

Electronic Supplementary Information

For

**Three-Component 1D and 2D Metal Phosphonates: Structural
Variability, Topological Analysis and Catalytic Hydrocarboxylation of
Alkanes**

By

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1. TGA traces for all compounds

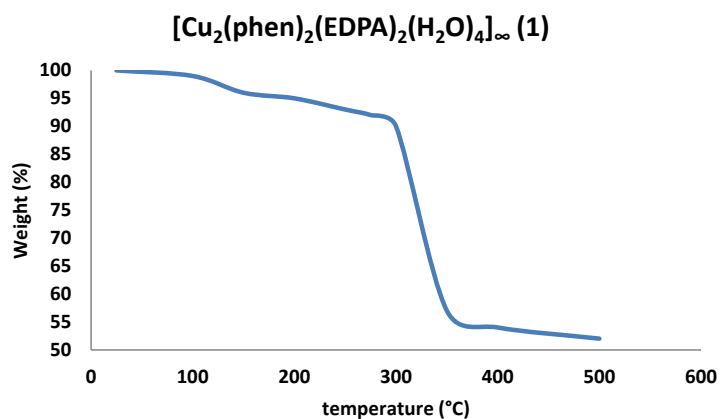


Figure S-1. TGA trace for $[\text{Cu}_2(\text{phen})_2(\text{EDPA})_2(\text{H}_2\text{O})_4]_\infty$ (**1**).

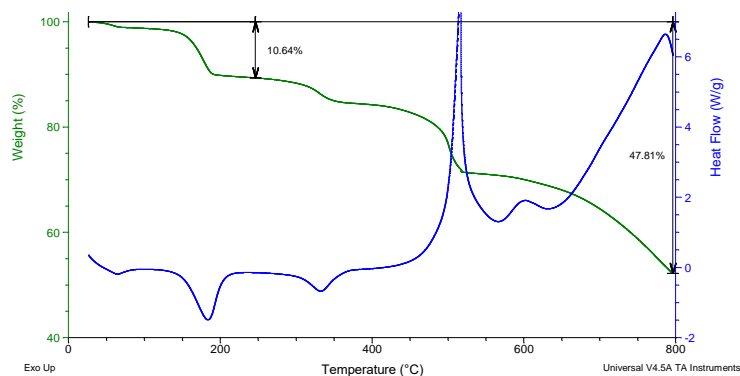


Figure S-2. TGA trace for $[\text{Co}(\text{phen})(\text{EDPA})(\text{H}_2\text{O})_2]_\infty$ (**1a**).

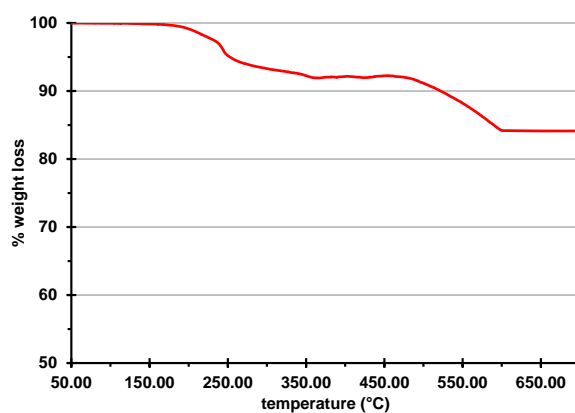


Figure S-3. TGA trace for $\{[\text{Cu}(\text{phen})(\text{MDPA})] \cdot \text{H}_2\text{O}\}_\infty$ (**2**).

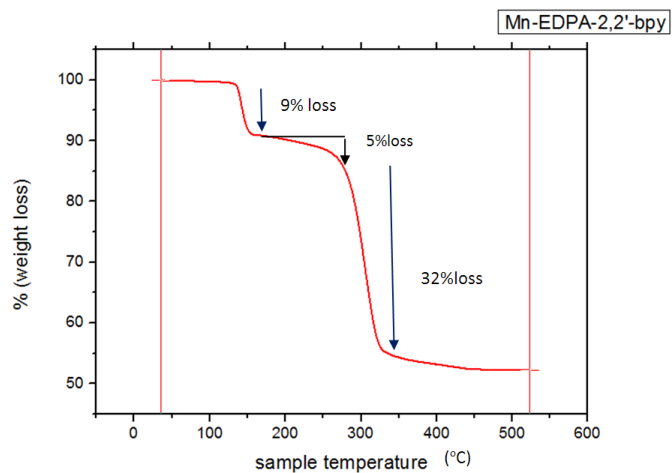


Figure S-4. TGA trace for $[\text{Mn}(\text{bpy})(\text{EDPA})(\text{H}_2\text{O})_2]_\infty$ (3).

