

BET results

The porosity of all iron catalysts was characterized by the nitrogen adsorption technique and it is followed in Table S1. The BET surface areas (12.5–14.2 m²/g), BJH pore volumes (0.11–0.12 cm³/g), and pore diameters (31–33 nm) were similar among the catalysts.

Table S1. BET surface area and pore size distribution.

Catalyst description	S _{BET} (m ² /g)	Single point pore volume (cm ³ /g)	BJH pore volume (cm ³ /g)	Single point pore diameter (nm)	BJH pore diameter (nm)
100Fe	14.2±0.2	0.117±0.003	0.119±0.006	33±1.2	31±0.5
5K:100Fe	13.1±0.2	0.107±0.003	0.108±0.005	33±1.2	31±0.5
5Ba:100Fe	12.5±0.2	0.101±0.003	0.111±0.006	33±1.2	33±0.5