**Supporting Information**

# Highly Stable and Magnetically Recyclable Mesoporous Silica Spheres Embedded with FeCo/Graphitic Shell Nanocrystals for Supported Catalysts

Yan Li,[†] Yun Jin Kim,[†] A Young Kim,[‡] Kyujoon Lee,[§] Myung Hwa Jung,[§] Nam Hwi Hur,[†] Kang Hyun Park,[*,‡] Won Seok Seo[*,†]

*[†] Department of Chemistry, Inorganic and Bio-Materials Center of BK21, Sogang University, Seoul, 121-742, Korea, [‡]Department of Chemistry and Chemistry Institute for Functional Materials, Pusan National University, Busan 609-735, Korea, [§]Department of Physics, Sogang University, Seoul, 121-742, Korea.*

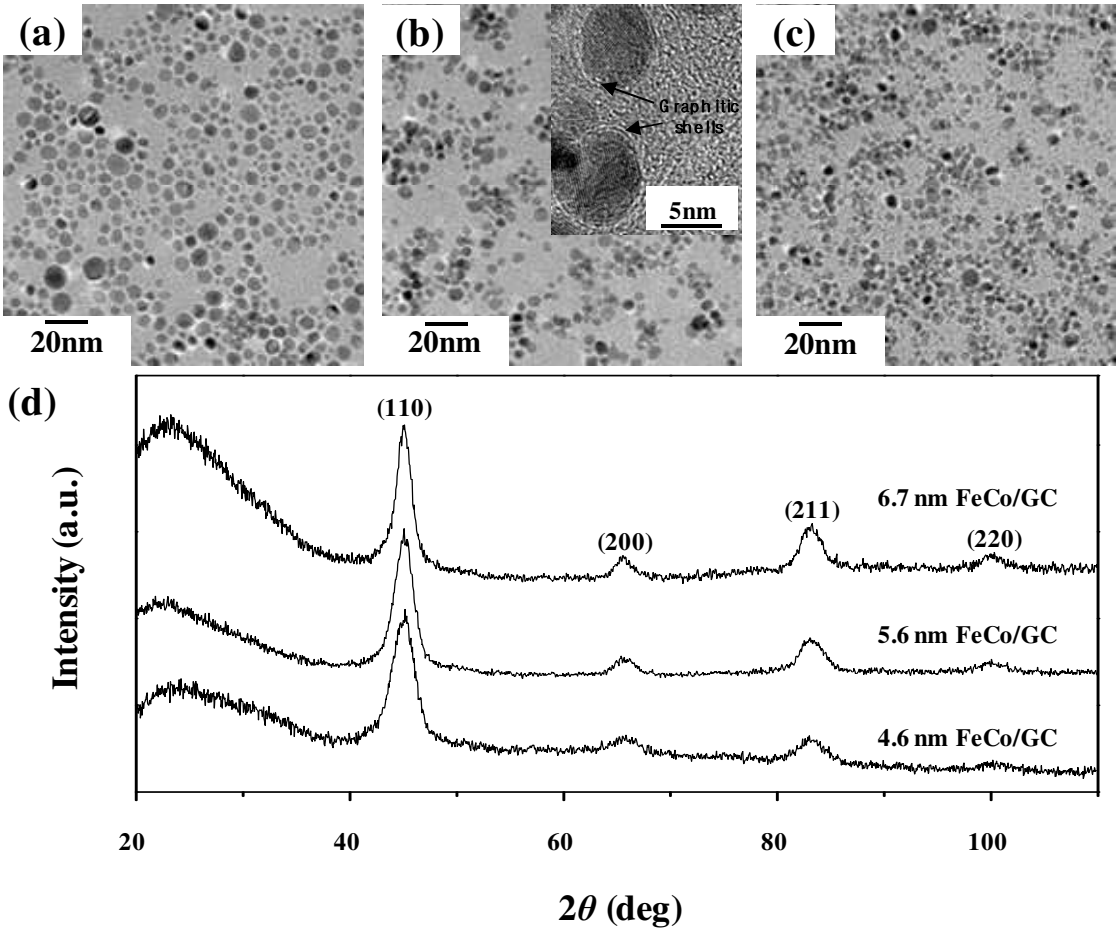


**Figure S1.** Structural characterization of FeCo/GC nanocrystals: TEM images of (a) 6.7 nm FeCo/GC, (b) 5.6 nm FeCo/GC, and (c) 4.6 nm FeCo/GC nanocrystals. (d) X-ray diffraction patterns.