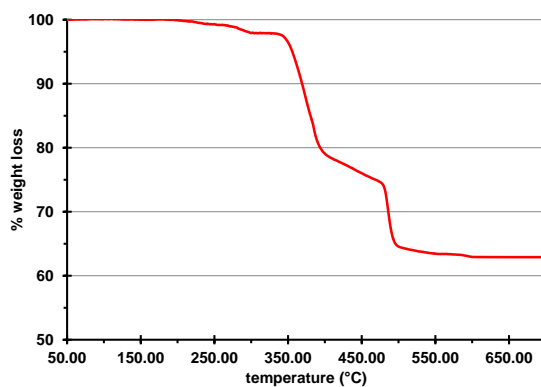


Figure S-5. TGA trace for $[\text{Zn}(\text{bpy})(\text{EDPA})]_\infty$ (4).

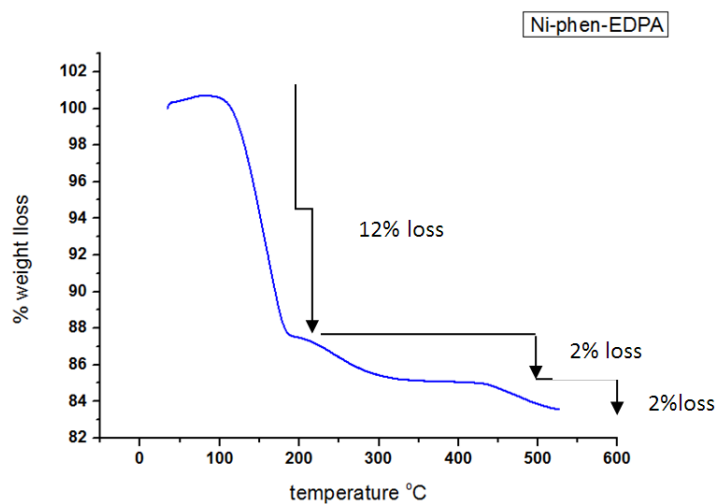


Figure S-6. TGA trace for $[\text{Ni}(\text{phen})(\text{H}_2\text{O})_4](\text{EDPA})$ (5).

2. Calculated and measured powder XRD patterns for all compounds.

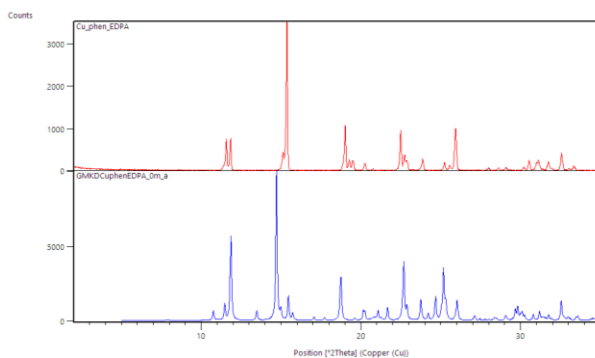


Figure S-X. Calculated (blue, lower) and measured (red, upper) powder XRD powder patterns for $[\text{Cu}_2(\text{phen})_2(\text{EDPA})_2(\text{H}_2\text{O})_4]_\infty$ (**1**).

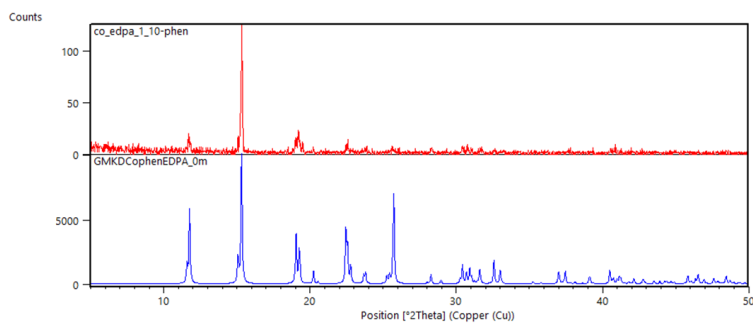


Figure S-X. Calculated (blue, lower) and measured (red, upper) powder XRD powder patterns for $[\text{Co}(\text{phen})(\text{EDPA})(\text{H}_2\text{O})_2]_\infty$ (**1a**).

