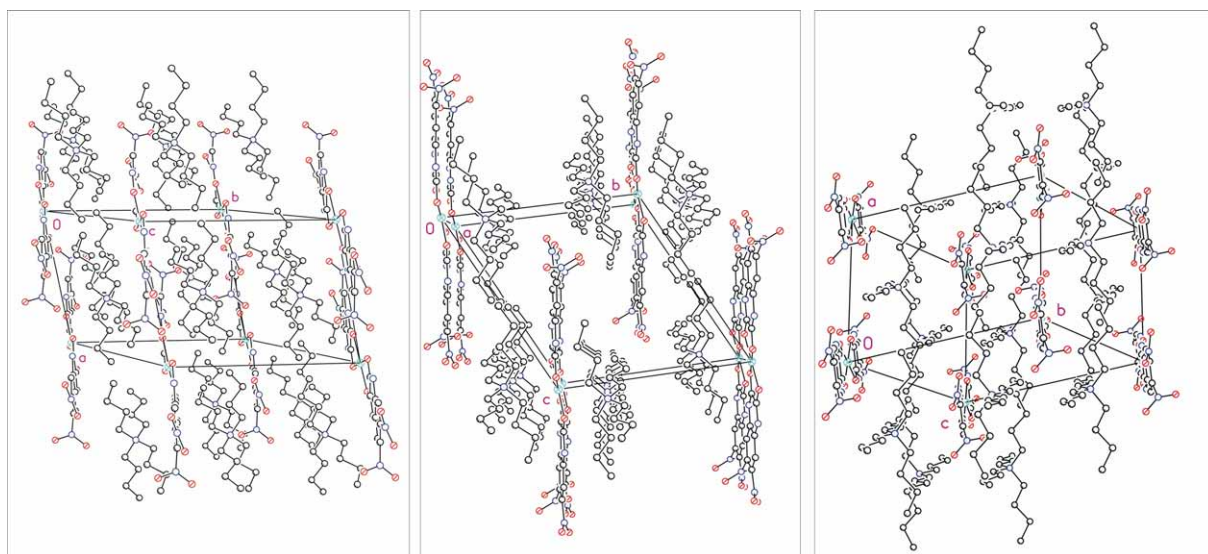


S1.

S2.

S3.

Figures S1 - S3. Packing of complex **2** in the solid state in different views illustrating the arrangement of $[\text{Ni}(2,3\text{-acbo})]^{2-}$ anions in one layer with the $[\text{ᵐBu}_4\text{N}]^+$ cations as spacers inbetween.

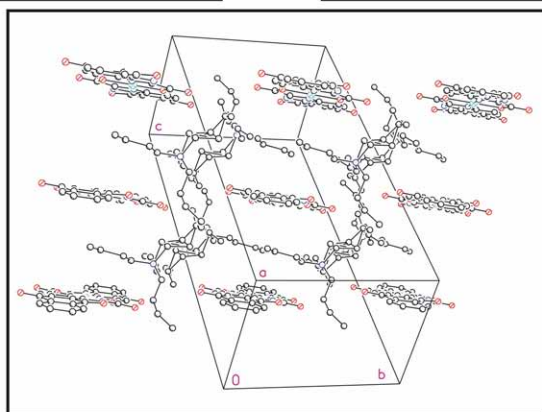
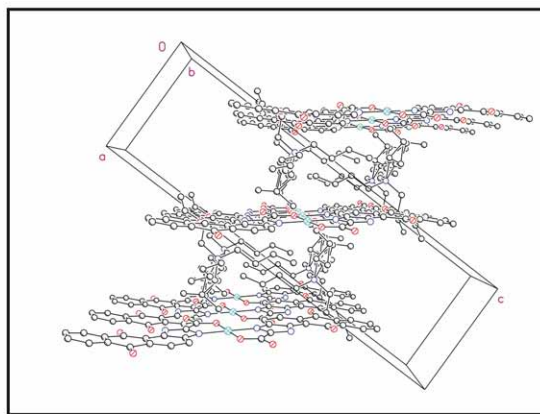
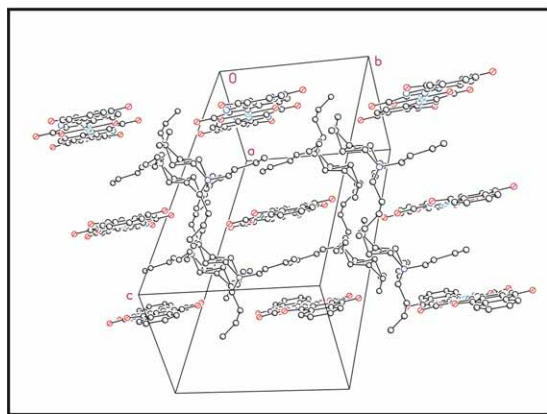


S4.

S5.

