Supplementary material

[1SM] Castelo Bandane Vilanculo, Márcio José da Silva, Sukarno Olavo Ferreira, Milena Galdino Teixeira, *A rare oxidation of camphene to acid and aldehyde in the presence of Lacunar Keggin heteropoly salts*, Molecular Catalysis 478 (2019) 110589-110595

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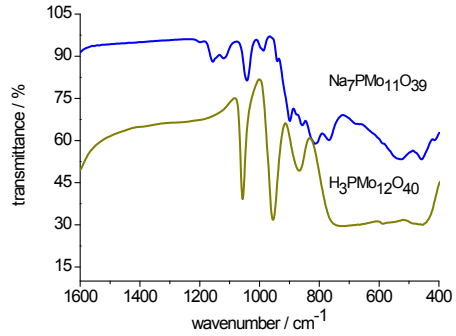

Figure SM1. FT-IR spectra of phosphomolybdic acid and its lacunar sodium salt

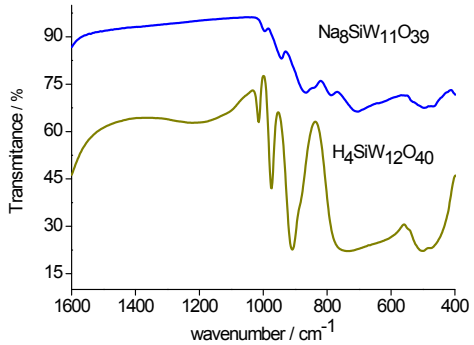

Figure SM2. FT-IR spectra of silicotungstic acid and its lacunar sodium salt

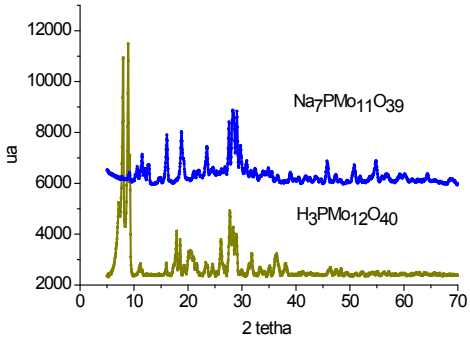

Figure SM3. Powdered XRD patterns of $Na_7PMo_{11}O_{39}$ lacunar salt and parent $H_3PMo_{12}O_{40}$

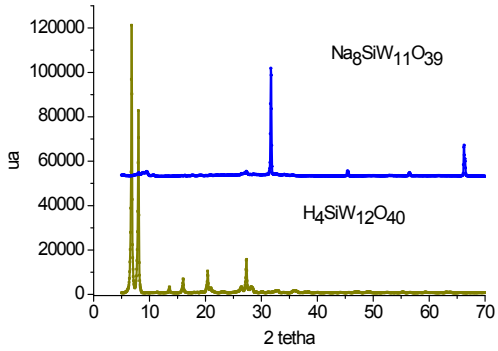

Figure SM4. Powdered XRD patterns of $Na_8SiW_{11}O_{39}$ lacunar salt and parent $H_4SiW_{12}O_{40}$

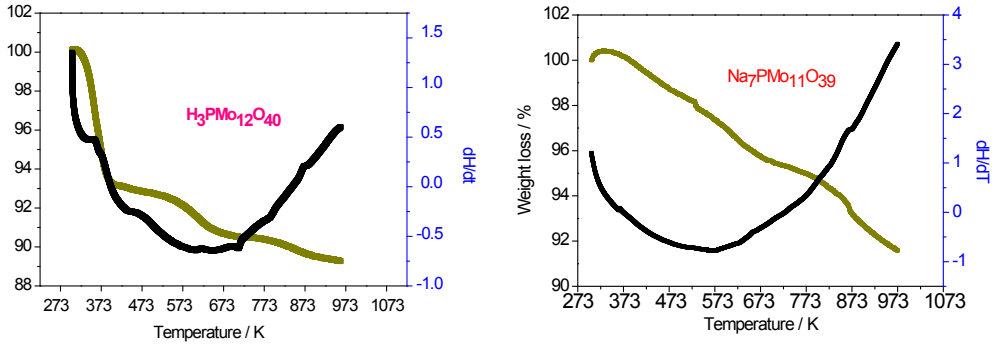

Figure SM5. TG/DSC curves: precursor $H_3PMo_{12}O_{40}$ (a) and $Na_7PMo_{11}O_{39}$ lacunar salt (b)

