Heteropoly acid catalysts for the synthesis of fragrance compounds from bio-renewables: acetylation of nopol and terpenic alcohols

Vinicius V. Costa,[a] Kelly A. da Silva Rocha,[b] Luiz C. A. Oliveira,[a] Elena F. Kozhevnikova,[c] Ivan V. Kozhevnikov[c] and Elena V. Gusevskaya*[a]

[a] Departamento de Química, Universidade Federal de Minas Gerais, 31270-901, Belo Horizonte, MG, Brazil
Fax: (+)55 31 34095700, E-mail: elena@ufmg.br

[b] Departamento de Química, Universidade Federal de Ouro Preto, 35400-000, Ouro Preto, MG, Brazil

[c] Department of Chemistry, University of Liverpool, Liverpool L69 7ZD, UK

Supplementary Information

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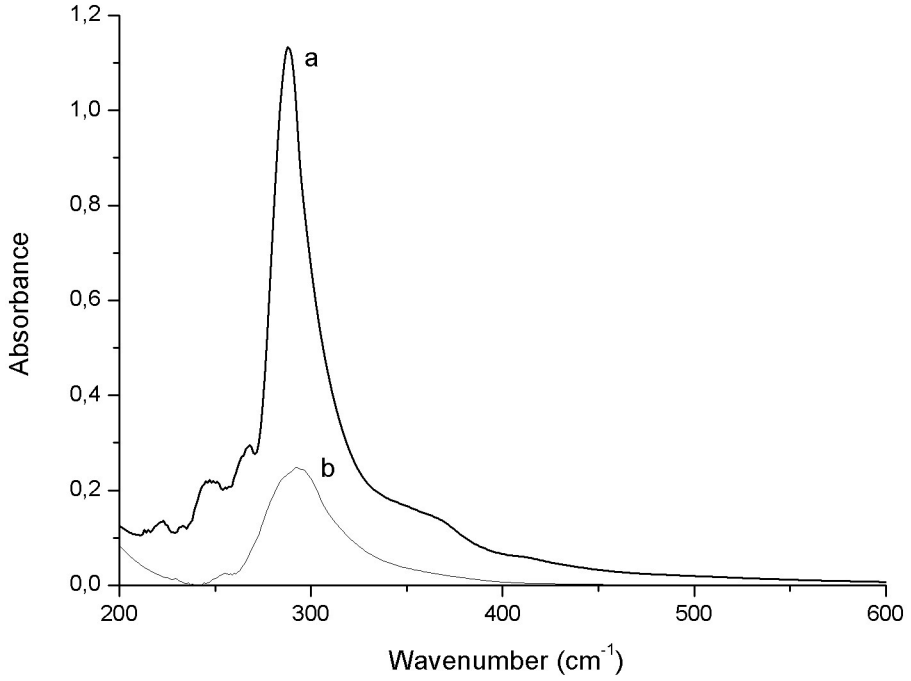

Fig. S1. UV spectra of the (a) reference solution of $H_3PW_{12}O_{40}$ in acetic anhydride (0,09 mM) and (b) supernatant obtained by the centrifugation of CsPW from the CsPW (15 mg)/Ac_2O (5mL) mixture after 1 h stirring at room temperature (similar to the mixture used in run 11, Table 1).

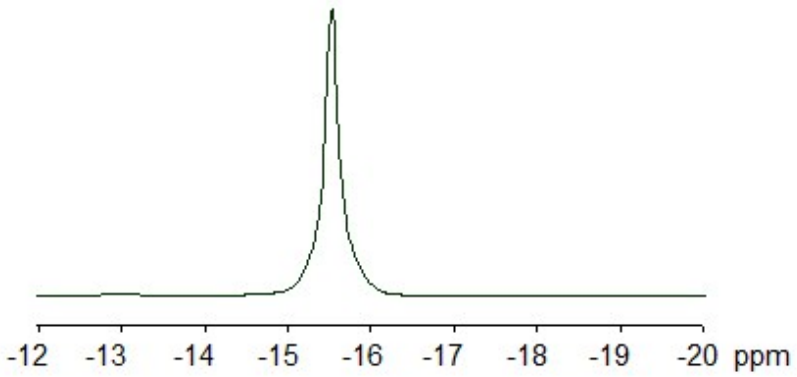

Fig. S2. ^{31}P MAS NMR for bulk $H_3PW_{12}O_{40}$.