S6.

Figures S4 – S6. Packing of complex **3** in the solid state in different views illustrating the arrangement of $[\text{Cu}(2,3\text{-acbo})]^{2-}$ anions in one layer with the $[\text{ᵐBu}_4\text{N}]^+$ cations as spacers inbetween.

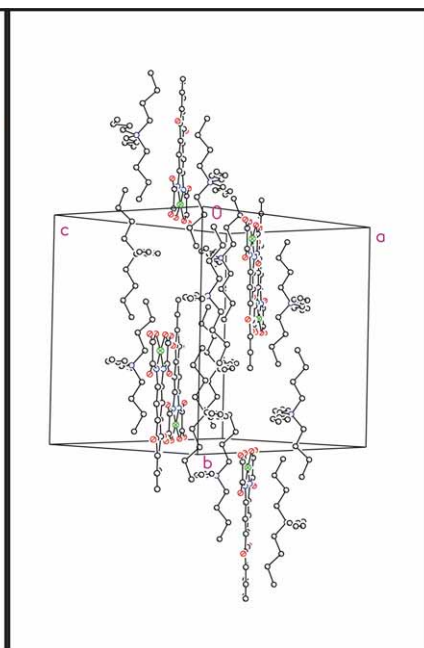
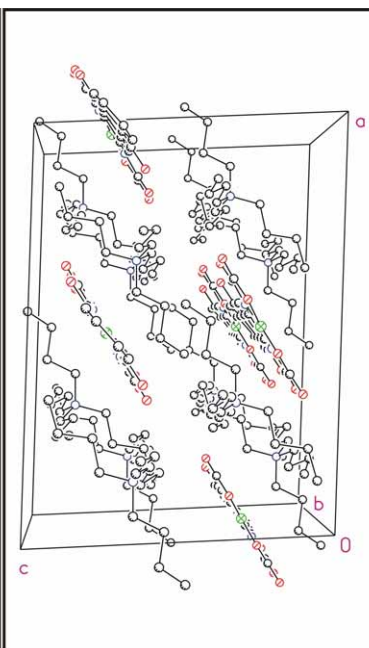
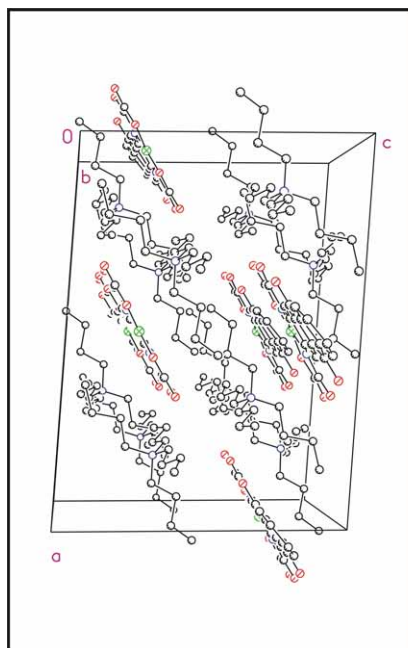


S7.

S8.

S9.

Figures S7 – S9. Packing of complex **6** in the solid state in different views illustrating the arrangement of $[\text{Cu}(\text{aibo})_2]^{2-}$ anions in one layer with the $[\text{nBu}_4\text{N}]^+$ cations as spacers inbetween.

