

Supporting Information

for

One-Step Pyrolysis Method for the Synthesis of Highly Efficient 3D Hollow Carbon Nanostructures Supported Metallic Catalysts

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Table 1 Pt content (%wt) of the PtRu/C nanosphere catalysts analyzed by ICP with the Pt/Ru atomic ratio of 50:50 and 0.2 g hollow chitosan nanosphere template in the adsorption solution.

Sample No.	C _{Pt} =C _{Ru} (mM)	Pt wt%
1	3	3.2
2	6	5.3
3	9	7.3
4	12	9.2
5	15	15.8
6	18	28.6
7	21	25.4
8	24	25.6

Table 2 Pt content (At%) of the PtRu/C nanosphere catalysts analyzed by EDX with the constant metallic concentration and different Pt/Ru atomic ratio in the adsorption solution.

PtRu molar ratio in the absorption solution	Pt At%	Ru At%
90:10	75.06	24.94
75:25	60.90	39.10
50:50	52.38	47.62
25:75	29.70	70.30
PtRu/XC-72	43.39	56.61

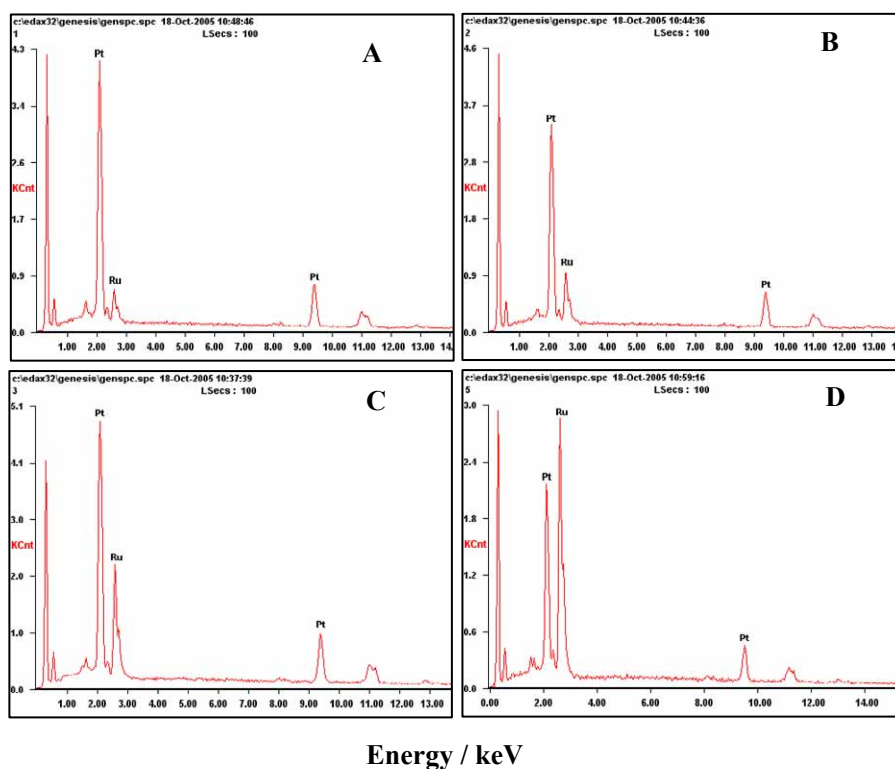


Figure S1 EDX composition analysis of the hybrid composites (A) Pt₉₀Ru₁₀, (B) Pt₇₅Ru₂₅, (C) Pt₅₀Ru₅₀, and (D) Pt₂₅Ru₇₅ supported on HCNS (atomic ratios of PtRu according to the adsorption solutions).