Supporting Information

Stable Rhodium Single-Site Catalyst Encapsulated within Dendritic Mesoporous Nanochannels

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Supplementary Informations

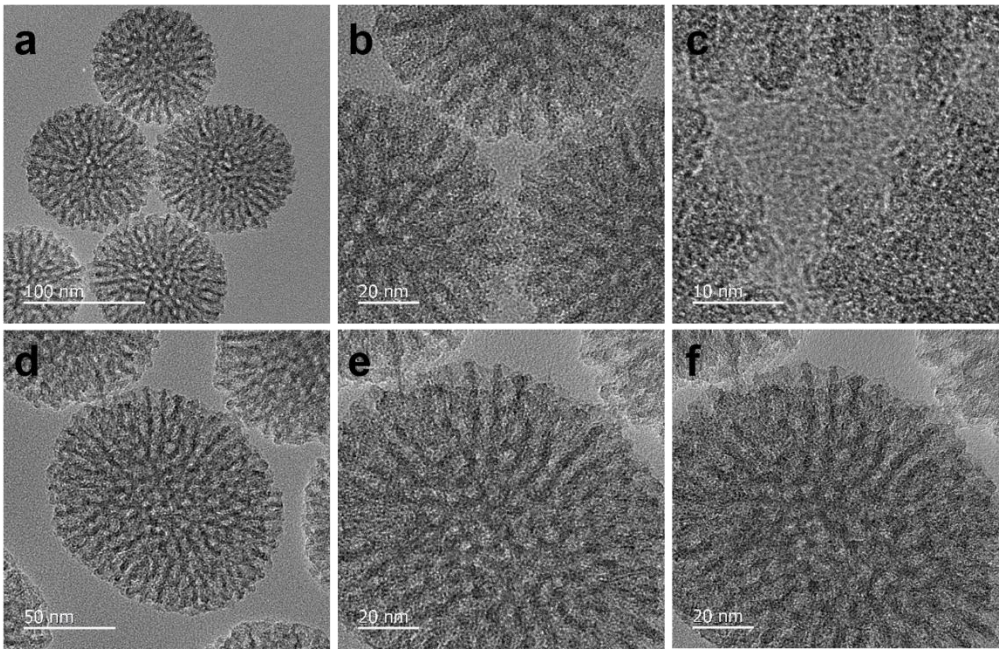
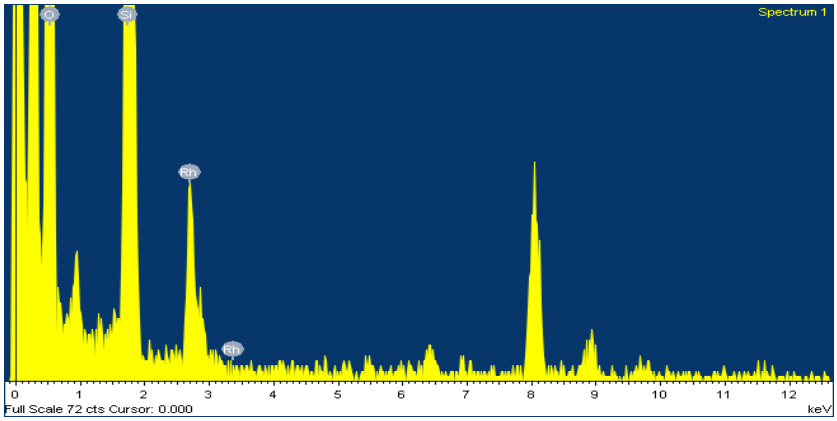


Fig. S1 More detailed characterizations by TEM: TEM images (a to f) of the as prepared Rh_1@MSNS-NH_2, a-c, one particular area zoomed in with different magnification, d-f another area taken with slight different focus depth.



Element	Weight%	Atomic%
Si	33.46	23.27
O	62.20	75.91
Rh	4.33	0.82

Fig. S2 EDS spectrum of a selected area in Rh_1@MSNS-NH_2 sample and the corresponding analysis result.

