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Supplementary Information

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Fabricated Materials	BET surface Area (m^2/g)	Pore Size (nm)	Pore Volume (cm^3/g)	ζ- Potential (mV)
MSPs	932	3.64	0.92	-27.43
NH_2-MSPs	857	2.97	0.79	16.80
COOH-MSPs	694	2.72	0.72	-35.83
CLS-MSPs	486			0.509

Table S1: BET surface area, pore size, pore volume and ζ- Potential of different synthesized nanoparticles.

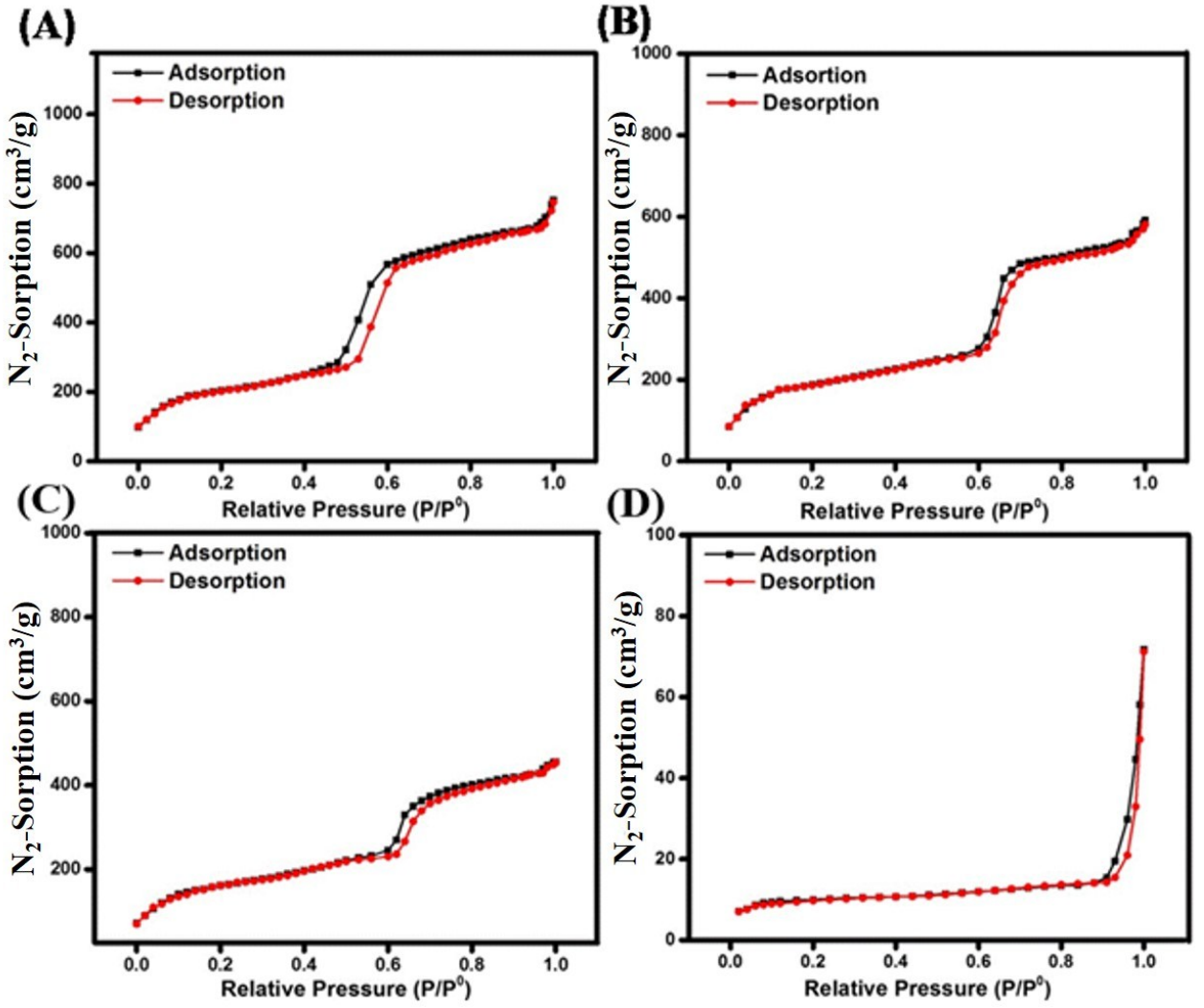

Figure S1: N_2-adsorpion/desorption Isotherms of different synthesized nanoparticles **(A)** N_2-adsorbed/desorbed by MSPs **(B)** N_2- adsorbed/desorbed by NH_2-MSPs **(C)** N_2- adsorbed/desorbed by COOH-MSPs **(D)** N_2- adsorbed/desorbed by DOX/CLS-MSPs.

