

SUPPLEMENTARY INFORMATION

Solvent-free selective oxidation of toluene over metal doped MCM-22

Maaz Nawab, Sunita Barot and Rajib Bandyopadhyay*

Department of Science, School of Technology, Pandit Deendayal Petroleum University, Raisan, Gandhinagar, Gujarat 382007, India

E-mail: rajib.bandyopadhyay@sot.pdpu.ac.in

*For Correspondence

List of Entries

Entry	Caption
Table S1	Catalytic performance over Cu-MCM-22 catalyst in oxidation of toluene
Figure S1	XRD of reused catalyst

Table S1: Catalytic performance over Cu-MCM-22 catalyst in oxidation of toluene

Entry	Metal Loading (%)	Amount of catalyst (g)	Temperature (°C)	Toluene/H ₂ O ₂ ratio (vol./vol.)	Toluene/H ₂ O ₂ molar ratio	Conversion of Toluene (%)	Selectivity (%)		
							Benzaldehyde	Benzoic acid	Others
1	Blank	-	90	1:3	1:3.12	0.3	0	0	100
2	0	0.2	90	1:3	1:3.12	0.6	33.3	50	16.7
3	2	0.2	90	1:3	1:3.12	3	53.3	43.3	3.4
4	3	0.2	90	1:3	1:3.12	3.5	65.7	31.4	2.9
5*	4	0.2	90	1:3	1:3.12	0.15	78.6	21.4	0
6	4	0.2	90	1:3	1:3.12	9	71.1	21.1	7.8
7	5	0.2	90	1:3	1:3.12	9.3	46.2	37.6	16.2
8	4	0.1	90	1:3	1:3.12	2.5	52.0	44.0	4.0
9	4	0.3	90	1:3	1:3.12	9.3	23.2	54.8	20.7
10	4	0.4	90	1:3	1:3.12	9.9	16.9	59.1	22.5
11	4	0.2	90	1:1	1:1.04	2.0	55.0	45.0	0
12	4	0.2	90	1:5	1:5.20	9.3	47.6	40.4	11.9
13	4	0.2	90	1:7	1:7.28	9.8	52.0	29.6	18.4
14	4	0.2	70	1:3	1:3.12	1.3	16.6	77.8	0
15	4	0.2	110	1:3	1:3.12	9.2	47.1	31.0	21.8

Note: * 4% Fe-MCM-22 used as catalyst

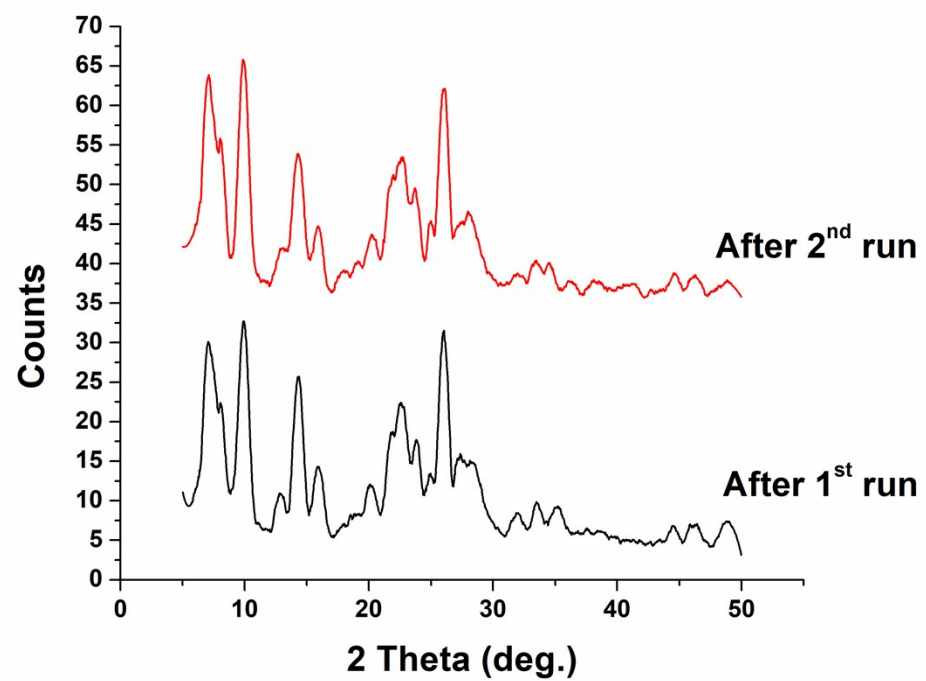


Figure S1. XRD patterns of reused catalyst