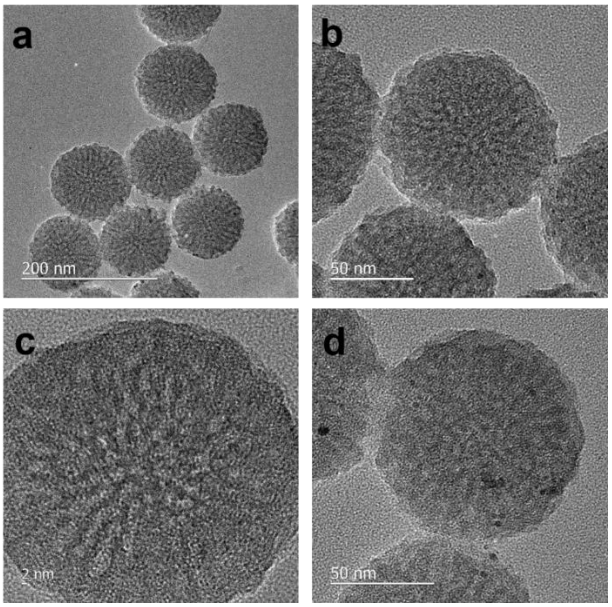


Fig. S3. TEM images of the Rh_1@MSNS-NH_2 after serving as catalyst for the reduction of 4-nitrophenol.

