Supplementary Information

for

Synthesis and Stuctures of Bimetallic and Polymeric Zinc Coordination Compounds Supported by Salicylaldiminato and Anilido-aldimine Ligands

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X-ray crystallography

Crystal data for **2b**: $C_{38}H_{60}N_2O_2Zn_2$, M = 707.62, orthorhombic, *Aba*2 (no. 41), a = 18.1320(8), b = 18.8215(7), c = 23.1100(9) Å, V = 7886.8(5) Å^3, Z = 8, D_c = 1.192 g cm^{-3}, μ(Mo-Kα) = 1.248 mm^{-1}, T = 173 K, pale yellow plates, Oxford Diffraction Xcalibur 3 diffractometer; 12497 independent measured reflections, F^2 refinement, R_1 = 0.063, wR_2 = 0.149, 11979 independent observed absorption-corrected reflections [$|F_o| > 4\sigma(|F_o|)$, $2\theta_{max}$ = 65°], 404 parameters. The structure of **1** was shown to be a partial polar twin by a combination of R-factor tests [R_1^+ = 0.0646, R_1^- = 0.0726] and by use of the Flack parameter [x^+ = +0.260(12), x^- = +0.740(12)]. CCDC 621015.

Crystal data for **4c**: $C_{45}H_{60}N_4Zn_2$, M = 787.71, triclinic, $P\bar{1}$ (no. 2), a = 8.9147(5), b = 14.7627(9), c = 16.4967(9) Å, α = 88.863(6), β = 86.406(4), γ = 72.948(5)°, V = 2071.5(2) Å^3, Z = 2, D_c = 1.263 g cm^{-3}, μ(Cu-Kα) = 1.676 mm^{-1}, T = 173 K, yellow blocks, Oxford Diffraction Xcalibur PX Ultra diffractometer; 7684 independent measured reflections, F^2 refinement, R_1 = 0.042, wR_2 = 0.120, 6428 independent observed absorption-corrected reflections [$|F_o| > 4\sigma(|F_o|)$, $2\theta_{max}$ = 142°], 469 parameters. CCDC 621016.

The C(37) ethyl ligand in the structure of **2b**, and the C(27) isopropyl moiety in the structure of **4c**, were both found to be disordered. In each case two orientations for the terminal methyl groups were identified with *ca.* 75% and 25% occupancy, respectively; the carbon atom(s) of major occupancy orientations were refined anisotropically, whilst those of the minor occupancy orientations were refined isotropically.

Crystal data for **5c**: $C_{48}H_{66}N_4Zn_2$, M = 829.79, monoclinic, $P2_1/n$ (no. 14), a = 11.5694(6), b = 13.4841(8), c = 14.3159(7) Å, β = 98.626(4)°, V = 2208.1(2) Å^3, Z = 2 [C_i symmetry], D_c = 1.248 g cm^{-3}, μ(Mo-Kα) = 1.122 mm^{-1}, T = 173 K, yellow blocks, Oxford Diffraction Xcalibur 3 diffractometer; 7658 independent measured reflections, F^2 refinement, R_1 = 0.045, wR_2 = 0.095, 3959 independent observed absorption-corrected reflections [$|F_o| > 4\sigma(|F_o|)$, $2\theta_{max}$ = 65°], 244 parameters. CCDC 621017.

Table S1. Selected bond lengths (Å) and angles (°) for **5c**.

Zn–N(1)	1.9277(16)		Zn–N(7)	1.9906(17)
Zn–C(23)	1.947(2)			
N(1)–Zn–N(7)	94.65(7)		N(1)–Zn–C(23)	139.00(9)
N(7)–Zn–C(23)	126.34(9)			

