

Supplementary Materials for RSC Advances

Iron-based micropore-enriched silica catalyst: In-situ confining

Fe₂O₃ in mesopore and its improved catalytic properties

Saifu Long,^a Shijian Zhou,^{ab} Fu Yang,^a Kangchao Lu,^a Tao Xi,^a and Yan Kong^{*a}

^a State Key Laboratory of Materials-Oriented Chemical Engineering, Nanjing Tech University, Nanjing

210009, China. ^b Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM)

Nanjing Tech University, Nanjing 210009, Jiangsu, China.

*E-mail: kongy36@njtech.edu.cn (Yan Kong).

Supplementary data

Catalytic stability

Table S1 Recycling test for sample 0.15Fe/AMS and 0.15Fe/AMS(p)^a

Catalysts	Recycle	Fe/Si ^b (wt%)	Product distribution		
			X(Ph) ^c / %	S(CAT) ^d / %	S(HQ) ^e / %
0.15Fe/AMS	1	2.53	44.3	52.2	28.4
	2	2.25	40.1	51.4	27.9
	3	2.08	38.7	50.1	27.7
	4	1.95	37.9	50.9	27.8
	5	1.94	37.7	50.7	27.9
0.15Fe/AMS(p)	1	2.50	36.7	31.4	19.6
	2	1.41	25.1	33.2	18.4
	3	0.98	15.5	34.6	19.4
	4	0.56	12.1	34.1	18.8
	5	0.54	12.0	34.4	18.6

^a Reaction conditions: molar ratio, phenol/H₂O₂ ≈ 2:1, time, 2 h, reaction temperature, room temperature. ^b Fe/Si mass ratios are determined by ICP-AES. ^c The conversion of phenol. ^d The selectivity of catechol. ^e The selectivity of hydroquinone.