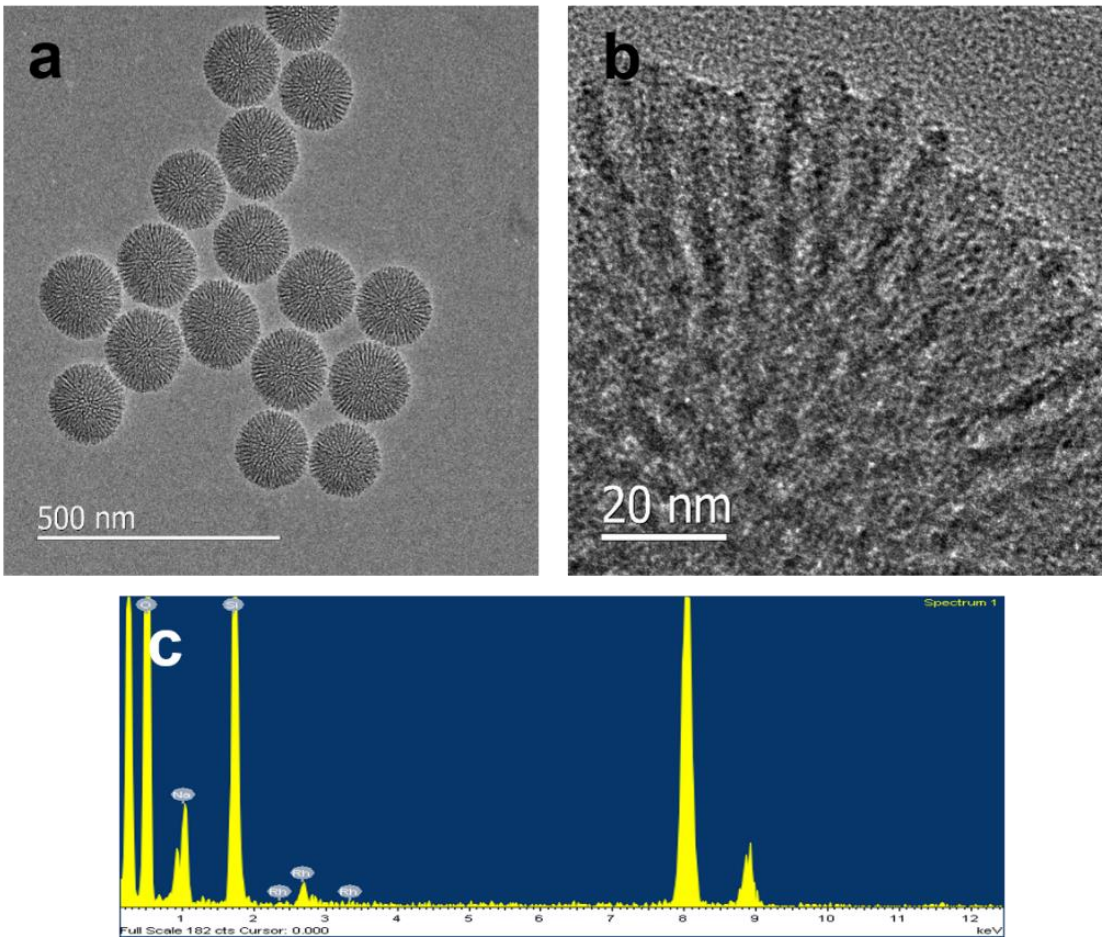


Fig. S4 TEM images and EDX result of the as-prapared Rh/MSNS without surface functionalization.

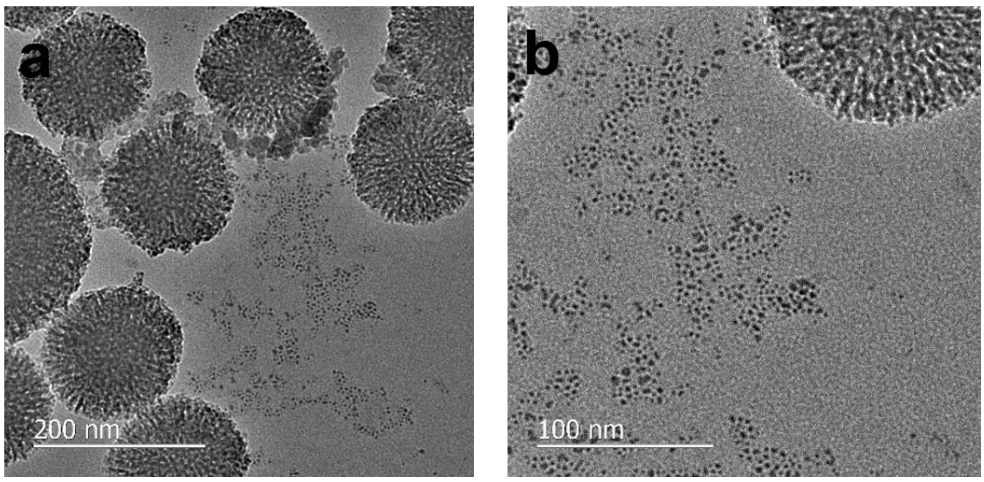


Fig. S5 TEM images of the Rh/MSNS after serving as catalyst for the reduction of 4-nitrophenol.