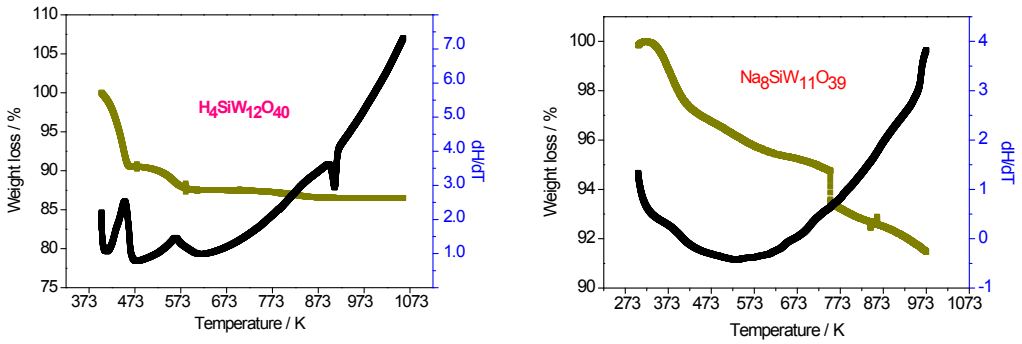

Figure SM6. TG/DSC curves: precursor $H_4SiW_{12}O_{40}$ (a) and $Na_8SiW_{11}O_{39}$ lacunar salt (b)

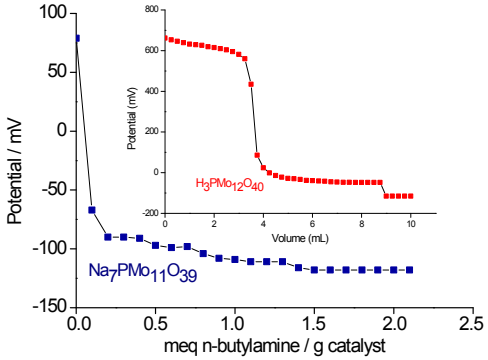

Figure SM7. Potentiometric titration curves with *n*-butylamine of $H_3PMo_{12}O_{40}$ and $Na_7PMo_{11}O_{39}$ salt

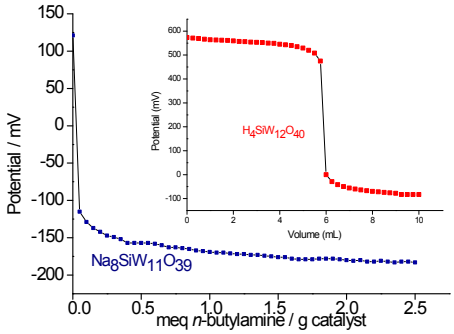

Figure SM8. Potentiometric titration curves with *n*-butylamine of $H_4SiW_{12}O_{40}$ and $Na_8SiW_{11}O_{39}$ salt

