

## ABSTRACT

# SYNTHESIS OF WATER-SOLUBLE RUBYRIN

by

Dirk Schweitzer

Friedrich-Schiller-University at Jena, Jena, Germany, 1995

SUPERVISORS: J. L. Sessler

E.-G. Jäger

**Abstract:** This Diplom work is concerned with the synthesis of linear oligomeric and cyclic oligomeric pyrrole compounds. Specifically, the synthesis of three new tetrapyrrolic compounds and two new  $\beta$ -substituted expanded porphyrin compounds is described. The three new tetrapyrrolic compounds are a 5,5'-bis((benzyl-5-carboxylate-3-2'-methoxycarbonylethyl-4-methylpyrrole-2-yl)methyl)-4,4'-diethyl-3,3'-dimethyl-2,2'-bipyrrole, a fourfold oxidized form of this compound, and a 5,5'- bis((5-carboxyl-3-2'-methoxycarbonylethyl-4-methylpyrrole-2-yl)methyl)-4,4'-diethyl-3,3'-dimethyl-2,2'-bipyrrole. The two new expanded porphyrin compounds are a rubyrin dimethylester and a rubyrin diacid. Also, the existence of a bisglucosamine  $\beta$ -substituted rubyrin is proven by high-resolution mass spectrometry. Further, the stability of rubyrin against several carboxylic acid activating agents is examined.

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