

There are many mononuclear iron-containing enzymes in nature that utilize molecular oxygen and transfer one or both oxygen atoms of O_2 to substrates. These enzymes catalyze many processes including the biosynthesis of hormones, the metabolism of drugs, DNA and RNA base repair and, the biosynthesis of antibiotics. Therefore, mononuclear iron-containing enzymes are important intermediates in bioprocesses and have great potential in the commercial biosynthesis of specific products since they often catalyze reactions regioselectively or stereospecifically. Understanding their mechanism and function is important and will assist in searches for commercial exploitation. In recent years, advances in experimental as well as theoretical methodologies have made it possible to study the mechanism and function of these enzymes and much information on their properties has been gained.

This book highlights recent developments in the field is a timely addition to the literature and will interest a broad readership in the fields of biochemistry, inorganic chemistry and computational chemistry. The Editors, leaders in the field of non-heme and heme iron containing monooxygenases, have filled the book with topical review chapters by leaders in the various sub-disciplines.

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