Hydrometallurgy '94


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Foreword

'Hydrometallurgy '94' is the fourth in the series of international conferences on hydrometallurgy that started in 1975 in Manchester. The preceding two conferences in the series, held in 1981 and 1987, respectively, were organized by the Solvent Extraction and Ion Exchange Group of the Society of Chemical Industry (SCI); this group also initiated the organization of 'Hydrometallurgy '94'. Following preliminary discussions about the scope of the conference by the SX–IX Group committee some two and a half years ago, however, it was soon concluded that to cover adequately the current field of hydrometallurgy and its associated disciplines it would be necessary to broaden the scope of the subject matter compared with the earlier conferences. Additionally, owing to an overlap of interests in the field of hydrometallurgy, it was felt appropriate to approach the Institution of Mining and Metallurgy (IMM) with a proposal for joint organization of the conference. IMM responded swiftly and positively to the suggestion and a committee that comprised members of both bodies was assembled to begin the task of organizing a meeting that would equal and, it was hoped, exceed the high standards that had been set by previous 'Hydrometallurgy' conferences.

Since the 'Earth Summit' in Rio the concept of sustainable development has been much in vogue. The associated ideas of cleaner technology, recycling and waste minimization have particular relevance to the extraction and processing of metals and other mineral products. The scientific principles of inorganic and physical chemistry on which are based most of the techniques and processes that are used in hydrometallurgy are precisely those which have to be employed to clean up the excesses of the past, to treat the effluents of today and to design the cleaner processes of the future. Thus, the separation of ionic species in solution by selective precipitation, ion exchange or solvent extraction—techniques that are very familiar to the hydrometallurgist—can be readily adapted to the treatment of industrial effluents and other waste waters containing toxic metals and other undesirable solutes. The thermodynamic principles that are used to measure and quantify the relative stabilities and instabilities of phases, solid, liquid and gaseous, and which, for the hydrometallurgist, are most visibly embodied in the ubiquitous
Eh–pH diagrams, are just those on which judgements have to be based about the environmental compatibility and stability of process wastes destined for long-term disposal.

Thus, it seemed to the Organizing Committee to be entirely appropriate to try to reflect the broad applicability of the principles and processes of the discipline by giving 'Hydrometallurgy '94' the subtitle, 'Environmentally Sustainable Technology'. The first circular and initial publicity, in which these ideas were put forward, seem to have struck a chord with workers in the field, as they resulted in well in excess of 150 abstracts being submitted for consideration. The Organizing Committee, though very gratified by this excellent response, was then faced with a dilemma: 'Hydrometallurgy' conferences have traditionally been run in single session so that all delegates could attend the whole conference. This format, however, severely restricts the number of papers that can be accommodated. The alternative—to go to parallel or multiple sessions to increase the number of papers presented—would fragment the audience and lose the intimacy and solidarity of interest that have characterized previous conferences in the series.

Eventually, a compromise was reached: the major part of the conference would retain the single-session format, but there would be some parallel oral sessions, plus a major poster paper session, in order to increase the number of papers that could be accepted. In spite of these changes, the Organizing Committee had the unenviable task of selecting for eventual presentation at the conference no more than half of the abstracts submitted. The results of this process are contained in this book, comprising 78 papers by authors from 30 countries, which we believe presents a comprehensive picture of the current state-of-the-art and future trends in the technology of hydrometallurgy and its rapidly expanding role in the field of environmental engineering.

For their help in bringing all this to fruition I am very grateful to my colleagues on the Organizing Committee here in London for their hard work, particularly in refereeing the papers. The members of the overseas advisory board have also made an important contribution to the event by soliciting support and providing publicity for the conference in their own countries or regions.
'Hydrometallurgy '94' is the first major conference for which the IMM and the SCI have collaborated in joint sponsorship. The division of responsibilities between the two Conference offices was clearly defined by agreement at the outset, IMM taking responsibility for the editing, refereeing and production of the proceedings, whereas SCI is dealing with the organization and management of the conference itself. To date, this arrangement has worked extremely smoothly and I wish to pay tribute to the dedicated efforts of the staff of both organizations. This experience augurs well for future collaboration between SCI and IMM, which have a number of areas of common interest.

Another major difference between 'Hydrometallurgy '94' and previous meetings in the series is the change of venue to Cambridge. We hope that, in choosing Churchill College, we have provided a setting of tranquillity that will enable delegates to obtain maximum benefits from the high quality of the papers that are being presented and from the company of their colleagues from all over the world. The picturesque town of Cambridge provides a wide choice of historic settings for the social events, which we hope will help to make 'Hydrometallurgy '94' a memorable event.

Finally, I wish to record two important votes of thanks from the Organizing Committee: first, to the sponsoring companies, listed elsewhere in this volume, whose generous donations have enabled us to provide first-class social events while still keeping the registration fees to reasonable levels; and, second, to all authors for their contributions to this volume and to the conference—your work has made ours worthwhile.

Dr. A. J. Monhemius  
Chairman, Organizing Committee  
London, April, 1994
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