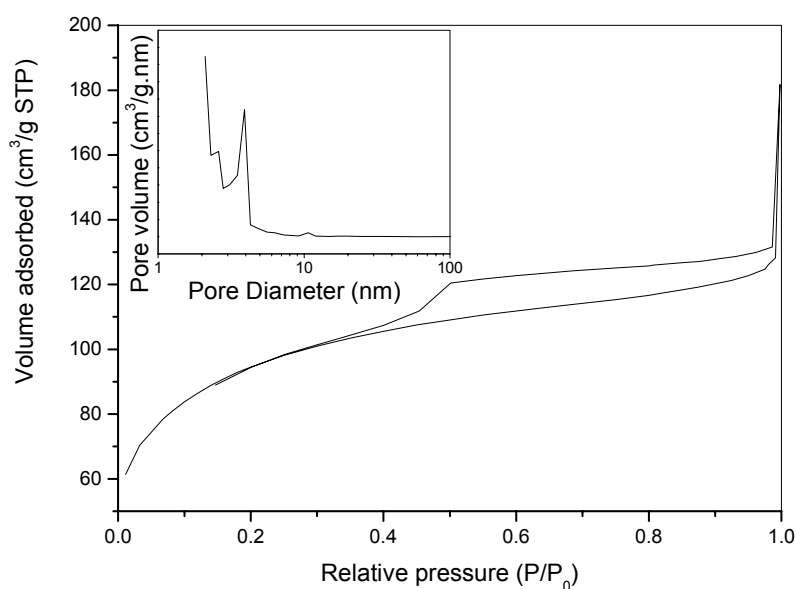


In a typical procedure, a piece of iron foil (Aldrich, purity: > 99.9%, thickness: 0.127 mm, 1.5 cm x 0.5 cm, used after rinsed with ethanol), 0.3 g (or 0.03 g) of iodine powder (Aldrich, purity: > 99.0%) and 15 mL of ethanol (or water) were placed in a 20-mL Teflon-lined autoclave. In some cases, 0.4 g of cetyltrimethylammonium bromide (CTAB, Sigma, purity: > 99.0%) or sodium bis(2-ethylhexyl) sulfosuccinate (NaAOT, Aldrich, purity: > 98%) was added. The autoclave was maintained at 160 °C or 180 °C for 12 h and then air cooled to room temperature. The iron foil was taken out of the solution and washed with ethanol, and finally air dried for characterization. Cobalt foil (Aldrich, purity: > 99.99%, thickness: 0.1 mm) was used to replace iron foil for the preparation of cobalt oxide.



Nitrogen adsorption-desorption isotherms of iron oxide film synthesized in ethanol. Inset: corresponding Barret-Joyner-Halenda (BJH) pore size distribution curve determined from the desorption branch.