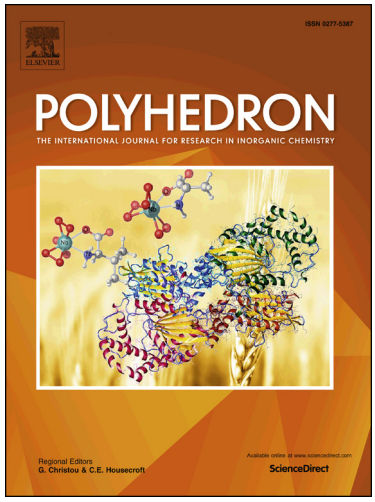

Synthesis and properties of cobalt(II) coordination polymers linked by 4'-(4-pyridyl)-2,2':6',2"-terpyridine

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PII: S0277-5387(18)30300-0
DOI: https://doi.org/10.1016/j.poly.2018.05.052
Reference: POLY 13199

To appear in: *Polyhedron*

Received Date: 13 April 2018
Accepted Date: 22 May 2018

Please cite this article as: O. Drath, R.W. Gable, B. Moubaraki, K.S. Murray, C. Boskovic, Synthesis and properties of cobalt(II) coordination polymers linked by 4'-(4-pyridyl)-2,2':6',2"-terpyridine, *Polyhedron* (2018), doi: https://doi.org/10.1016/j.poly.2018.05.052

Synthesis and properties of cobalt(II) coordination polymers linked by 4'-(4-pyridyl)-2,2':6',2''-terpyridine

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Dedicated to Professor Spyros Perlepes on the occasion of his 65th birthday.

ABSTRACT

The cationic one-dimensional coordination polymers $[\{Co(pyterpy)_2\}\{M(hfac)_2\}]^{2+}$ (M = Co(II) or Zn(II); pyterpy = 4'-(4-pyridyl)-2,2':6',2"-terpyridine; $hfac^-$ = hexafluoroacetyloacetonate) feature alternating $\{Co(pyterpy)_2\}$ and $\{M(hfac)_2\}$ units linked through heteroditopic pyterpy ligands. Cocrystallization with $[M(hfac)_3]^-$ (M = Co(II) or Zn(II)) counteranions has afforded the compounds: $[\{Co(pyterpy)_2\}\{Co(hfac)_2\}][Co(hfac)_3]_2$ (**1**) and $[\{Co(pyterpy)_2\}\{Co_{0.7}Zn_{0.3}(hfac)_2\}][Zn(hfac)_3]_2$ (**2**). Variable temperature crystallographic and magnetic studies indicate low spin cobalt(II) ions in the $\{Co(pyterpy)_2\}$ components of the coordination polymers up to room temperature; magnetic studies suggest the onset of a thermally-induced spin crossover at these centers above room temperature.