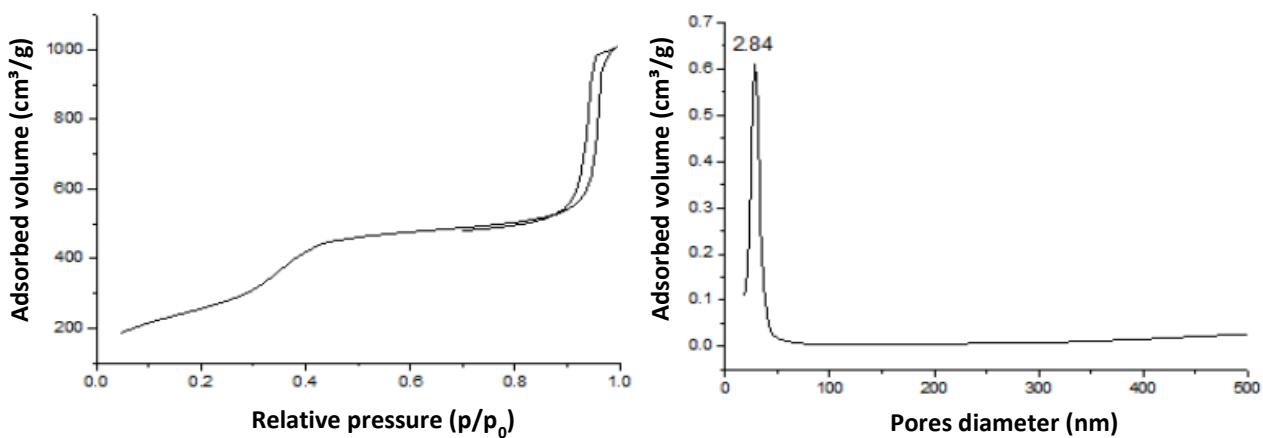
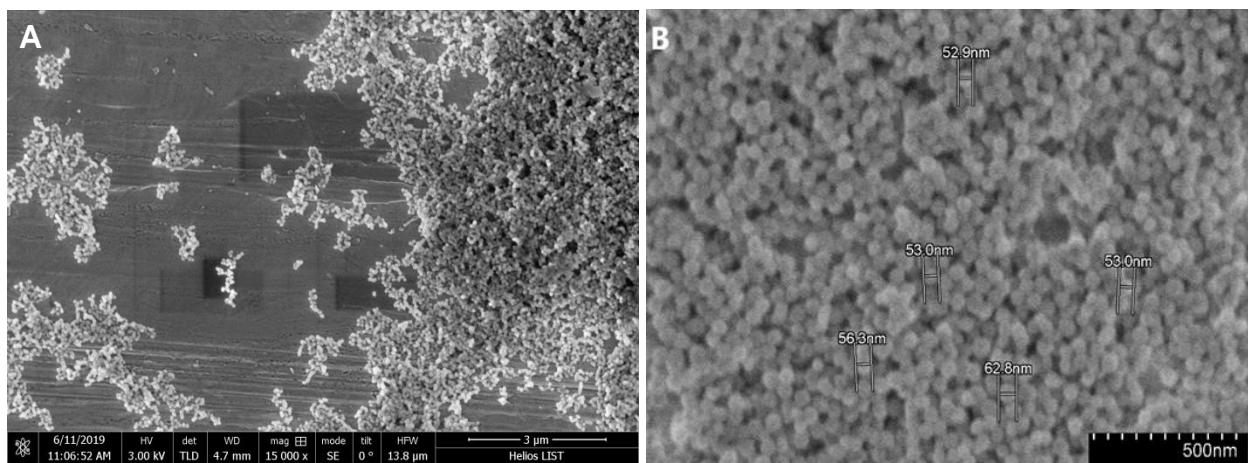


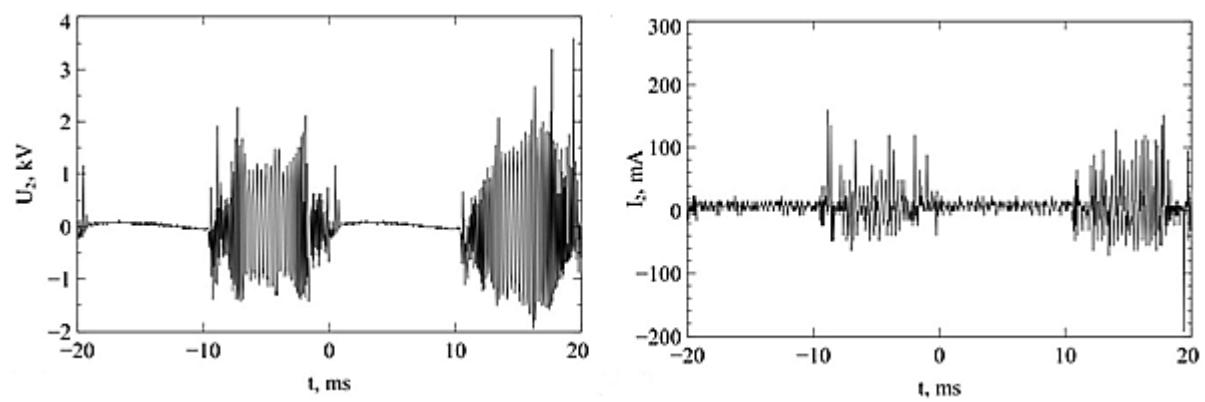
(b)



**SM1.** Nitrogen adsorption/desorption isotherms at 77 K of the (a) MCM-48 synthesized material with (inset) DFT pore size distributions obtained from  $\text{N}_2$  physisorption curve (adsorption) and (b) of the MSNPs material.



**SM 2.** SEM image of MSNPs showing a narrow size dispersion.



**SM 3.** GAD voltage and current characteristics (secondary side of transformer).