

Publication

Assembling and disassembling zinc-containing coordination polymers of 4''-phenyl-4,2'':6'',4''-terpyridine

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 461401**Author(s)** Constable, Edwin C.; Zhang, Guoqi; Housecroft, Catherine E.; Neuburger, Markus; Zampese, Jennifer A.**Author(s) at UniBasel** [Housecroft, Catherine](#) ; [Constable, Edwin Charles](#) ; [Zampese, Jennifer Ann](#) ; [Zhang, Guoqi](#) ; [Neuburger, Markus](#) ;**Year** 2010**Title** Assembling and disassembling zinc-containing coordination polymers of 4''-phenyl-4,2'':6'',4''-terpyridine**Journal** CrystEngComm**Volume** 12**Number** 7**Pages / Article-Number** 2146-2152

The ligand 4''-phenyl-4,2'':6'',4''-terpyridine (3) reacts with $\text{Zn}(\text{OAc})_2 \cdot 2\text{H}_2\text{O}$ to yield the one-dimensional coordination polymer $[\text{Zn}_2(3)(\text{OAc})_4]_n$ or $[\text{Zn}(3)(\text{OAc})_2]_n$ depending upon the reaction conditions. Both compounds have been structurally characterized. The former contains $\{\text{Zn}_2(\text{t-OAc})_4\}$ units, pairs of which are connected by a bridging ligand 3, while the latter contains tetrahedral zinc(II) centres, each bonded to two terminal $[\text{OAc}]^-$ ligands and two ligands 3. Both $[\text{Zn}_2(3)(\text{OAc})_4]_n$ and $[\text{Zn}(3)(\text{OAc})_2]_n$ exhibit emissive behaviour in the solid state, the emissions being significantly enhanced with respect to non-coordinated ligand 3. Protonation of the coordination polymers produces a red shift in the emission maximum. However, treatment of $[\text{Zn}_2(3)(\text{OAc})_4]_n$ with MeI or EtI quenches the emission. This is a consequence of the coordination polymer being dismantled, Zn–N bonds are cleaved and the complexes $[\text{Me}_2(3)][\text{ZnI}_4]$ and $[\text{Et}_2(3)][\text{ZnI}_4]$ are formed. The direct reaction of 3 with an excess of MeI produces $[\text{Me}_2(3)]\text{I}_2$ with N-methylation occurring at the two outer pyridine rings as observed in $[\text{Me}_2(3)][\text{ZnI}_4]$.

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