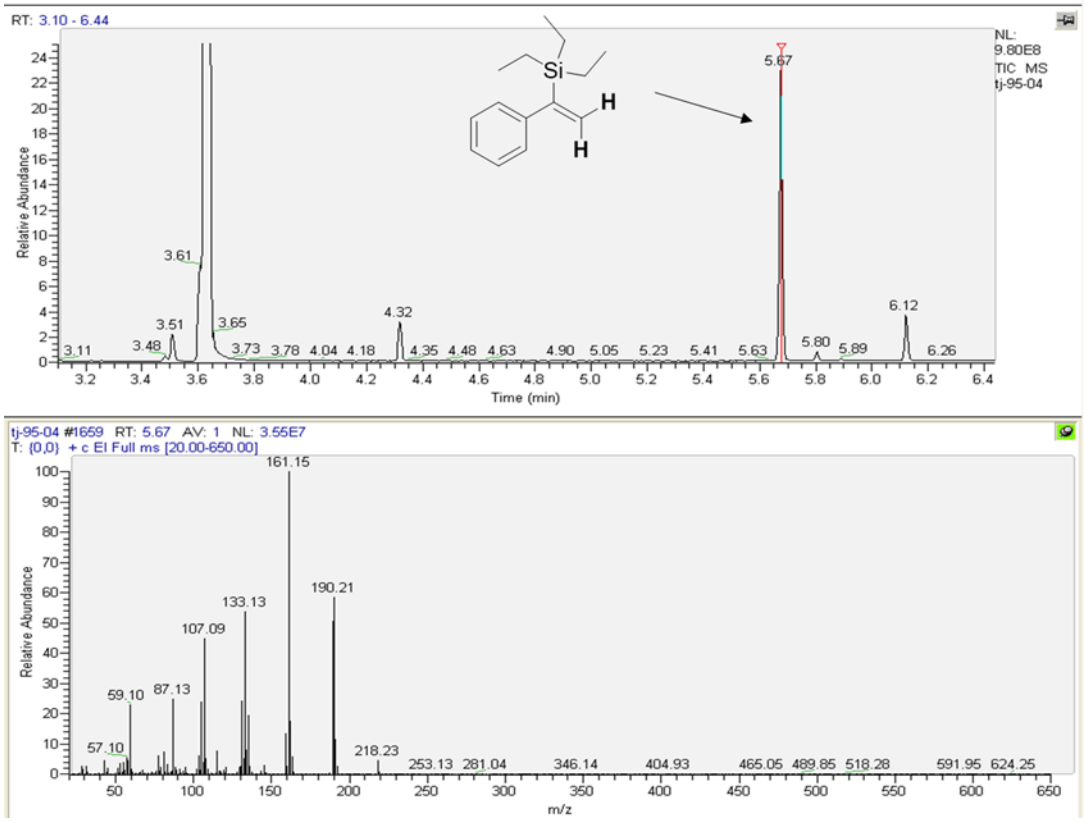
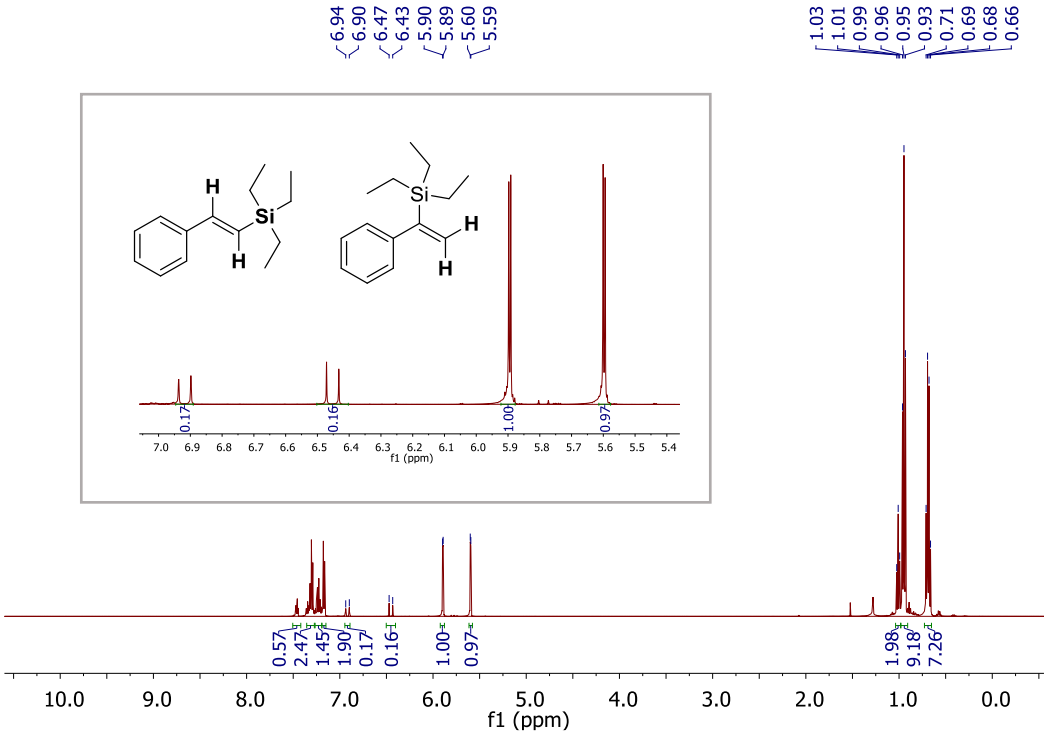
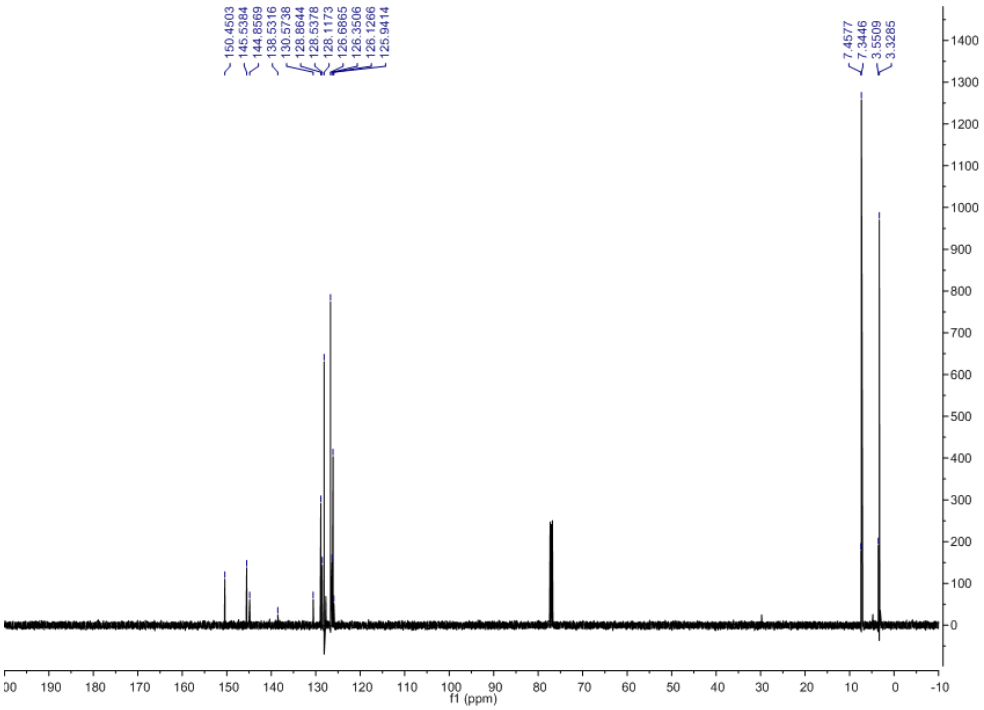


