

## BOOK REVIEW

**Microbially influenced corrosion of materials: scientific and engineering aspects** (1996), E. Heitz, H.-C. Flemming, W. Sand (eds.) Springer-Verlag, Berlin, Heidelberg, New York; Price: 168.00 DM

This book embraces a scientific area where microbiology, electrochemistry, solid state chemistry and physics, to name only the major disciplines, meet. This aspect alone is fascinating, and the importance of microbially influenced corrosion in everyday life is quite tremendous. There is certainly a great need for a monograph which brings together the complex orchestration of traditionally well-separated research fields in an attempt to analyze real-world problems. The present monograph is the extended and updated compendium of contributions which were presented at a conference in Lahnstein, Germany, in 1993. But, unlike so many other conference proceedings, this is a lucid book with interrelated chapters. Obviously, the editors did much more than simply collect the individual chapters together. This is a true monograph, which will be useful for many years to come. It is subdivided into five parts with a total of 34 contributions. The book also makes a surprisingly homogenous impression, with almost no repetitions, despite the 49 authors. The first part is devoted to the fundamentals, including economic aspects, microbial, electrochemical and chemical mechanisms, biofouling, mathematical modeling, corrosion protection and biocides. In part 2, some "Advanced Methods" of analysis are discussed. The discussion of attenuated

total reflection and diffuse reflection spectroscopy is confined to the absolute basics, including some oversimplification regarding the Kubelka-Munk function. The strength of this chapter clearly lies in its access to original literature. The two chapters on the simulation of microbial attack, dealing with the simulation and control of microbially influenced corrosion, are extremely comprehensive, as both offer a plethora of experimental details. Part 3 contains case histories of microbially influenced metal corrosion, whereas part 4 gives case histories of the corrosion of inorganic non-metallic materials. In part 5, the microbially influenced corrosion of organic materials is discussed. The last part comprises two small chapters on technological aspects. While this book is undoubtedly an excellent compilation of present knowledge for the specialist working in the field of microbially influenced corrosion, it is perhaps of much greater value to the many materials scientists, corrosion scientists, electrochemists and engineers who may not yet have realized the importance of the "biological factor" in corrosion. Lest we all forget about this omnipresent activity of microbes, a reading of this volume can only be warmly recommended. It is not difficult to foresee a promising future for this multidisciplinary research, with respect both to its fundamental findings and to its importance for future technology.

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