

Supporting Information

Synthesis of Discrete and Dispersible Hollow Mesoporous Silica Nanoparticles with Tailored Shell Thickness for Controlled Drug Release

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Table S1 Preparation of HMSN with different hollow core diameters and shell thickness

Samples ^[a]	Core template ^[b]	CTAB (g)	TEOS (mL)
HMSN-C70-S20	PTBA-84	0.15	0.32
HMSN-C70-S65	PTBA-84	0.64	2.49
HMSN-C70-S95	PTBA-84	1.03	4.00
HMSN-C30-S40	PTBA-36	0.30	1.36
HMSN-C110-S40	PTBA-120	0.30	0.65
HMSN-C180-S40	PTBA-200	0.30	0.20

[a] All the samples are prepared with the same volume ammonia solution (25 wt%) of 0.85 mL.

[b] The mass of core template is 60 mg.

Table S2 Particle size and size distribution of the PTBA core template

Samples	DLS	
	Diameter (nm)	PDI ^[a]
PTBA-36	36	0.16
PTBA-84	84	0.12
PTBA-120	120	0.10
PTBA-200	200	0.02

[a] PDI was the polydispersity index.

Table S3 Particle size and size distribution of the HMSN with different core sizes and shell thickness

Samples	DLS	
	Diameter (nm)	PDI ^[a]
HMSN-C70-S20	122	0.08
HMSN-C70-S65	225	0.06
HMSN-C70-S95	300	0.07
HMSN-C30-S40	117	0.07
HMSN-C110-S40	218	0.05
HMSN-C180-S40	293	0.06

[a] PDI was the polydispersity index.

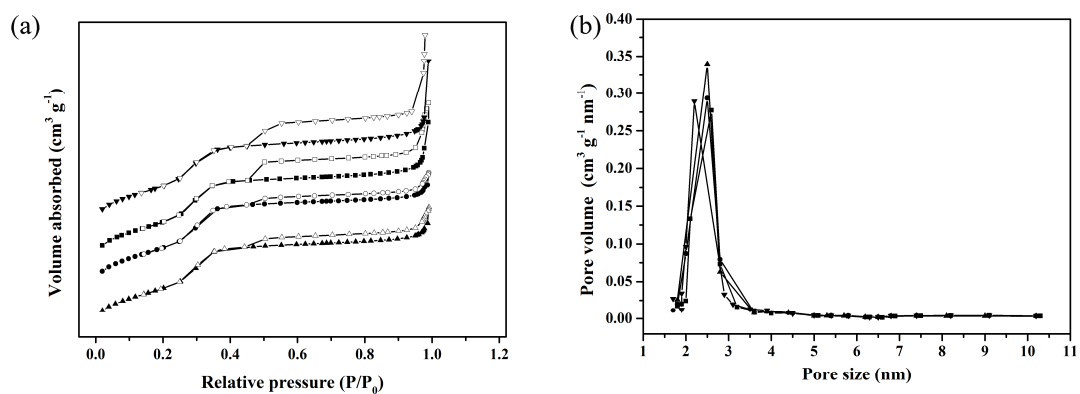


Fig. S1 (a) Adsorption-desorption isotherm of HMSN with different shell thickness; (b) Pores size distribution of HMSN with different shell thickness obtained by BJH method. HMSN-C70-S20 (▼), HMSN-C70-S40 (■), HMSN-C70-S65 (●), HMSN-C70-S95 (▲).

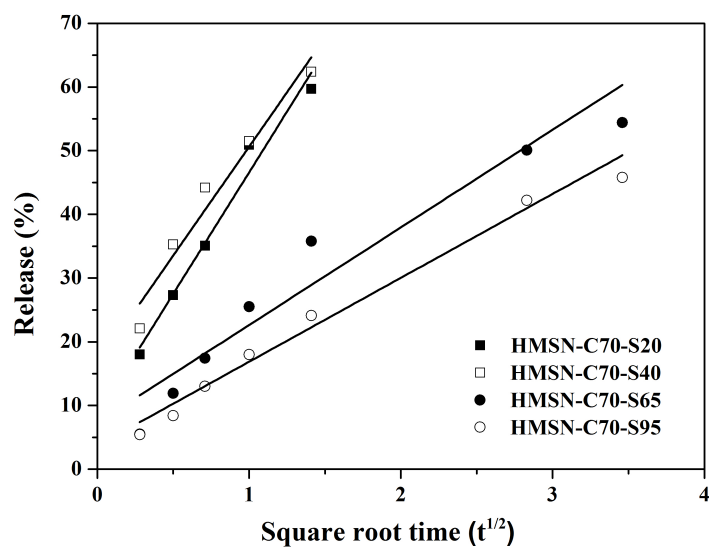


Fig. S2 The release percentage of DOX from HMSN with different shell thickness versus the square root of time (Higuchi model) profiles at pH 5.5.

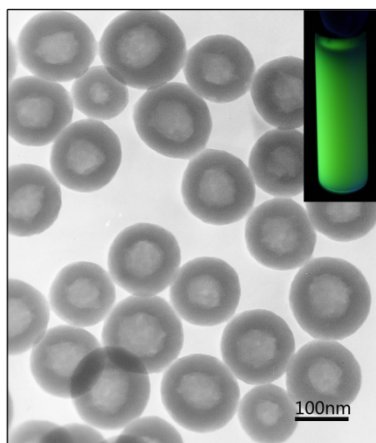


Fig. S3 TEM image of FITC-HMSN. The inset is a photograph of FITC-HMSN under UV irradiation.