Supporting Information

to the paper

Catalytic properties of a series of coordination networks: cyanosilylation of aldehydes catalyzed by Zn(II)-4,4'-bpy-carboxylato complexes

Pongthipun Phuengphai,[a,b] Sujittra Youngme,[a]
Patrick Gamez[b] and Jan Reedijk[b]

[a] *Department of Chemistry, Faculty of Science, Khon Kaen University, Khon Kaen 40002, Thailand. E-mail: sujittra@kku.ac.th*
[b] *Leiden Institute of Chemistry, Gorlaeus Laboratories, Leiden University, PO Box 9502, 2300 RA Leiden, The Netherlands*

Three porous crystalline coordination polymers, $\{[Zn_3(4,4'\text{-bpy})_{3.5}(\mu\text{-}O_2CH)_4(H_2O)_2](ClO_4)_2(H_2O)_2\}_n$ (**1**), $\{[Zn_3(4,4'\text{-bpy})_3(\mu\text{-}O_2CCH_3)_4(H_2O)_2](PF_6)_2(H_2O)_2\}_n$ (**2**), and $\{[Zn_3(4,4'\text{-bpy})_4(\mu\text{-}O_2CCH_2CH_3)_4](ClO_4)_2(4,4'\text{-bpy})_2(H_2O)_4\}_n$ (**3**), exhibit voids that contain the counter-ions and guest molecules. The removal and reintroduction of guest water molecules for compounds **2** and **3** have been explored for their dynamic structural transformation and all Zn(II) compounds are active heterogeneous catalysts for the high-yield cyanosilylation of acetaldehyde in dichloromethane.