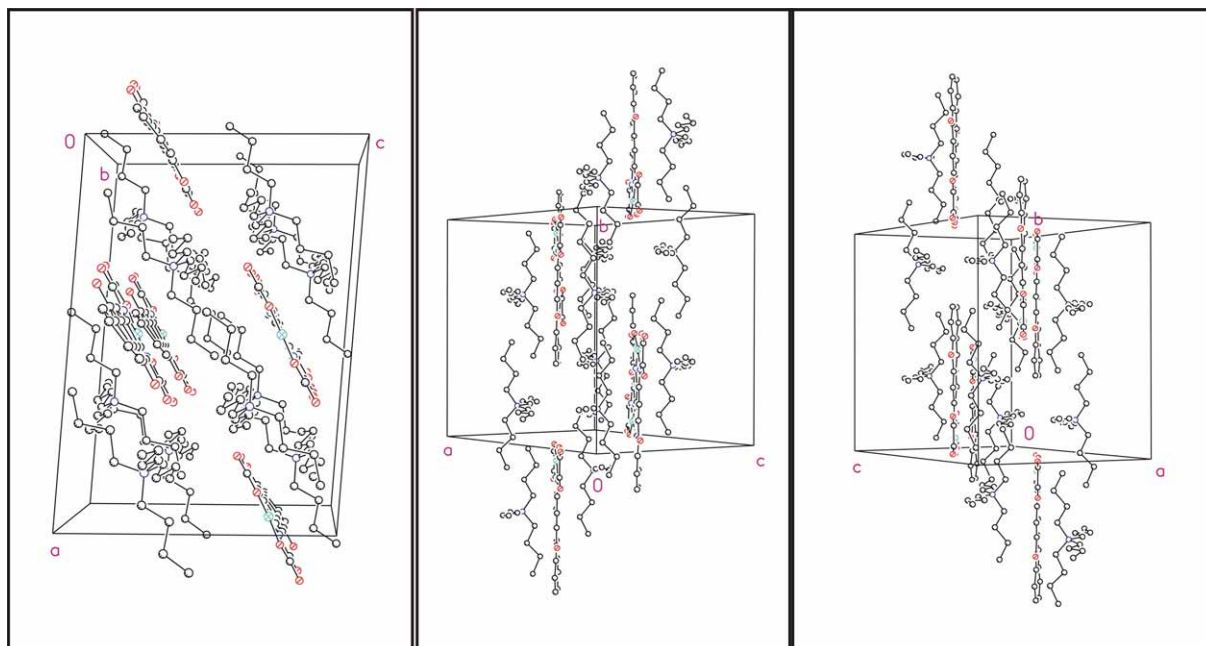


S10.

S11.

S12.

Figures S10 – S12. Packing of complex **8** in the solid state in different views illustrating the arrangement of $[\text{Ni}(\text{nibo})_2]^{2-}$ anions in one layer with the $[\text{nBu}_4\text{N}]^+$ cations as spacers inbetween.



S13.

S14.

S15.

Figures S13 – S15. Packing of complex **9** in the solid state in different views illustrating the arrangement of $[\text{Cu}(\text{niqo})_2]^{2-}$ anions in one layer with the $[\text{tBu}_4\text{N}]^+$ cations as spacers inbetween.

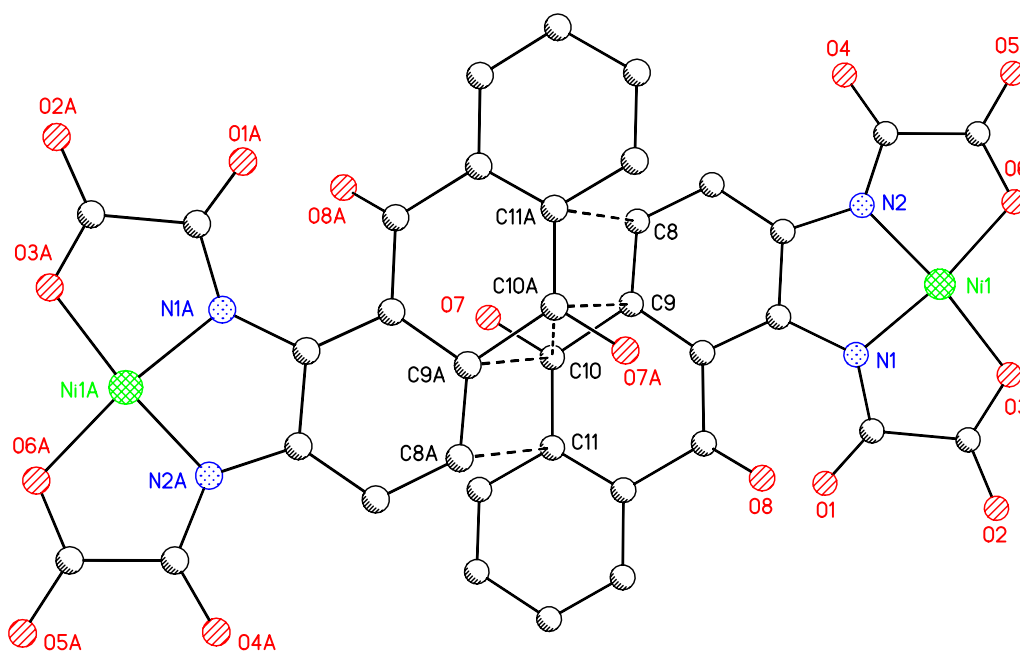
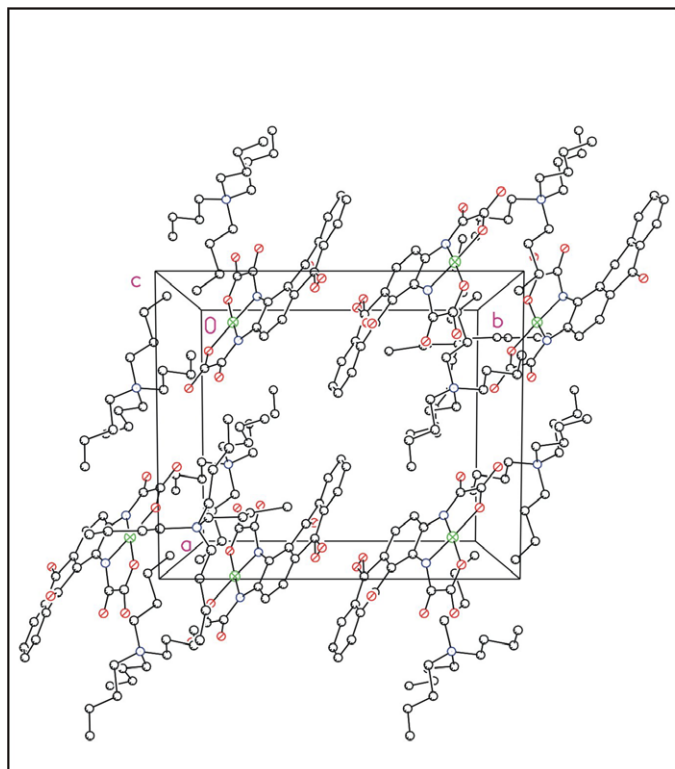
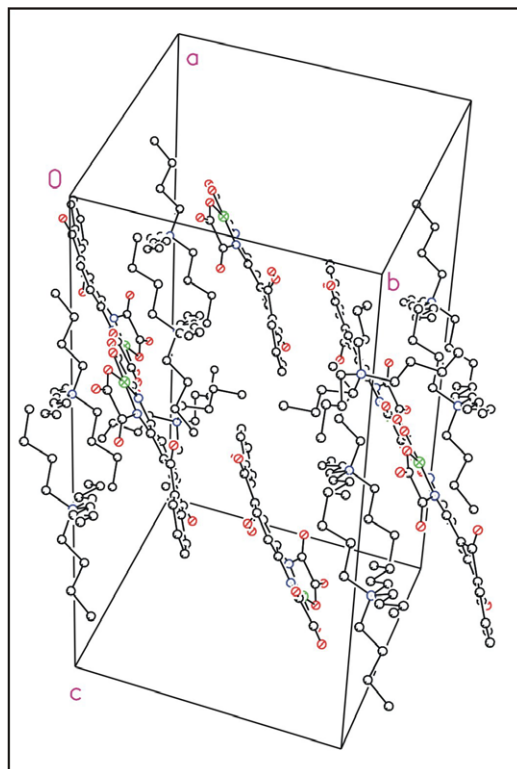