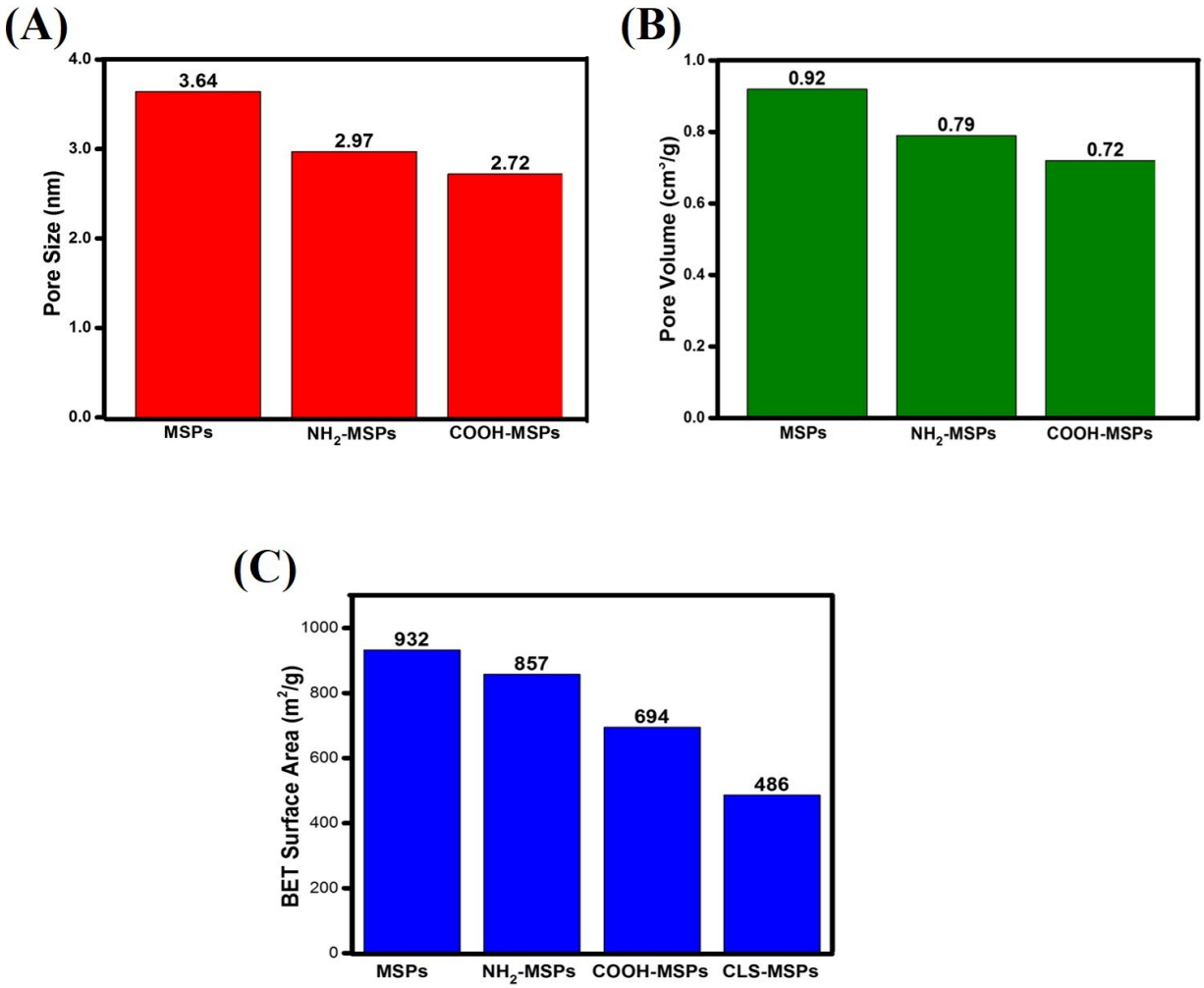

Figure S2: The pore size, pore volume and surface area column distribution of synthesized mesoporous nanoparticles. **(A)** Pore size distribution of MSPs, NH_2-MSPs, and COOH-MSPs **(B)** Pore volume distribution of MSPs, NH_2-MSPs, and COOH-MSPs **(C)** The surface area distribution of MSPs, NH_2-MSPs, COOH-MSPs and DOX/CLS-MSPs