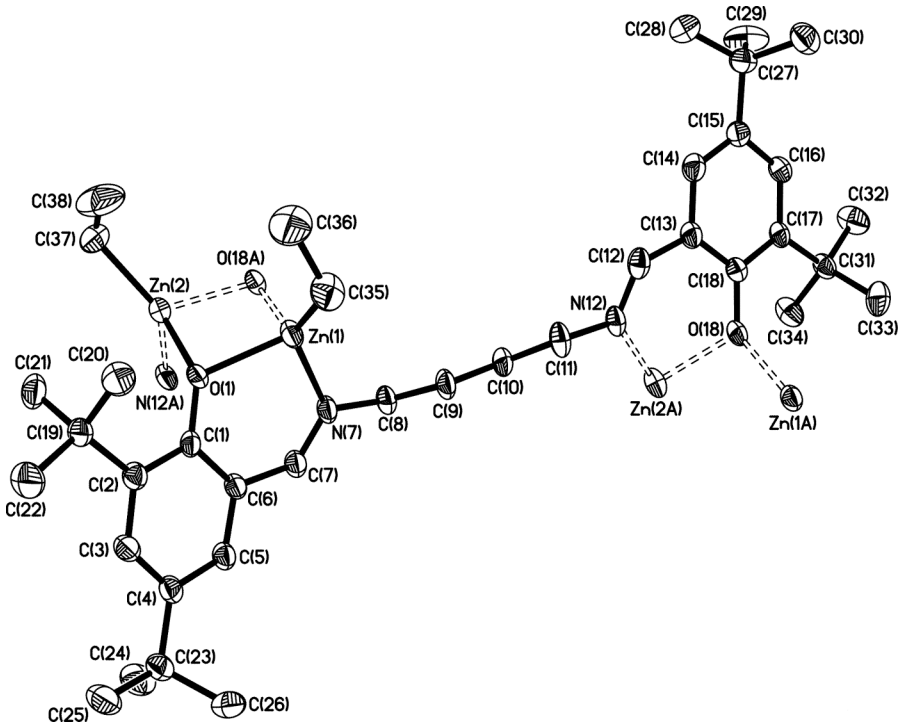

Fig. S1 The asymmetric unit in the structure of **2b** (50% probability ellipsoids).

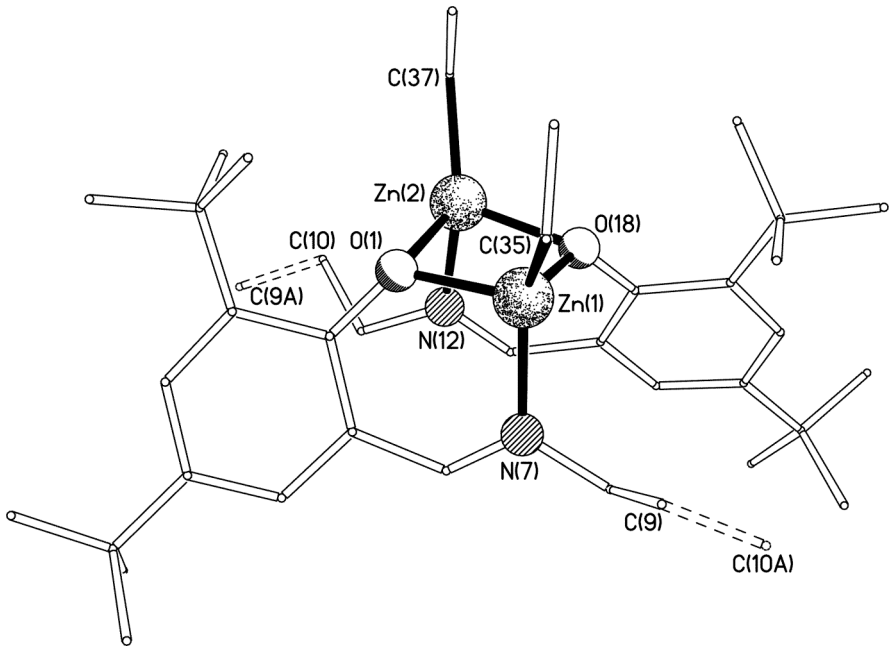

Fig. S2 The environment of the Zn_2O_2 ring in the structure of **2b**.

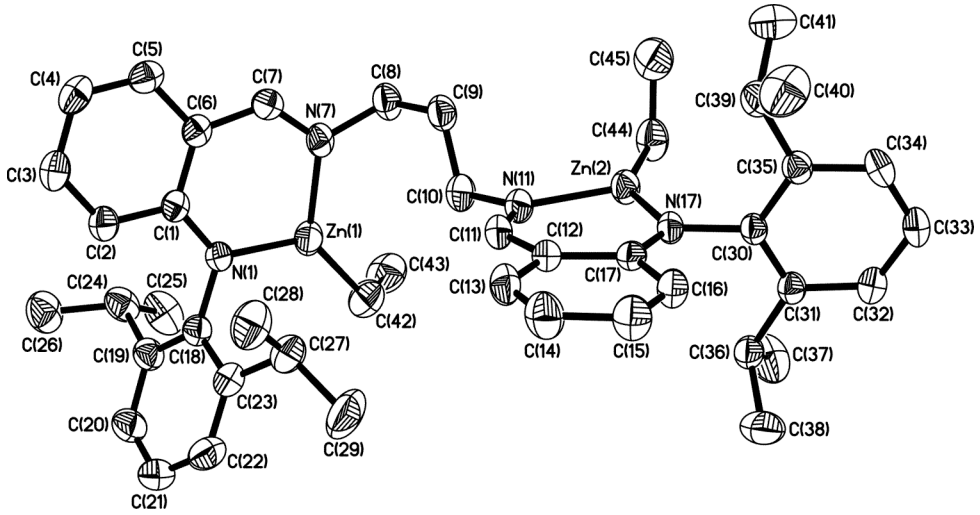

Fig. S3 The molecular structure of **4c** (50% probability ellipsoids).

