# Electronic Supporting Information

## A Porosity Difference Based Selective Dissolution Strategy to Prepare Shape-Tailored Hollow Mesoporous Silica Nanoparticles

Adem Yildirim[a,b*] and Mehmet Bayindir[a,b,c*]

[a]*UNAM-National Nanotechnology Research Center, Bilkent University, 06800 Ankara, Turkey*
[b]*Institute of Materials Science and Nanotechnology, Bilkent University, 06800 Ankara, Turkey*
[c]*Department of Physics, Bilkent University, 06800, Ankara, Turkey*

We have provided additional TEM images of helical nanorods, hollow spheres and hollow nanordos prepared at different conditions and FTIR spectra of nanospheres.

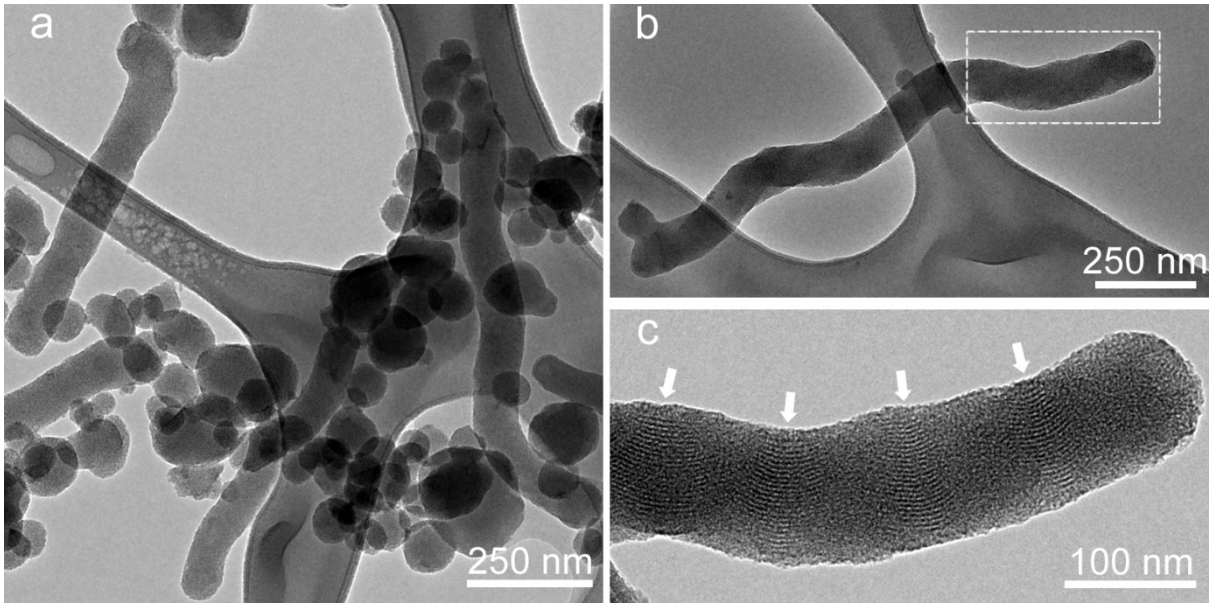


**Fig. S1** TEM images of MSNs prepared using 20 mg of RB. (a) Low magnification image showing the polydispersity of the particles. (b) TEM image of a helical nanorod with large aspect ratio. (c) Close-up image of the helical nanorod shown in (b). White arrows indicate the helical porous structure of the nanorod.

