

Preface and Acknowledgements

This book is based on portions of a colloquium of the Royal Netherlands Academy of Arts and Sciences: "Mechanisms of Biohalogenation and Dehalogenation" which was held in Amsterdam during the period September 16–18, 1996. This colloquium followed an international conference previously held in the Netherlands in 1993 on naturally produced organohalogens. This conference had a strong emphasis on analysis, characterisation, distribution and budgets and it was strongly felt that there was a lack of knowledge of the mechanisms underlying the biosynthesis and breakdown of organohalogens. The idea was conceived that bringing together scientists working on halogenating enzymes and dehalogenating enzymes would be fruitful. Indeed, this was the case and the meeting which was restricted to 50 invited scientists was a great success. This led us to bring together the information presented at the meeting. In this volume the occurrence of natural organohalogens is discussed and it particular highlights and reviews the biochemical research on enzymes involved in their biosynthesis (haloperoxidases) and the enzymes involved in the breakdown (dehalogenases). Further, the potential commercial application of these enzymes and micro-organisms are discussed. The field has experienced a rapid growth in recent years in particular since three dimensional structures of the enzymes that catalyse such reactions have become available. It is expected that the introduction of modern molecular biology techniques to modify the enzymes in their properties and catalytic efficiency will lead to the development of efficient catalysts that may be used in specific industrial halogenation and dehalogenation reactions. We are sure that the contents of this book will stimulate further research in this direction.

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The editors