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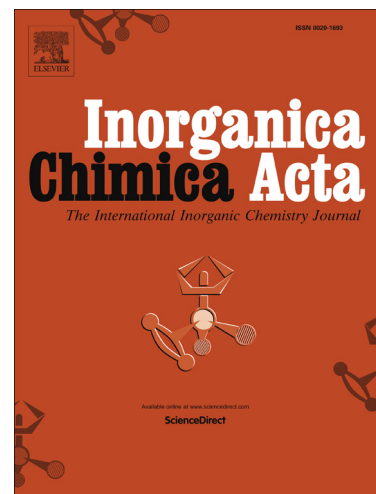
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Synthesis of Complexes Fe, Co and Cu Supported by “SNS” Pincer Ligands and their Ability to Catalytically Form Cyclic Carbonates

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ABSTRACT

Two pincer ligands, 2,6-bis[[2'-methylphenyl]thio]methylpyridine (**SNS-1**) and 2,6-bis[[2',6'-dimethylphenyl]thio]methylpyridine (**SNS-2**), each possessing a central pyridyl N-donor flanked by two thioether S-Ar functionalities were prepared and metallated with CoCl₂, FeCl₂·4H₂O, CuCl₂·2H₂O metal salts. The products of reaction with **SNS-1** were three new tridentate pincer complexes [M(κ³-**SNS-1**)Cl₂] (M = Fe, Co, Cu). The reactions of ligand **SNS-2** yielded analogous complexes, [M(κ³-**SNS-2**)Cl₂], for FeCl₂ and CoCl₂ but in the case of the reaction with CuCl₂ the product was an unanticipated Cu(I) complex [Cu(κ²-**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 CO₂ and epoxides was investigated and the less sterically hindered Co(II) complex, [Co(κ³-**SNS-1**)Cl₂] showed

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