Direct synthesis of heterometallic Cu/Mo complexes with aromatic chelating N,N-donating ligands.

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Streszczenie

A series of novel heterometallic complexes [CuL2MoO4] xH2O [L = phen (1,10-phenanthroline) (1), 5,50-Me2bpy (5,50-dimethyl-2,20-bipyridine) (3a), bpy (2,20-bipyridine) (5), x = 2.5 (1), 3 (3) and 4.5 (5)], [Cu(5,50-Me2bpy)2MoO4] 0.5(5,50-Me2bpy) 8H2O (3b) [Cu(phen)2Mo2O7(phen)] 8H2O (2), and {[Cu(4,40-Me2bpy)2]2MoO4}(OH)2 5.25H2O (4) [4,40-Me2bpy = 4,40-dimethyl-2,20-bipyridine] have been synthesized by interaction of copper metal with Mo source and ligands in aqueous solutions. The complexes were characterized by elemental analysis, IR and EPR spectroscopy, TG, CV as well as single crystal X-ray diffraction analysis. X-ray crystallographic study of the compounds has shown that the complexes 1–4 possess molecular structures while 5 can be described as a molecular cation. The influence of Mo source, molecular ratio of the components and temperature of the reaction mixture on formation of particular target compounds has been investigated.

Słowa kluczowe

Heterometallic complexes, Direct synthesis, Molybdate, X- and Q-band EPR

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