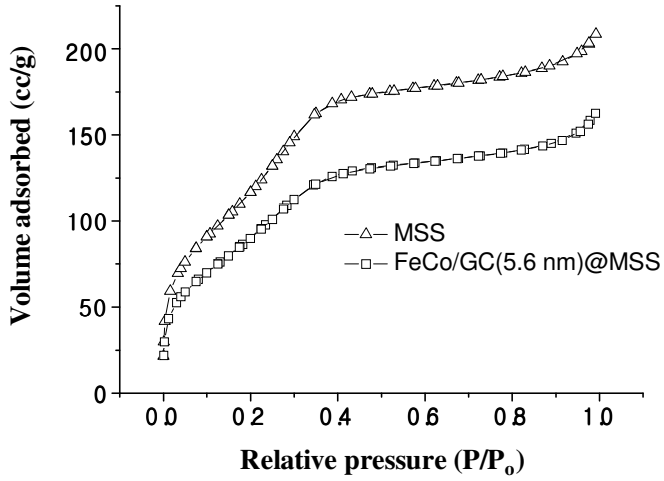


**Figure S2.** Nitrogen adsorption/desorption isotherms of MSS and FeCo/GC(5.6 nm)@MSS.

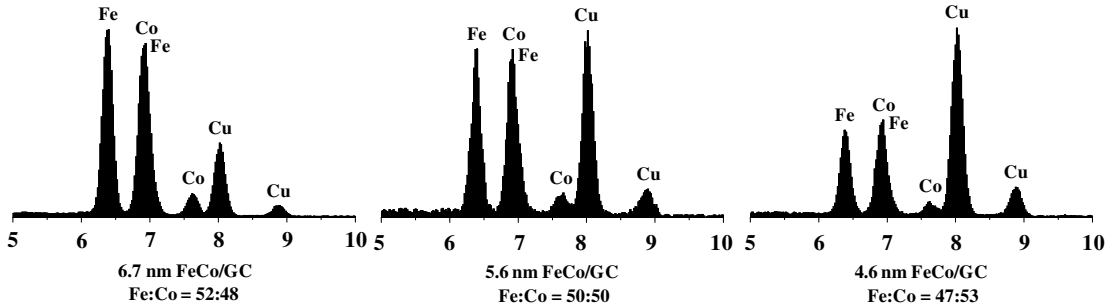


**Figure S3**. EDX spectra of FeCo/GC nanocrystals. They were used to determine the Fe:Co ratios of the nanocrystals. Cupper is from the TEM grids.

