

Fig. S1:  $^{31}\text{P}$  MAS NMR spectra of representative samples

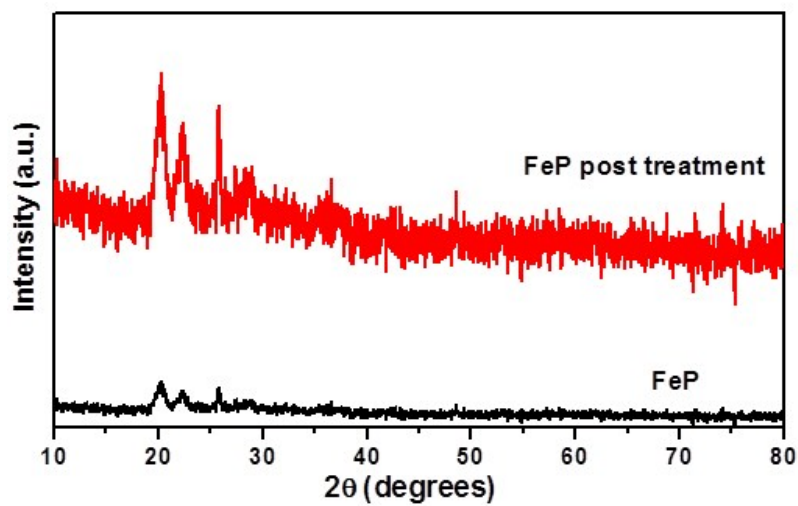


Fig. S2: XRD patterns of FeP and FeP-post treatment samples

**Table S1:** Chemical composition of samples

Catalyst	Elemental (ICP-MS) analysis (molar %)		
	Fe	P	Mo
FeP	36.9	20.4	0.0
1Mo-FeP	36.7	20.3	0.5
2Mo-FeP	36.4	20.4	1.5
3Mo-FeP	36.2	20.2	2.3
4Mo-FeP	36.1	20.1	3.5
5Mo-FeP	35.6	20.0	4.4

**Table S2:** Activation energies ( $E_a$ ) and TOF for the catalytic reaction conducted over different catalysts

Catalyst	$E_a$ (kJ mol <sup>-1</sup> )	TOF X 10 <sup>2</sup> (h <sup>-1</sup> )
FeP	78.6	9.5
1Mo-FeP	69.3	15.3
2Mo-FeP	66.6	38.6
3Mo-FeP	62.3	43.5
4Mo-FeP	59.8	63.0
5Mo-FeP	50.5	93.3
<b>FeMoP</b>	<b>64.4</b>	<b>31.2</b>
Fe <sub>2</sub> O <sub>3</sub>	71.2	30.6
MoO <sub>3</sub>	74.6	3.2

Benzyl chloride: benzene stoichiometric ratio = 1:15 and 50 mg of catalyst

**Table S3:** Comparison of Mo-FePO<sub>4</sub> catalyst with other reported iron based catalysts

<b>Authors</b>	<b>Catalyst</b>	<b>Reaction conditions</b>	<b>Con. of benzyl chloride (%)</b>	<b>Remarks</b>
Arafat et al.	Fe <sub>2</sub> O <sub>3</sub> /MCM-41	T=80°C, Time=10 min.	95	Leaching of active phase
Sun et al.	Fe <sub>2</sub> O <sub>3</sub> /SBA-15	T=60°C, Time=20 min.	100	Role support is not clear
Leng et al.	Fe <sub>2</sub> O <sub>3</sub> /H-modernite	T=70°C, Time=30 min.	100	Poor stability and weak acidity
Shinde & Sawant	NiFe <sub>2</sub> O <sub>4</sub>	T=70°C, Time=70 min.	100	Low surface area and pore size
Koyande et al.	Fe <sub>2</sub> O <sub>3</sub> /sulfated ZrO <sub>2</sub>	T=80°C, Time=30 min.	80	Usage of strong mineral acid
Choudary & Jana	Fe <sub>2</sub> O <sub>3</sub> /H-ZSM-5	T=80°C, Time=8.5 min.	90	A significant reaction induction period was observed.
Bachari et al	Fe-HMS	T=75°C, Time=245 min.	50	Low activity, high selectivity
Ali et al	Fe <sub>2</sub> O <sub>3</sub> /ZrO <sub>2</sub> (nano)	T=75°C, Time=480 min.	91	Stable activity and reusability
Present work	MoO <sub>x</sub> -FePO <sub>4</sub>	T=80°C, Time=45 min.	100	Stable activity and reusability