Figure S16. Illustration of the $\pi\pi$ interaction of two $[\text{Ni}(1,2\text{-acbo})]^{2-}$ anions of **5** in the solid state. Dotted lines refers to C–C distances below 3.6 Å, with $d(\text{C}8\text{--C}11\text{A}) = 3.59$ Å, $d(\text{C}9\text{--C}10\text{A}) = 3.46$ Å and $d(\text{C}10\text{--C}10\text{A}) = 3.28$ Å. Disordered atoms have been omitted for clarity.



S17.



S18.

Figures S17 – S18. Packing of complex **9** in the solid state in different views illustrating the arrangement of $[\text{Ni}(1,2\text{-acbo})]^{2-}$ anions in one layer with the $[\text{nBu}_4\text{N}]^+$ cations as spacers inbetween. Disordered atoms have been omitted.

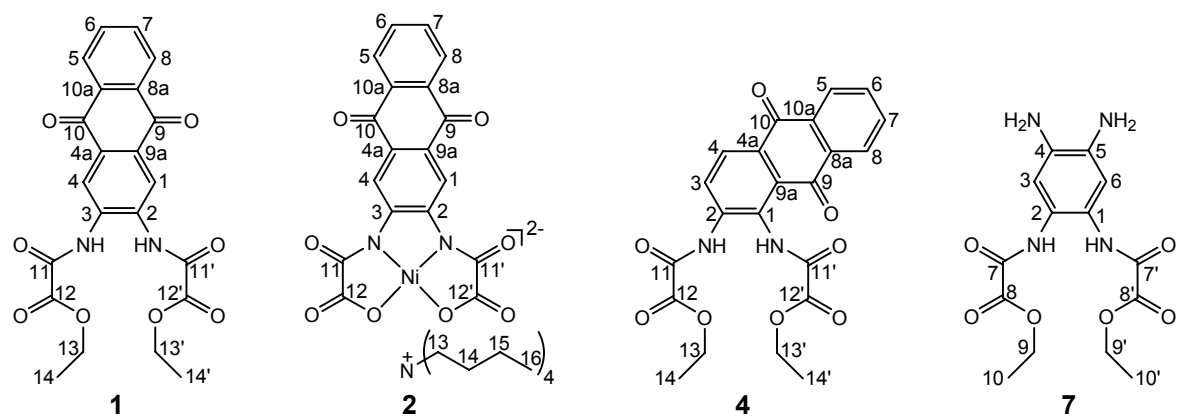


Figure S19. The atomic numbering scheme for **1**, **2**, **4**, and **7**.