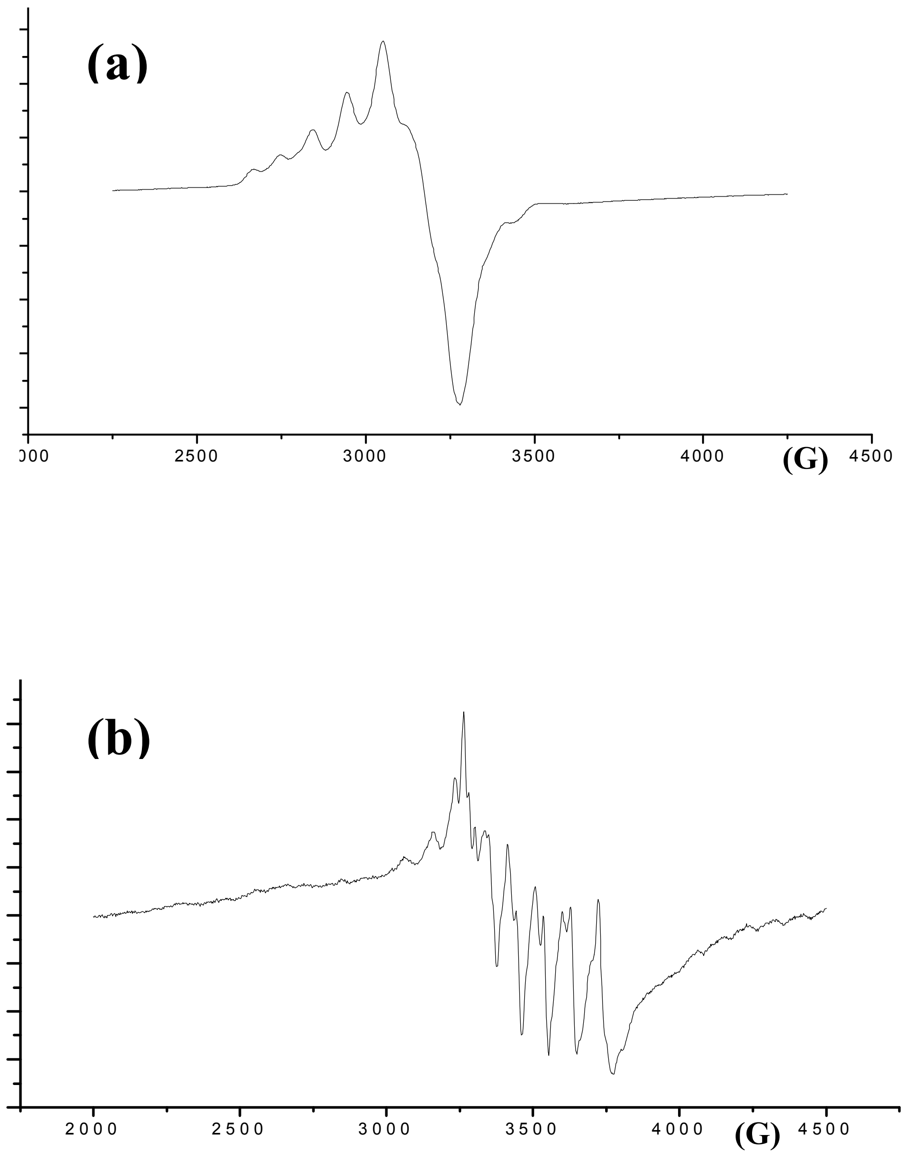
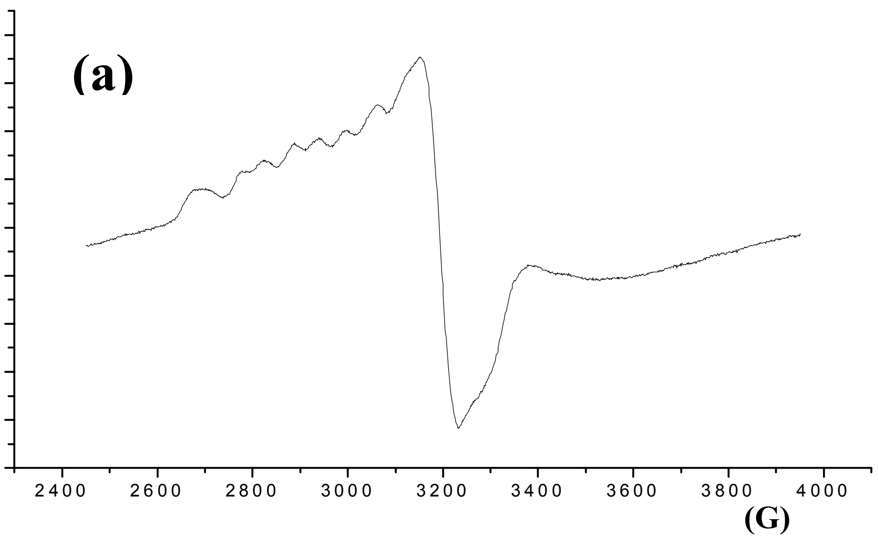


Figure S1.1 (a) The polycrystalline EPR spectrum of **1** doped with Cu(II) at 70 K
(b) The polycrystalline EPR spectrum of **1** doped with Mn(II) at 70 K



