

# Preparation and Characterization of Some Nickel 1,2-Dithiolene Complexes as Single-Component Semiconductors

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Z. Naturforsch. **61b**, 1007 – 1011 (2006); received March 6, 2006

The unsymmetrical (mixed-ligand) nickel 1,2-dithiolene complexes Ni(pddt)(dmio) and Ni(pddt)(dmit) (where pddt is 6,7-dihydro-5H-1,4-dithiepin-2,3-dithiolate, dmio is 1,3-dithiol-2-one-4,5-dithiolate, and dmit is 1,3-dithiol-2-thione-4,5-dithiolate) were synthesized and characterized. The new complexes were found to be soluble in organic solvents, from which single crystals and/or thin deposits can be obtained. In the solid state, the compounds behave as single-component semiconductors with low room temperature conductivity values.

*Key words:* Metal 1,2-Dithiolenes, Organic Semiconductors