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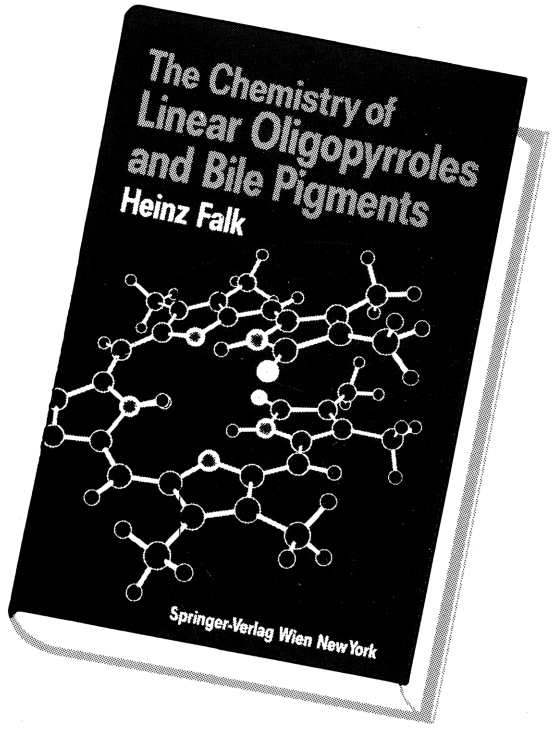
Heinz Falk

The Chemistry of Linear Oligopyrroles and Bile Pigments

This monograph will be helpful to the specialist or researcher as well as to the newcomer in this interdisciplinary field of linear oligopyrrole chemistry, which ranges from medicinal and biological to physical sciences.

Linear oligopyrroles and bile pigments are important as antenna pigments of photosynthesis, light sensory pigments in plants, and products of animal and human metabolism. Whereas di-, tri-, penta- and polypyrroles play no part in nature, they are useful as synthons in the synthesis of e.g. porphyrins and corrins, and even as organic conductors.



Discussion of the chemistry of linear oligopyrroles is started with reviews of nomenclature, occurrence, formation, importance, and history. Their structural and stereochemical aspects are illustrated by ball and stick models of X-ray crystallographic determinations as well as by the results obtained by various methods for their state of solution. The synthesis of these compounds is treated in a methodological way providing typical examples instead of listing all syntheses executed so far. Selected physical properties like absorption, emission, chiroptical data, and nuclear magnetic resonance are covered in detail. Nucleophilic, electrophilic, and radical reactions are discussed from the standpoint of semiempirical calculations providing typical examples. Moreover, their photochemistry, carrier mediated transport, skeletal transformations, redox properties, and catalytic function are included.

The book will provide advanced students approaching the subject from a variety of disciplines with the chemical background necessary to cope with the sometimes rather complicated material, but it will also provide the active researcher in this field with a timely review to inspire future work.

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