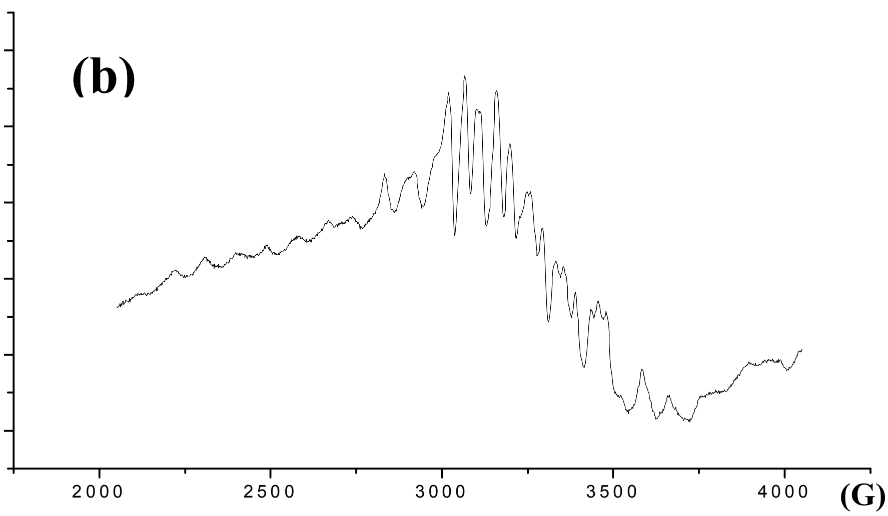


Figure S1.2 (a) The polycrystalline EPR spectrum of **3** doped with Cu(II) at 70 K
(b) The polycrystalline EPR spectrum of **3** doped with Mn(II) at 70 K

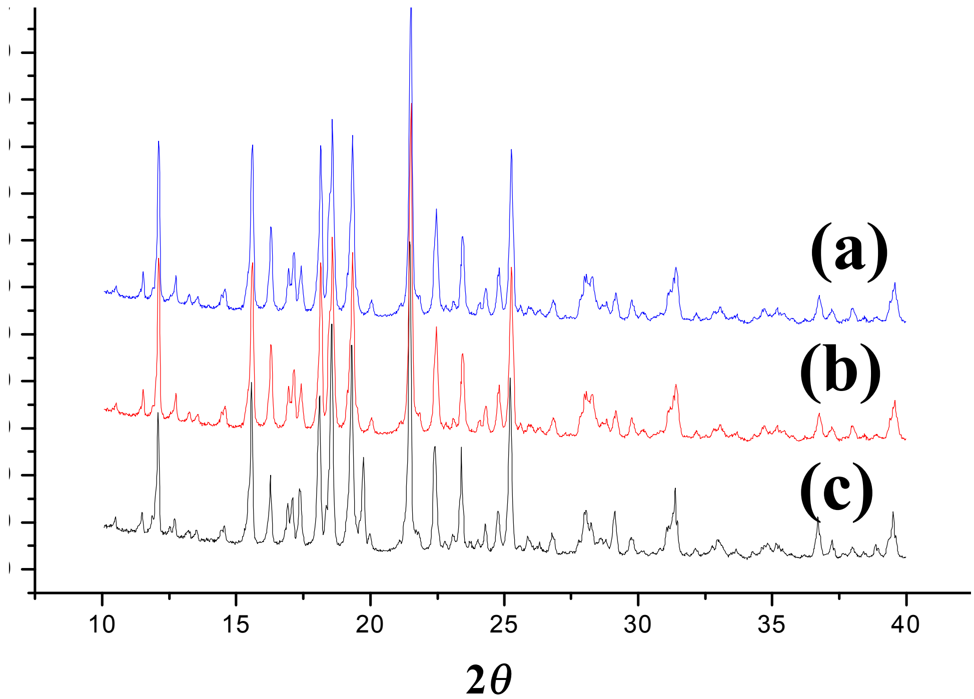


Figure S2.1 XRPD patterns of **1**
(a) as-synthesized, (b) doped with Cu(II) and (c) doped with Mn(II)