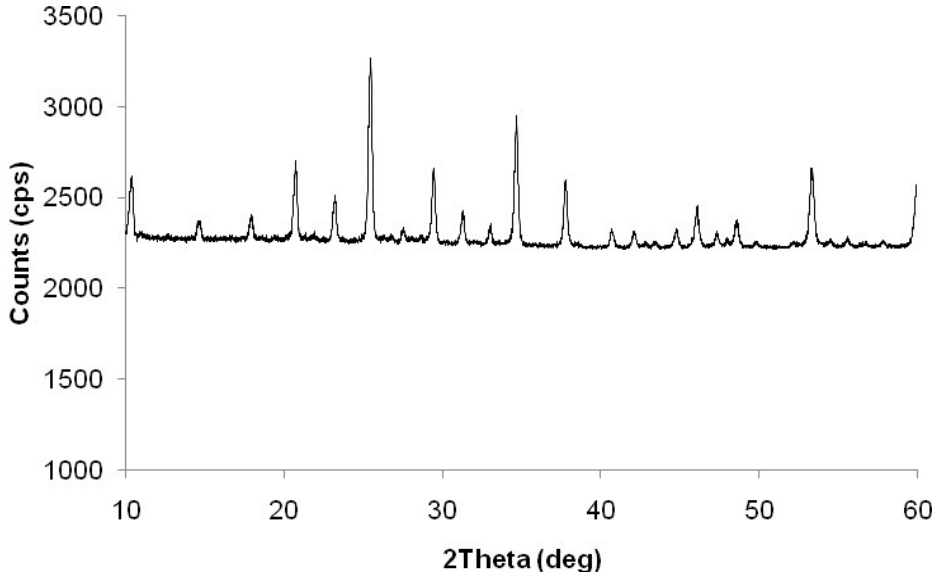

Fig. S3. XRD for bulk $H_3PW_{12}O_{40}$.

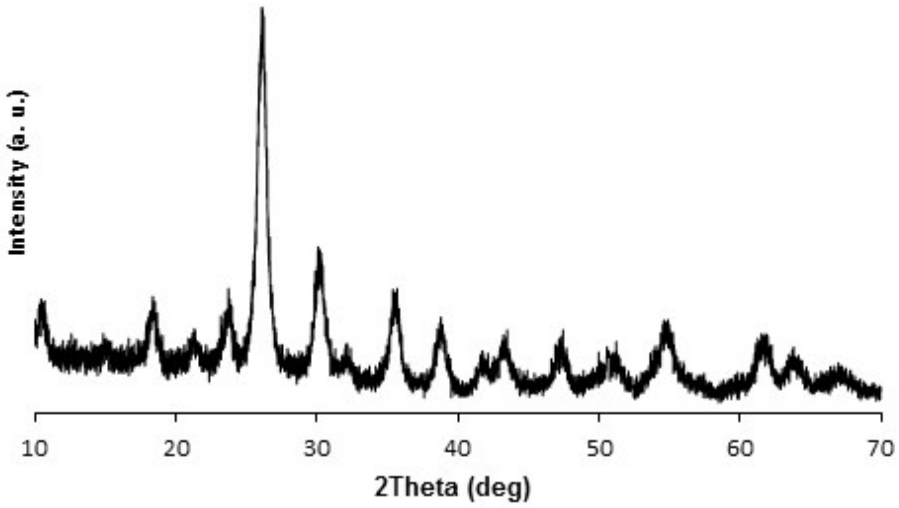

Fig. S4. XRD for bulk $Cs_{2.5}H_{0.5}PW_{12}O_{40}$.

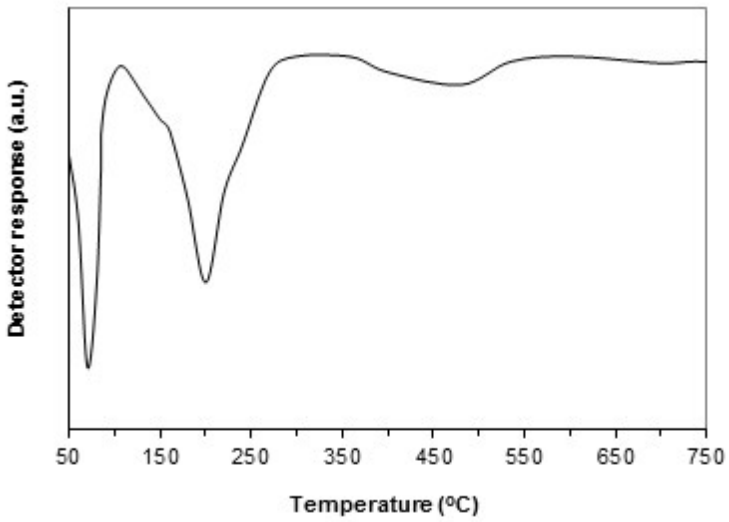

Fig. S5. TGA for $H_3PW_{12}O_{40}$ hydrate showing the loss of crystallization water (around 100 °C) followed by the loss of six water molecules in $H_3PW_{12}O_{40}$ hexahydrate (around 200 °C) and 1.5 H_2Omolecules of the constitutional water (around 450 °C).