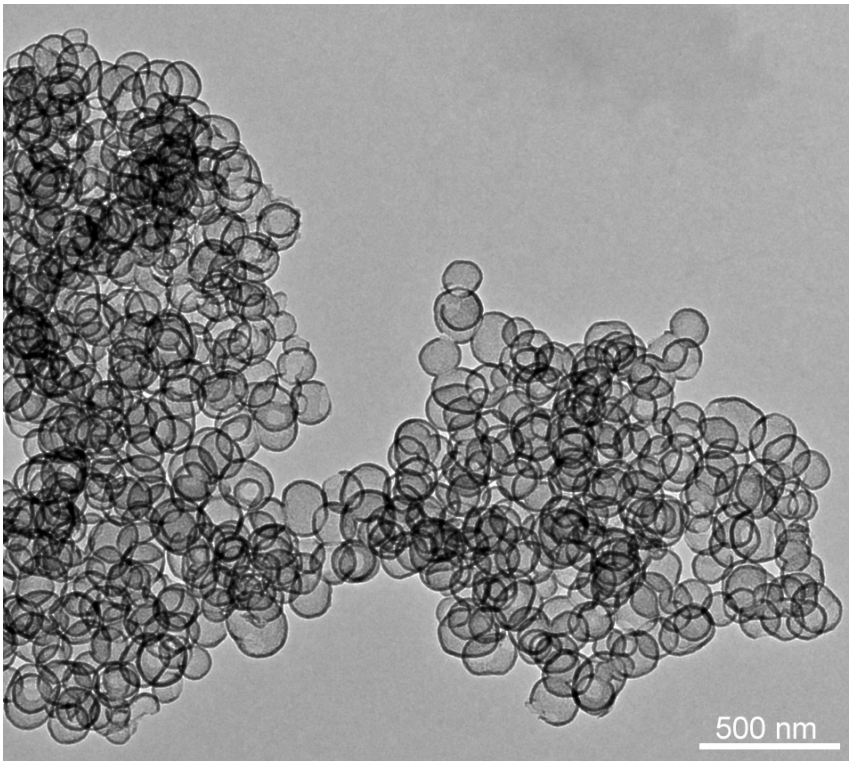


**Fig. S2** Low magnification TEM image of hollow nanospheres showing high yield of hollowing process.

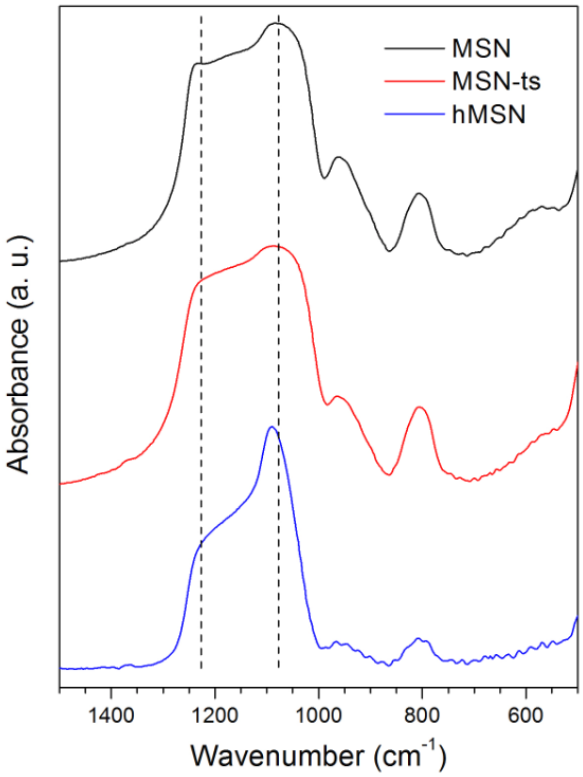


**Fig. S3** FTIR spectra of MSN, MSN-ts and h-MSN between 500 $cm^{-1}$ and 1500 $cm^{-1}$ showing the evaluation of the shoulder in the silica absorption band after each step.

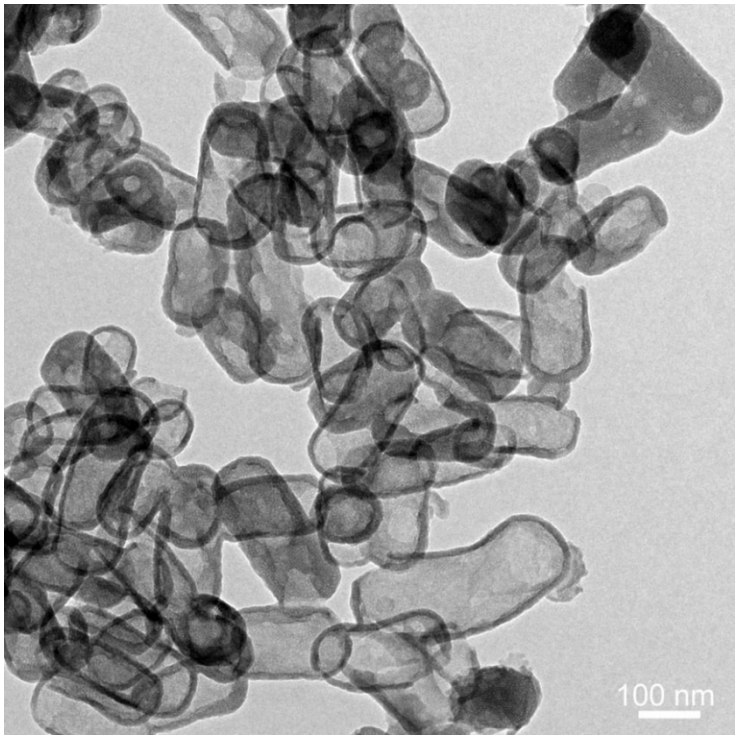


**Fig. S4** TEM images of the nanorods incubated in water at 65 °C for one day. Cores of the several particles remained completely or partially undissolved at these conditions.

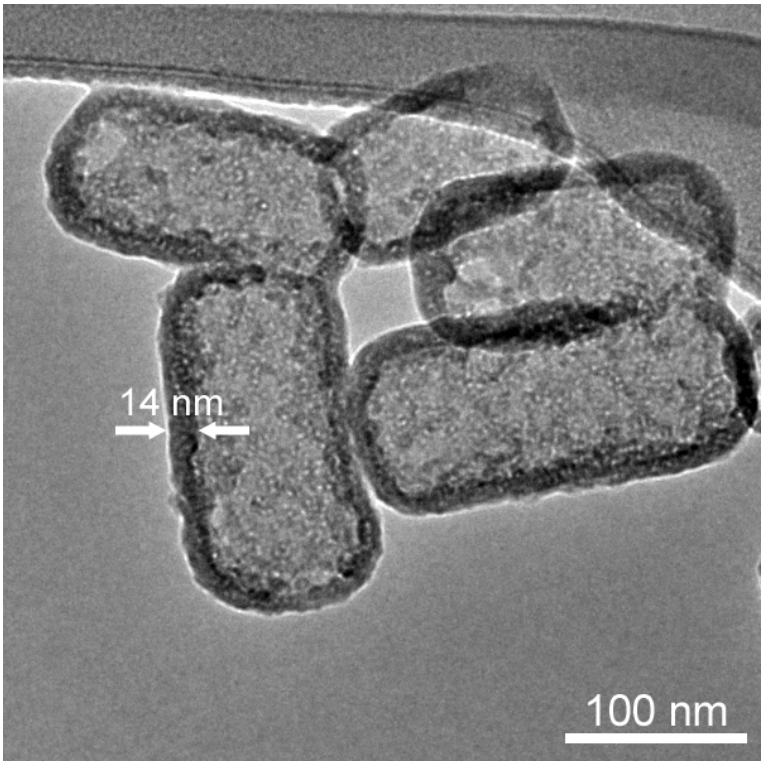


**Fig. S5** TEM images of the pre-calcined nanorods after core dissolution process. Mesoporous shells of particles with a thickness of around 14 nm are clearly observable.