52	0.07	1.0 M KOH	9
PdNi ND	22.02	0.03	1.0 M KOH	9
Pd ND	16.42	0.02	1.0 M KOH	9
rGO[c]/Pd	90.9[i]	0.03	0.5 M KOH	9
NiPt TONPs[j]	88.1	9.10	1.0 M KOH	10
NiPt NPs[k]	61.7	3.40	1.0 M KOH	10
Commercial Pt/C[l]	**22.83**	**0.38**	**0.5 M H_2SO_4**	**This work**
rGO[c]/Pt-Pd	**51.33**	**0.80**	**0.5 M H_2SO_4**	**This work**

[a]electrochemically active surface area; [b]forward peak currend density; [c]reduced graphene oxide; [d]nanoflowers; [e]nanocrystals; [f]nanowires; [g]nanocables; [h]nanodendrites; [i] $cm^2\ mg^{-1}$; [j]truncated octahedral nanoparticles; [k]nanoparticles; [l]carbon.

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