

# **Oximes as a Basis of Metallomesogenes with Square-Planar Coordination Geometry at the Central Nickel(II)-Atom:**

## **Synthesis and Properties**

This Ph.D. describes the synthesis of liquid crystals composed of nickel metal complexes. 1,2-Dioximes were used to co-ordinate to the metal. The first preparation of long chain bidentate oxime ligands was successful. Novel rodlike complexes were synthesised by treating the ligands with salts of nickel. The compounds are airstable and soluble in commercial organic solvents. The red neutral solids exhibit thermochromism when heated to the mesophase. By increasing the temperature the red colour turns to yellow. The yellow colour was also observed in solution.

The mesogenic properties were investigated by a polarising microscope equipped with a heating plate. The modified complexes of the type bis[phenylpropane-1,2-dioximato]-nickel(II) containing long chains were found to be mesogenic. The natural texture suggested the presence of a smectic A mesophase ( $S_A$ ). By additional lateral phenyl substituents the melting points increases. An influence of the long chain on the kind of the mesogenic phase could not be observed. The fact that the square planar complexes are stacked could lead to interesting applications.