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Liquid Crystalline Complexes of Cu(II) and Pd(II) with Ferrocene-Containing Ligands

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Abstract

The new liquid crystalline heteronuclear complexes Cu(II) 1a and Pd(II) 1b with a non-mesogenic ferrocene-containing β-enaminoketone L1 of the formula C5H5FeC5H4-C6H 4-NH-C2H2-(-O)-C6H 4OC12H25, showing monotropic nematic and smectic A phases, are studied. The ortho-palladated Cl-bridged dimeric complex 3 with a non-mesogenic ferrocene-containing Schiffs base L2 of the formula C5H5FeC5H4-C6H 4-N=CH-C6H4OC10H21, forming a stable smectic A phase, has been synthesized. The novel mixed-ligand heteronuclear complexes 4-7 have been obtained by treatment of the ortho-palladated complex 3 with appropriate ligands. Some of the resulting products exhibit the rather low-melting (below 100deg;C) smectic A phases. Structures of the compounds are studied by elemental analysis, 1H and 13C NMR, and ESR spectroscopies.

Keywords

Cyclopalladated complexes, Ferrocene derivatives, Heteronuclear complexes, Metallomesogens