

Article

Organically Functionalized Porous Aluminum Phosphonate for Efficient Synthesis of 5-Hydroxymethylfurfural from Carbohydrates

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Supplementary Information

Unit cell parameters and indexing of the peaks for Ph-AlPO-1/2.

$a = 17.61448 \text{ \AA}$, $b = 6.79795 \text{ \AA}$, $c = 4.88147 \text{ \AA}$

$\alpha = 106.690$, $\beta = 94.204$, $\gamma = 80.948$ degree

Unit cell volume = 552.7, symmetry = P 1

Table S1. Indexing of the powder diffraction patterns of Ph-AlPO-1/2.

h	k	l	2θ	d (nm)
1	0	0	5.07818	1.73842
0	1	0	13.72839	0.644497
3	1	0	19.06143	0.465211
1	0	1	19.79974	0.448028
2	1	-1	21.37135	0.415422
2	0	1	21.83809	0.406648
3	1	-1	23.72292	0.374748
5	0	0	25.59488	0.347748
4	1	-1	26.88511	0.331345
2	-1	-1	28.94939	0.308171
5	0	1	32.51976	0.275105
5	-1	-1	38.17190	0.235570
1	-3	0	43.12234	0.209603

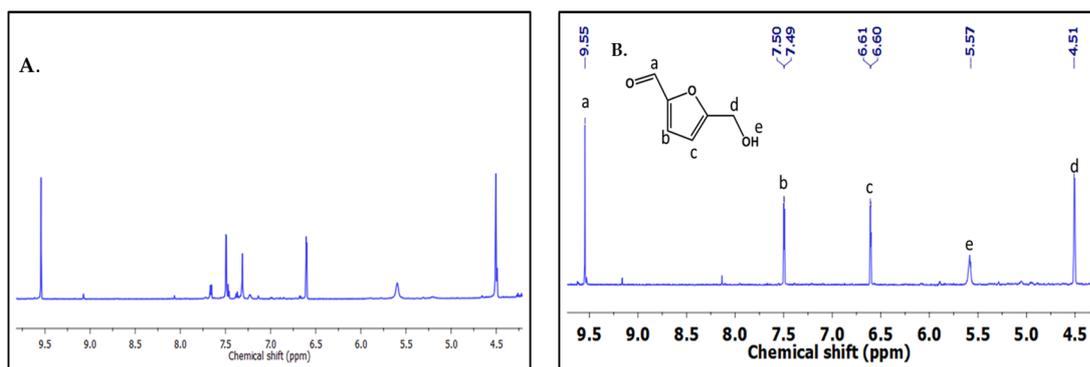


Figure S1: $^1\text{H-NMR}$ Spectra of (A) crude 5-HMF and (B) 5-HMF after solvent extraction.

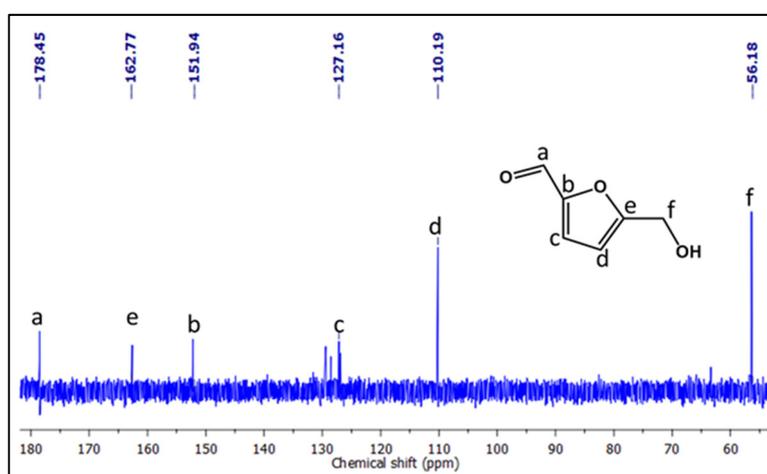


Figure S2: $^{13}\text{C-NMR}$ Spectra of the 5-HMF Solution after solvent extraction.

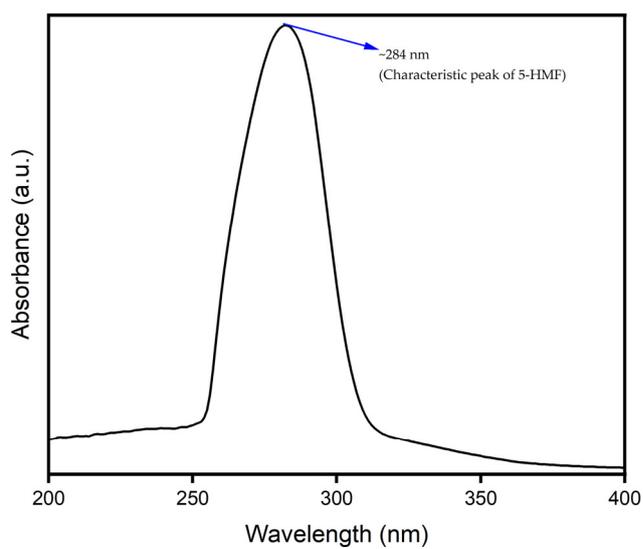


Figure S3: UV-Visible spectra of 5-HMF (characteristic peak at ~284 nm).

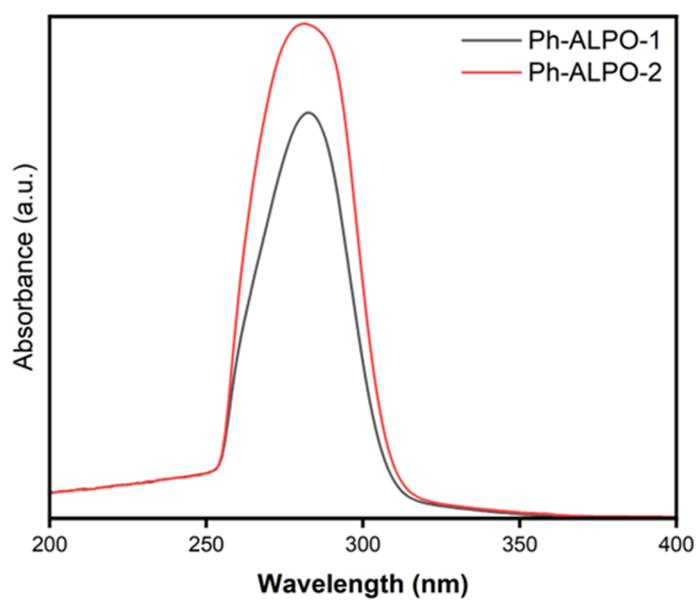


Figure S4: Comparative study of catalytic activity of Ph-ALPO-1 and Ph-ALPO-2 through the UV-Visible spectrophotometer.