

geometric structures, the electronic structures, and the mechanisms of biological redox centers through the use of modern physical techniques."

The first four chapters in the fifth volume in the series deal with iron carriers, including bacterial "siderophores," ferritin, and transferrin. The chapters begin with a survey of the carrier's basic structure and properties. Next, detailed descriptions of several physical chemical experiments are provided, including X-ray diffraction, EPR, NMR, Mossbauer spectroscopy, and optical absorption. Each experiment is liberally provided with tables and extremely high-quality figures and carefully explains what that experiment tells us about properties such as three-dimensional structure with or without bound metal, kinetics and mechanism of metal binding and/or release, and the biological fate of the bound metal. The authors often proceed to use this knowledge to confront the more controversial issues of biological significance. Sections on the stereospecificity of bacterial cell receptors for siderophores, the intracellular fate of siderophore-bound iron, and metal binding to and mobilization from ferritin and an entire chapter devoted to recent studies of transferrin are fascinating. Conflicting experiments are noted, with an effort to explain which conclusion is currently accepted, and why. Occasionally, a topic is introduced that has few physical chemical data to date, such as "Bacterial Virulence Factors Associated With Siderophores," or that presents new information, such as "Bacterioferritin." These sections present only factual information and seem to invite further competent physical chemical research.

The final two chapters discuss the catalytic role of iron in iron proteins. The first of these discusses "Binuclear Iron Proteins." It is arranged much like earlier chapters but with an emphasis on the nature of the two iron atoms and their role in the electron transfer or oxygen activation by the enzyme. In addition to the techniques mentioned above, Raman spectroscopy and X-ray absorption spectroscopy are also described. The final chapter, "The Catechol Dioxygenases," seems brief in comparison to the others and is not arranged in as orderly a manner; nevertheless, there is plenty to inform the reader as to what is known about the iron center of these enzymes.

In conclusion, this book presents a timely and up-to-date collection of information concerning the mentioned iron-containing compounds. The high-quality figures, the attention to detail, and the excellent discussions are useful to researchers, graduate students, and faculty alike. This book will promote further physical biochemistry research and is highly recommended to the libraries of organizations interested in chemical research and teaching.

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## Erratum

In the paper, "The Relationship Between the Glass Transition Temperature and Water Vapor Absorption by Poly(vinylpyrrolidone)" by C. A. Oksanen and G. Zograf, Vol. 7, pp. 654-657 (1990), a set of data at  $-20^{\circ}\text{C}$  was inadvertently omitted from Table II on page 656. The line should read:  $T(^{\circ}\text{C}) -20$ ;  $T(\text{K}) 253$ ;  $W_m(\text{g/g}) 0.175$ ;  $W(T_g = T) 0.550$ ;  $W(T_g = T)/W_m 3.1$ .

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