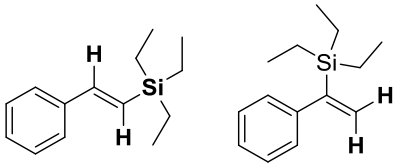
Fig. S6: GC-MS result of the reaction product obtained in the hydrosilylation of phenylacetylene with triethylsilane.

^{1}H NMR



^{13}C NMR





(E)-triethyl(styryl)silane and triethyl(1-phenylvinyl)silane.

^{1}H NMR (500 MHz, $CDCl_3$) δ 7.50 – 7.42 (m, 0.57H), 7.36 – 7.27 (m, 2.47H), 7.27 – 7.19 (m, 1H), 7.17 (dt, J = 3.0, 1.8 Hz, 2H), 6.92 (d, J = 19.3 Hz, 0.17H), 6.45 (d, J = 19.3 Hz, 0.16H), 5.89 (d, J = 3.1 Hz, 1H), 5.60 (d, J = 3.1 Hz, 1H), 1.01 (t, J = 7.9 Hz, 2H), 0.95 (t, J = 7.9 Hz, 9H), 0.69 (q, J = 7.9 Hz, 7H). ^{13}C NMR (126 MHz, $CDCl_3$) δ 150.45, 145.54, 144.86, 138.53, 130.57, 128.86, 128.54, 128.12, 126.69, 126.35, 126.13, 125.94, 7.46, 7.34, 3.55, 3.33.

Fig. S7. ^{1}H NMR and ^{13}C NMR spectra of the hydrosilylation reaction product after purification