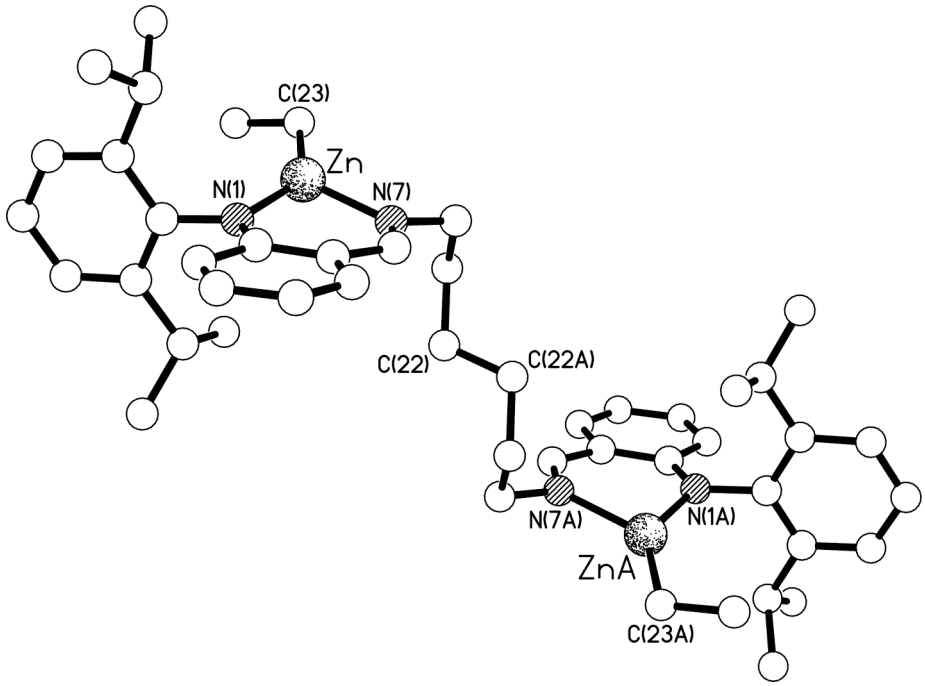

Fig. S4 The molecular structure of **5c**.

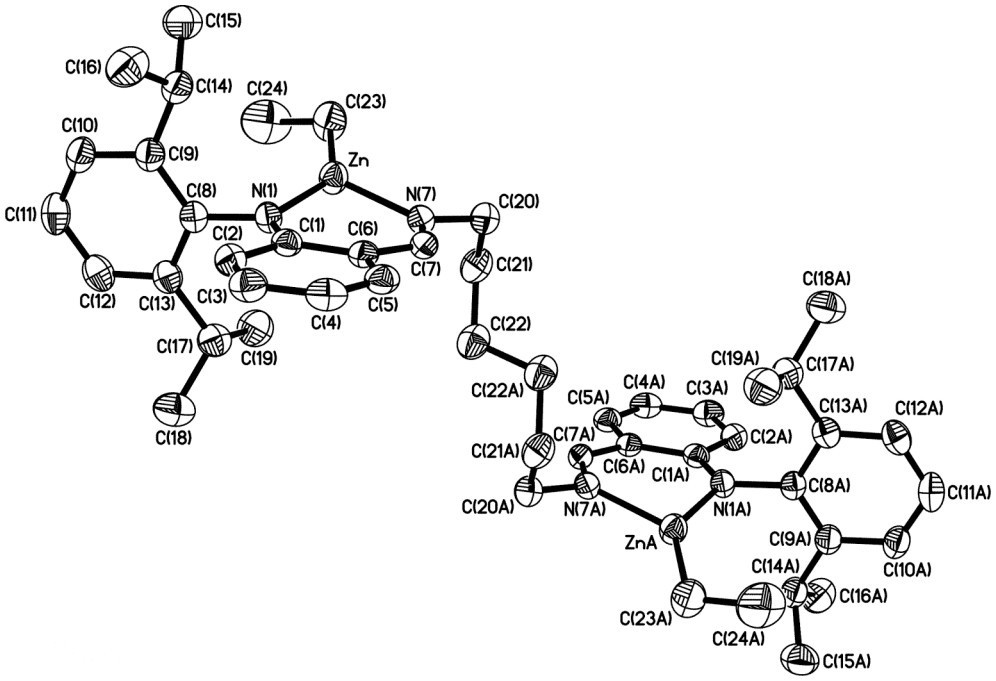

Fig. S5 The molecular structure of **5c** (50% probability ellipsoids).