

## 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.

| <b>h</b> | <b>k</b> | <b>l</b> | <b>2<math>\theta</math></b> | <b>d (nm)</b> |
|----------|----------|----------|-----------------------------|---------------|
| 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      |

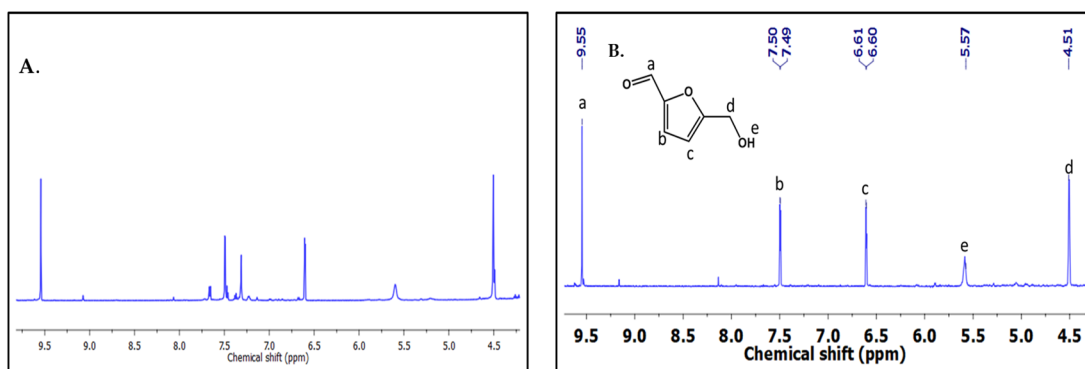


Figure S1:  $^1\text{H}$ -NMR Spectra of (A) crude 5-HMF and (B) 5-HMF after solvent extraction.

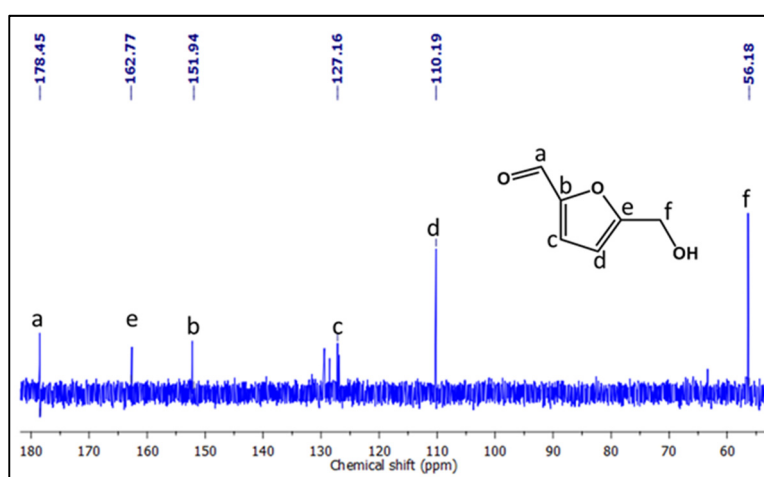


Figure S2:  $^{13}\text{C}$ -NMR Spectra of the 5-HMF Solution after solvent extraction.

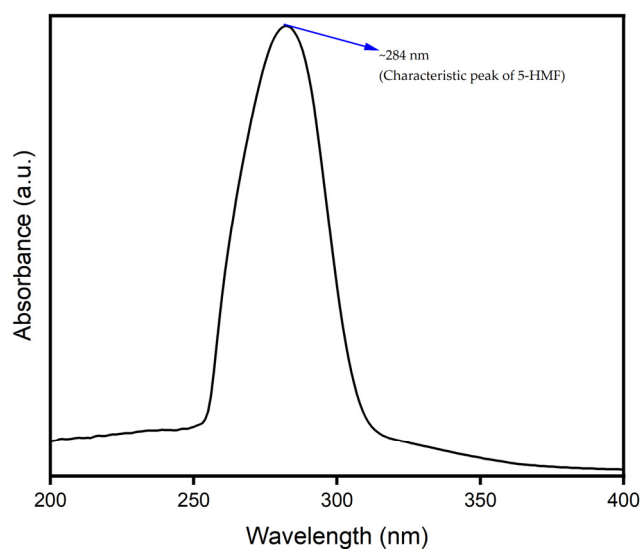
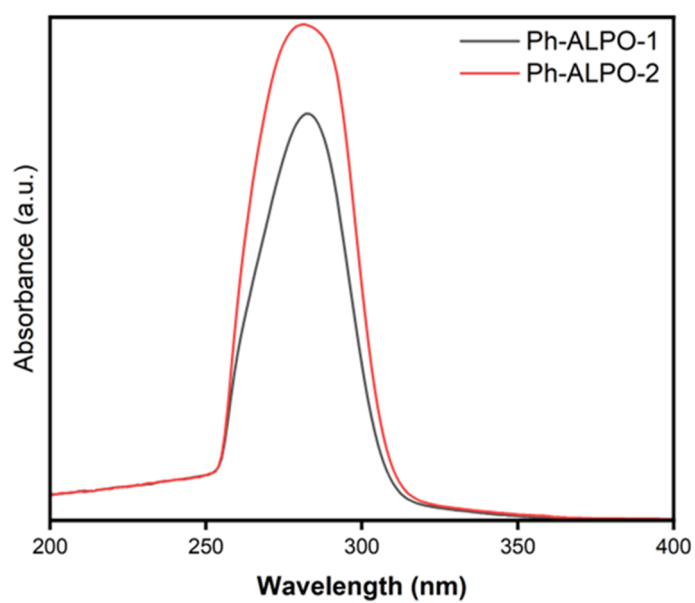


Figure S3: UV-Visible spectra of 5-HMF (characteristic peak at ~284 nm).



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