

# Preface

Hydrometallurgy is concerned with methods of producing metals, and some compounds, by reactions which take place in water or organic solvents. Until about 1950 commercial hydrometallurgical practice was confined to the recovery of relatively few metals, but since then the situation has changed dramatically. The factors which have contributed most towards this are the growth of the uranium industry, the acceptance of solvent extraction as a process suitable for industrial use on a large scale, the development of techniques of leaching and reduction at temperatures up to 240°C at moderate pressures, and the demand for numerous less-common metals and other elements.

During the same period, since 1950, the application of chemical thermodynamics to pyrometallurgical methods of metal extraction, particularly in relation to the accumulation of data on slag-metal equilibria, caused fundamental changes in that field of technology also. As a consequence of these changes in all areas of extractive metallurgy it became necessary to give graduates a much deeper knowledge of the fundamental, scientific basis of their speciality than had been necessary previously.

After graduating in chemistry, spending three years in industry on war work and six years as a university lecturer in inorganic chemistry, I joined the Mining Department of Imperial College in 1952 to teach the chemical aspects of mineral processing. As hydrometallurgical processes became more important it became clear that the technology would be more appropriately taught in the Metallurgy Department where the teaching of extractive metallurgy was based firmly on physical chemistry. I therefore transferred to Professor F.D. Richardson's section of that department in 1960.

In order to support my lecture courses I required a textbook and wrote “The Chemistry of Hydrometallurgical Processes,” which was published in 1966. This book is the successor to that and is concerned with the application of modern experimental methods and chemical science to the development of hydrometallurgical processes. Numerous papers from the literature are discussed and in some cases the experimental procedures are described. Since it is felt that students should not believe that everything published in the literature is correct some critical discussion is included.

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