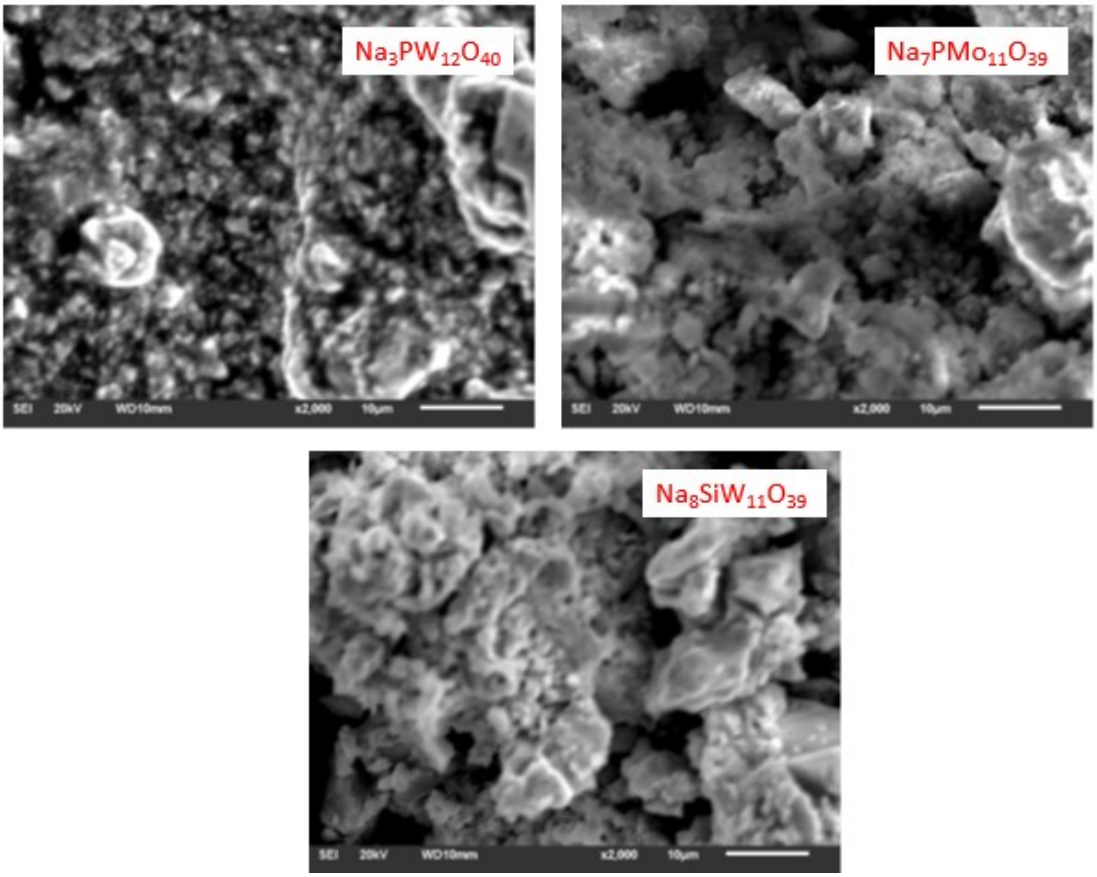

Figure SM9: Scanning electronic microscopy images of sodium salts; $Na_3PW_{12}O_{40}$, $Na_7PMo_{11}O_{39}$ and $Na_8SiW_{11}O_{39}$

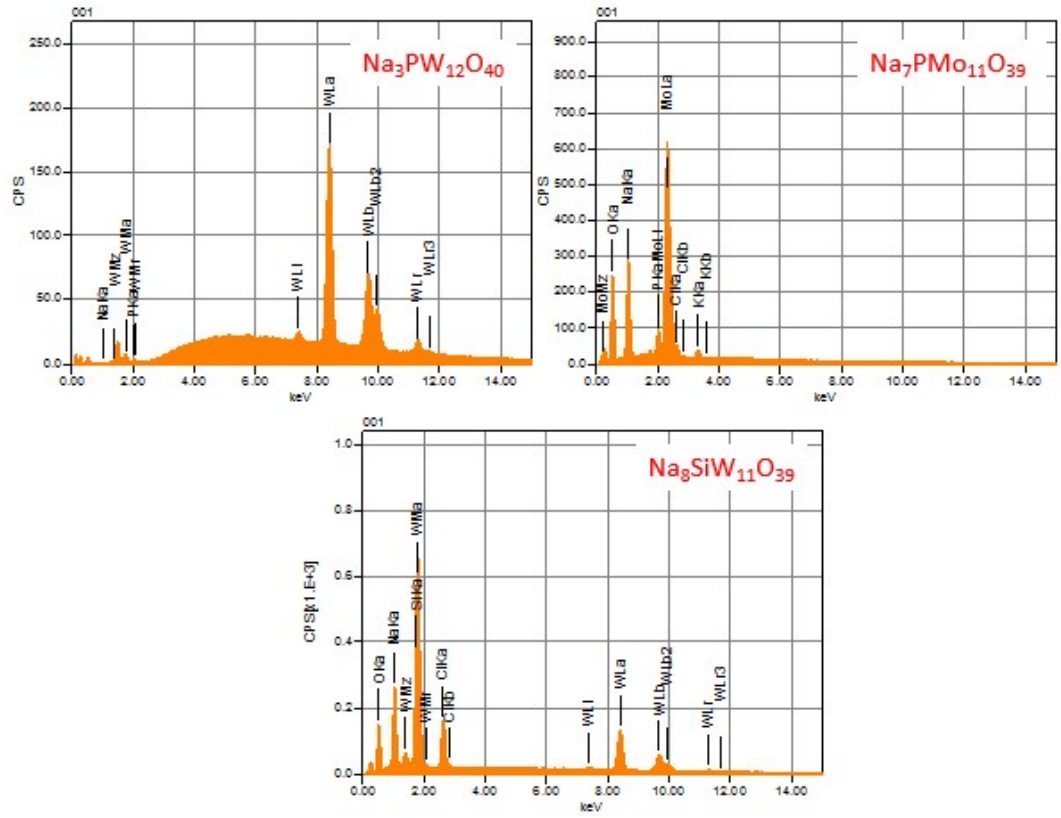

Figure SM10: EDS data of $Na_3PW_{12}O_{40}$, $Na_7PMo_{11}O_{39}$ and $Na_8SiW_{11}O_{39}$

Table SM1. Blank-reactions performed in the absence of the catalyst[a]

Exp	Temperature (K)	Conversion (%)	Selectivity (%)			
			Aldehyde	Epoxide	Diepoxide	Alkyl peroxides
1	298	6	0	11	0	91
2	308	7	0	10	0	90
3	318	15	0	11	0	89
4	328	18	0	11	0	89
5	338	24	0	10	0	90

[a]Reaction conditions: nerol (2.75 mmol); H_2O_2 (5.50 mmol); time (4 h); CH_3CN (10 mL)