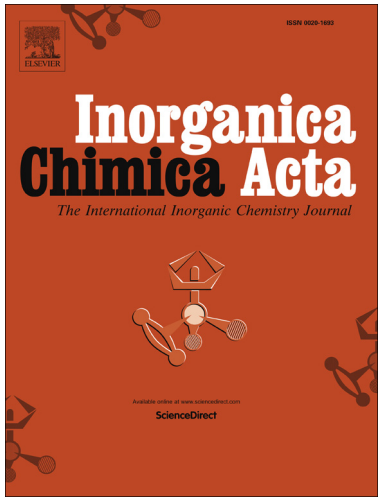

Research paper

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ABSTRACT

Two pincer ligands, 2,6-bis[[(2′-methylphenyl)thio]methyl]pyridine (**SNS-1**) and 2,6-bis[[(2′,6′-dimethylphenyl)thio]methyl]pyridine (**SNS-2**), each possessing a central pyridyl N-donor flanked by two thioether S-Ar functionalities were prepared and metallated with $CoCl_2$, $FeCl_2 \cdot 4H_2O$, $CuCl_2 \cdot 2H_2O$ metal salts. The products of reaction with **SNS-1** were three new tridentate pincer complexes [M(κ^3-**SNS-1**)Cl_2] (M = Fe, Co, Cu). The reactions of ligand **SNS-2** yielded analogous complexes, [M(κ^3-**SNS-2**)Cl_2], for $FeCl_2$ and $CoCl_2$ but in the case of the reaction with $CuCl_2$ the product was an unanticipated Cu(I) complex [Cu(κ^2-**SNS-2**)Cl]. Single crystal X-ray diffraction analysis revealed that this Cu(I) complex displayed a bidentate S,N ligand and a pseudo-trigonal planar geometry for the Cu center. The ability of these metal complexes to catalyze the formation of cyclic carbonates from CO_2 and epoxides was investigated and the less sterically hindered Co(II) complex, [Co(κ^3-**SNS-1**)Cl_2] showed