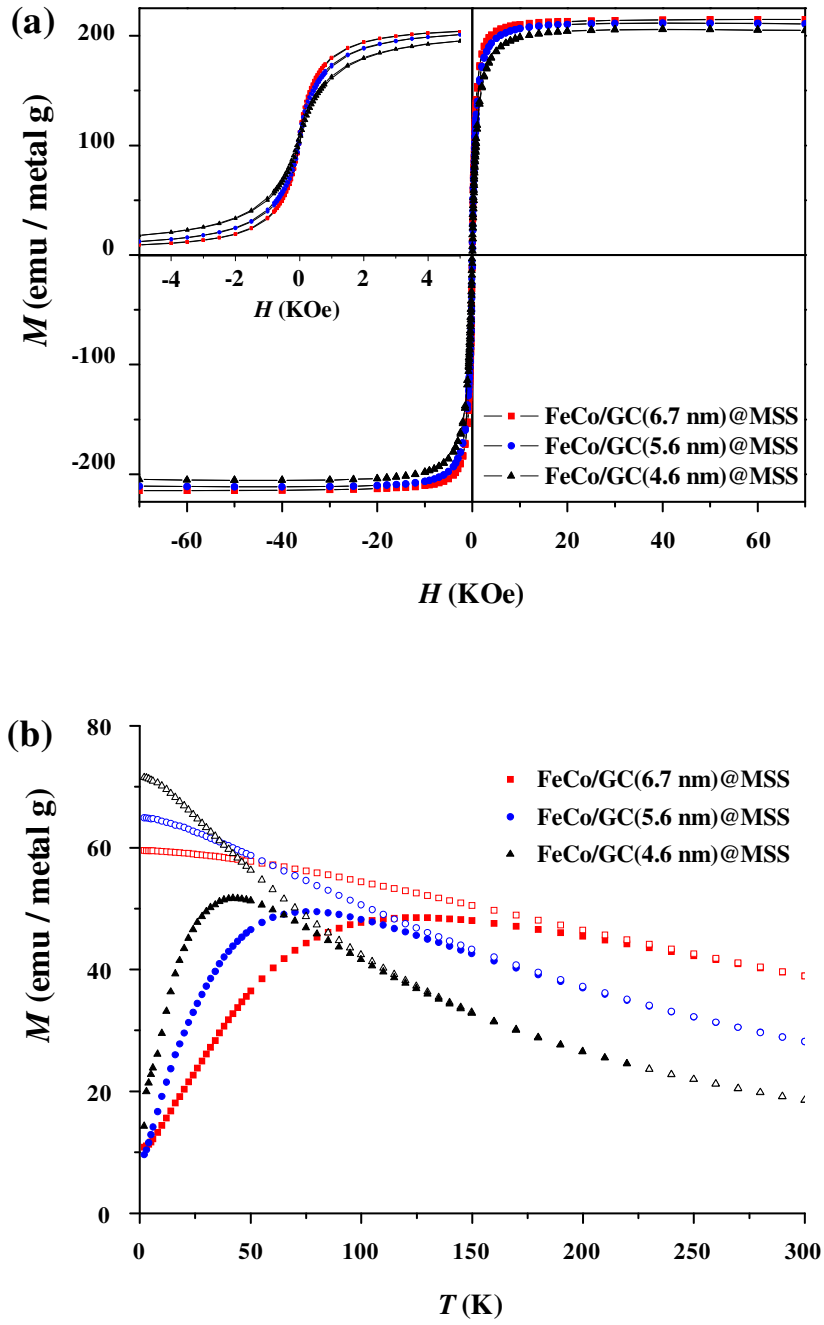


**Figure S4.** (a) Field-dependent magnetization curves at 300 K and (b) ZFC (filled symbols) and FC (open symbols) magnetization curves under an applied field of 100 Oe for FeCo/GC@MSS samples.

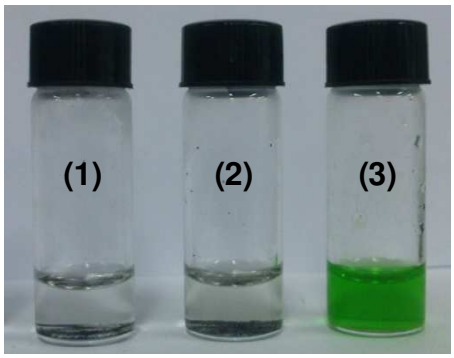


**Figure S5**. Photographs of 35% HCl solutions of (1, 2) FeCo/GC(5.6 nm)@MSS stored over a monitoring period of two months in air (1) and water (2) and (3) as-prepared FeCo(5.6 nm)@MSS.

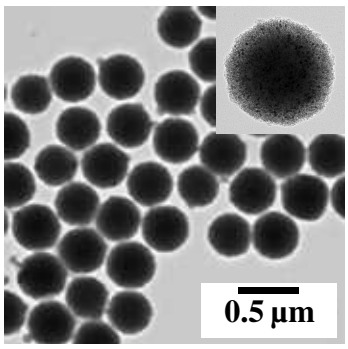


**Figure S6**. The TEM image of the PMA@FeCo/GC(5.6 nm)@MSS after the five consecutive catalytic cycles.