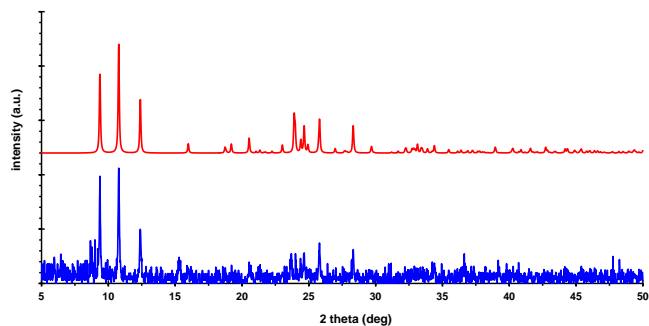


Figure S-X. Calculated (red, upper) and measured (blue, lower) powder XRD powder patterns for $\{[\text{Cu}(\text{phen})(\text{MDPA})] \cdot \text{H}_2\text{O}\}_\infty$ (**2**)

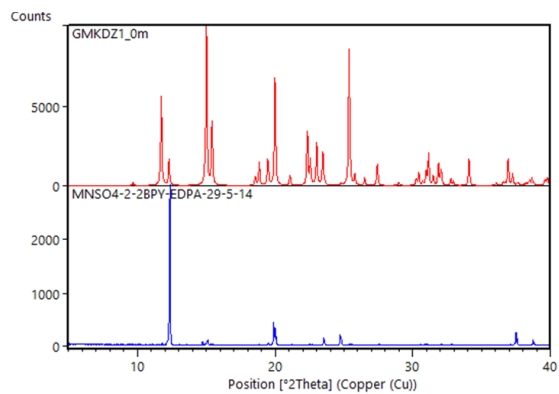


Figure S-X. Calculated (red, upper) and measured (blue, lower) powder XRD powder patterns for $[\text{Mn}(\text{bpy})(\text{EDPA})(\text{H}_2\text{O})_2]_\infty$ (**3**).

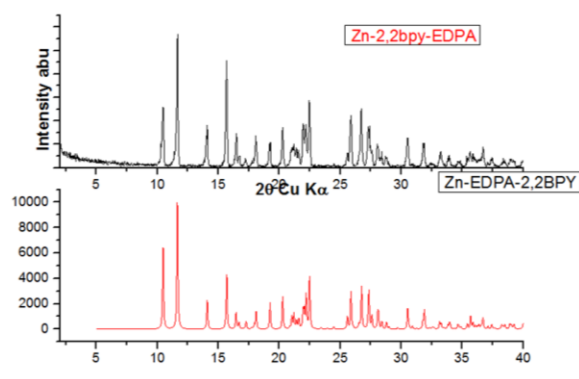


Figure S-X. Calculated (red, lower) and measured (black, upper) powder XRD powder patterns for $[\text{Zn}(\text{bpy})(\text{EDPA})]_\infty$ (**4**).

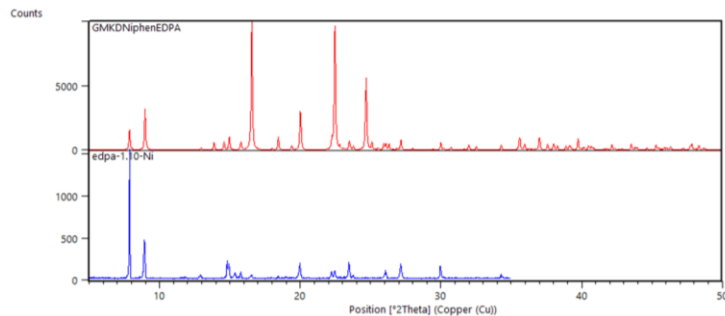


Figure S-X. Calculated (red, upper) and measured (blue, lower) powder XRD powder patterns for $[\text{Ni}(\text{phen})(\text{H}_2\text{O})_4](\text{EDPA})$ (**5**).