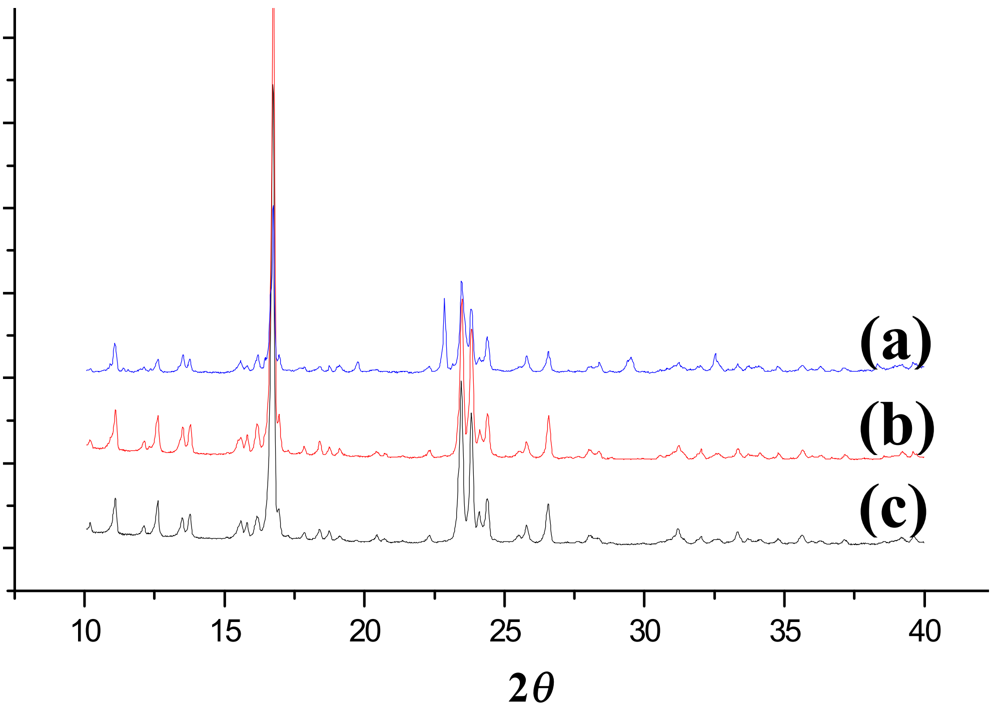


Figure S2.2 XRPD patterns of **2**
(a) as-synthesized, (b) doped with Cu(II) and (c) doped with Mn(II)

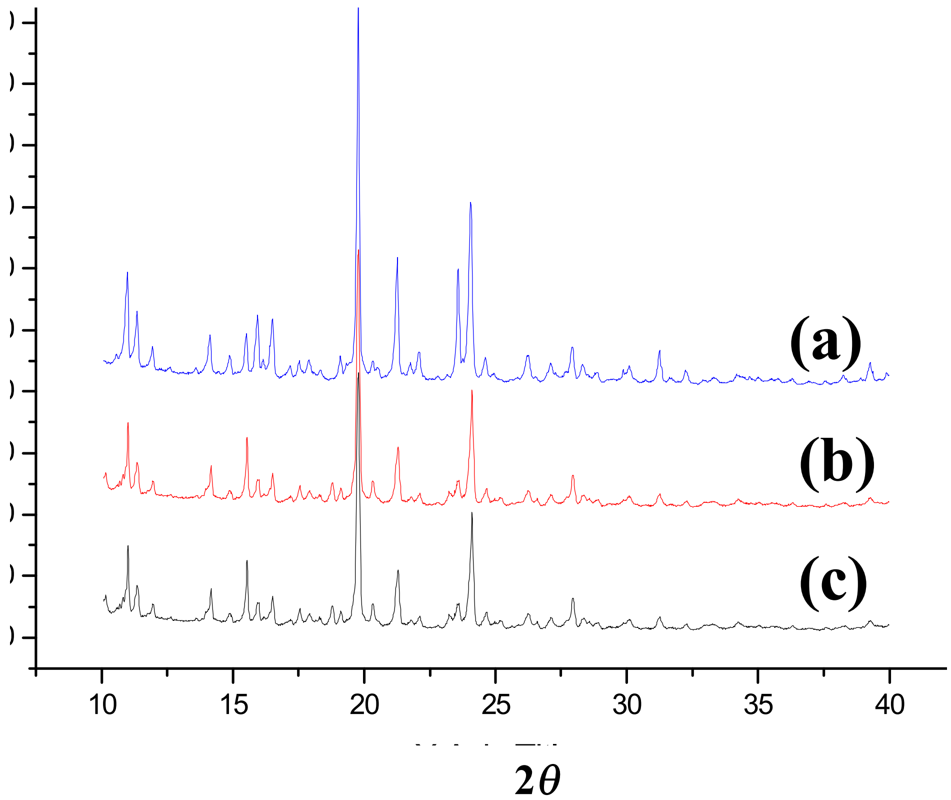


Figure S2.3 XRPD patterns of **3**
(a) as-synthesized, (b) doped with Cu(II) and (c) doped with Mn(II)