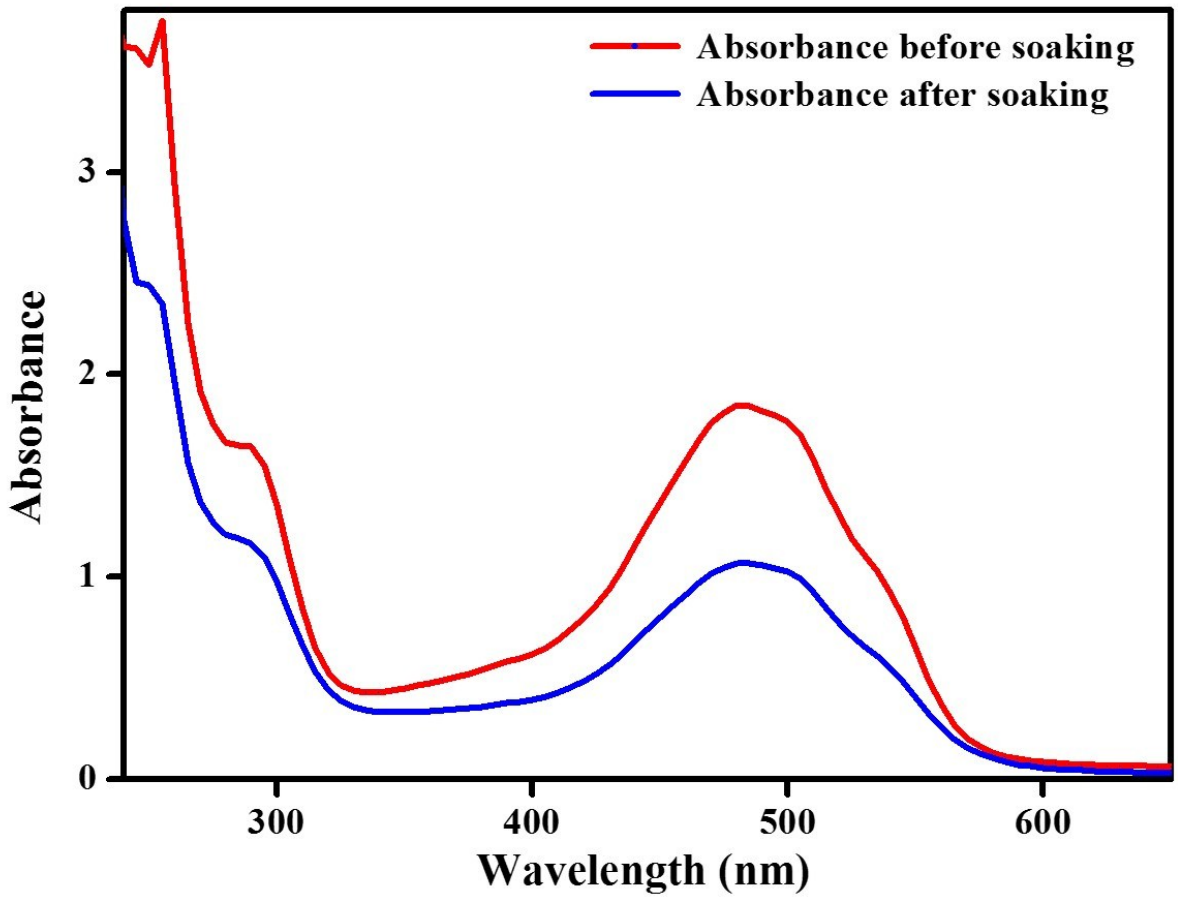

Figure S3: Absorbance comparison; absorbance of initial DOX concentration before soaking by MSPs (red line), absorbance of remaining DOX concentration after soaking by MSPs (blue line). The drug loading efficiency of MSPs was about 42 μmol/g of SiO_2.

ABBREVIATIONS

MSPs……. ……. Mesoporous Silica Nanoparticles

DOX……... Doxorubicin. HCl

APTES…….....3-aminopropyl trimethoxysilane

NH_2 –MSPs…….....APTES modified mesoporous silica nanoparticles

COOH-MSPs……... Succinic anhydride modified/carboxylated mesoporous silica nanoparticles

CLS-MSPs…….. Cellulose conjugated mesoporous silica nanoparticles

DOX/CLS-MSPs……. Doxorubicin encapsulated cellulose conjugated mesoporous silica nanoparticles.

MTT……. 3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide.

TGA……. Thermogravimetric Analysis

TEM……. Transmission Electron Microscope

XRD……..X-ray Diffraction