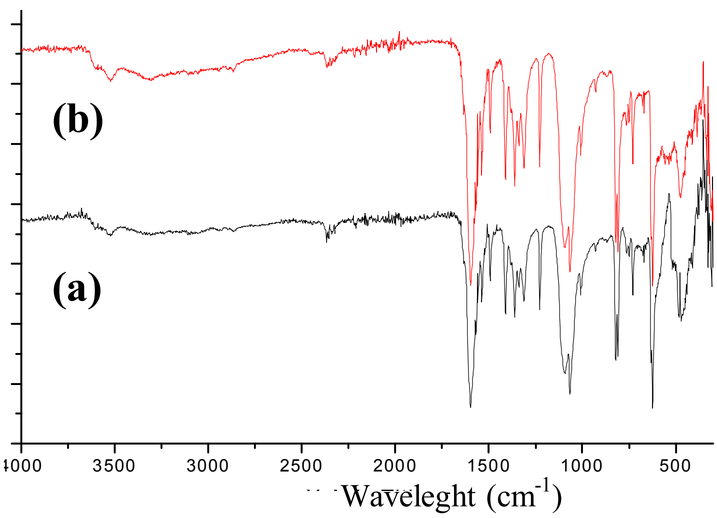


Figure S3.1 IR spectra of **1** (a) doped with Cu(II) and (b) doped with Mn(II)

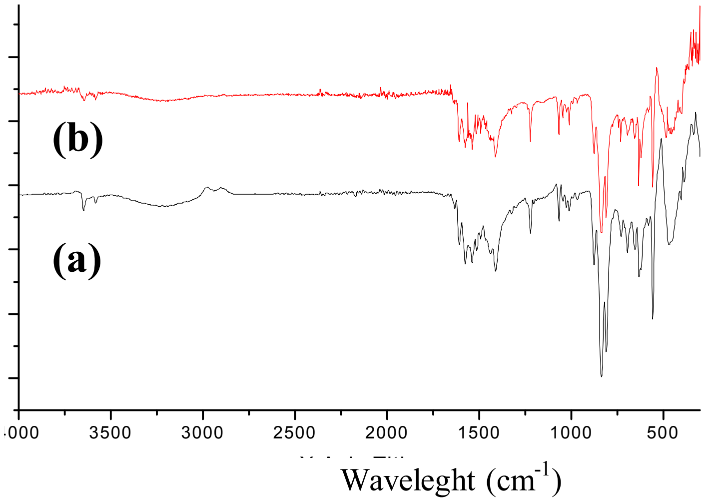


Figure S3.2 IR spectra of **2** (a) doped with Cu(II) and (b) doped with Mn(II)

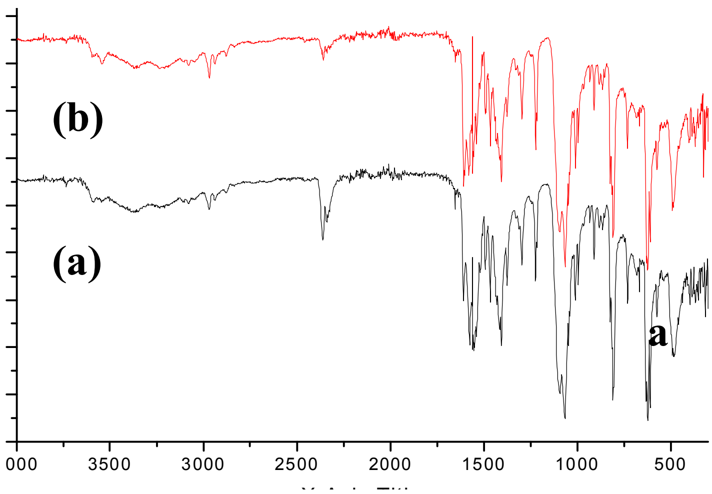


Figure S3.3 IR spectra of **3** (a) doped with Cu(II) and (b) doped with Mn(II)