

The Hydrometallurgy Of Copper

Hydroxyoximes and Copper Hydrometallurgy CRC Press

"This book provides a college-level overview of chemical processing of metals in water-based solutions, in the field that is known as hydrometallurgy"--

This two-volume set provides a full account of hydrometallurgy. Filled with illustrations and tables, this work covers the flow of source material from the mined or concentrate state to the finished product. It also highlights ion exchange, carbon adsorption and solvent extraction processes for solution purification and concentration. The extensive reference list-over 850-makes this set a valuable resource for extraction and process metallurgists, researchers, and practitioners.

This historic book may have numerous typos and missing text. Purchasers can usually download a free scanned copy of the original book (without typos) from the publisher. Not indexed. Not illustrated. 1912 edition. Excerpt: ...step. The production of ferric chloride at this point is advantageous in that it dissolves copper oxide, copper sulphide or metallic copper, which remained unaffected by the roasting, producing copper chloride, and this ferricchloride also maintains the copper chloride in the cupric condition. The gold and silver in the ore are brought into solution by converting all the copper into cupric chloride and then adding a small amount of chlorine, chlorous, or chloric compounds. The chlorides of silver and gold being soluble in calcium chloride solutions may afterward be precipitated with the copper and subsequently separated. After leaving the reaction drum the mass of gangue, solution, and precipitates is subjected to filtration. The solid matter forms a cake which consists of the gangue in the ore except a small amount of iron and alumina which have been taken into solution and the calcium sulphate precipitate already mentioned. The solution comprises a carrier in which has been dissolved the metals to be recovered, a small amount of iron and alumina and any zinc which may have been in the ore; the arsenic will have been separated by filtration, as it has been rendered insoluble. The solution is then subjected if necessary to a further oxidizing operation in order to be sure that the metals are all combined at their highest valency. The solution is then in condition for treatment for the separation of the dissolved metals. The precipitation of iron and alumina may be made by cupric oxide, hydrate or calcium carbonate, and as this precipitate will carry some copper it is returned to the amphidizer, or roasting furnace, after having been removed from the solution by filtration. In the amphidizer the iron and alumina in the precipitate are...

Hydrometallurgy is a field of chemical technology concerned with the production of metals from their ores and secondary sources. Modern hydrometallurgy began with the need to obtain uranium in the 1940s and extended into new areas with the development of pressure hydrometallurgy in the mid-1950s and acceptance of solvent extraction as an industrial scale process for copper production in the late 1960s to early 1970s. With the introduction of new processes for many metals, the present stage of development of hydrometallurgy has come to maturity and a survey of the current state of the field is timely. This book is derived from the

lectures on the principles on which hydrometallurgical processes are based, given as part of the undergraduate and MSc courses in hydrometallurgy which Professor A R Burkin gave from 1961 until he retired in 1988. Professor Burkin's earlier book, *The Chemistry of Hydrometallurgical Processes*, was regarded as the major work in the field. This is his long awaited new textbook./a

This book is concerned with the theoretical principles of hydrometallurgical processes and engineering aspects. The hydrometallurgical processes of production of copper are discussed and leaching of chalcopyrite as the main sulphide mineral of copper processed in industry is used as an example. The book is suitable as a university textbook for students of metallurgy. Examines the different techniques involved Discusses the production of specific metals using hydrometallurgical processes Looks at the future of hydrometallurgy

Hydroxyoximes and Copper Hydrometallurgy provides a current examination of what is known regarding hydroxyoxime extractants, the chemistry and physicochemistry of extraction, and the potential of applying hydroxyoximes for extraction of copper and other metals in industrial processes. Topics addressed include the development of the hydrometallurgical process, methods of synthesis and structural characteristics, extraction properties, losses of active substances and problems associated with environmental pollution, the potential of metal extraction and separation with hydroxyoximes, methods of extraction and stripping that can improve metal separation and recovery, the applications of hydroxyoximes in various membrane processes, and industrial processes and equipment used for processing oxide ores and tailing. The book will benefit metallurgists, hydrometallurgists, analytical and physical chemists, and researchers in mining industries and solvent extraction.

The mineral resources of the industrialized countries, especially the member nations of the North Atlantic Treaty Organization, are being depleted at such a rate that more and more of these countries are beginning to depend on ore imported from other countries. To sustain the economic and strategic well-being of these member countries, it becomes imperative that a program of developing and exploiting other non-conventional mineral resources and a conservation program where metal values from waste dumps and scrap metals and alloys are recycled must be initiated and implemented. In order to meet this challenge, new processes and technology must be available for consideration in the design and operation of the new plants. One of the possible routes of extracting the metals from their ores, especially for multimetal complex ores and very low grade ores, is by hydrometallurgical processing. The hydrometallurgical route of metal recovery where dissolution (leaching), separation and concentration (ion exchange, solvent extraction, and membrane separation) and reduction to metal (cementation, precipitation by gaseous reduction, and electrolysis) is carried out at near ambient temperature is becoming more competitive with the conventional high temperature processes used in the smelting of metals from high grade and beneficiated ores.

The hydrometallurgical papers of Volume IV highlight optimization efforts in solvent extraction/electrowinning operations in North and South America. Biohydrometallurgy, for example, not only takes a key role in copper recovery in many leach operations but offers a new role in cost-effective environmental remediation. The discussions of several approaches to the treatment of copper sulfide concentrates emphasize the high level of interest in finding alternative means of recovering copper and precious metals and avoiding many of the costs and impurity issues associated with the conventional processing.

Proceedings of a symposium sponsored by the Hydrometallurgy and Electrometallurgy Committee and the Materials Characterization Committee of the Extraction and Processing Division of TMS (The Minerals, Metals & Materials Society) Held during the TMS 2012 Annual Meeting & Exhibition Orlando, Florida, USA March 11-15, 2012

This work has been selected by scholars as being culturally important and is part of the knowledge base of civilization as we know it. This work is in the public domain in the United

States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. To ensure a quality reading experience, this work has been proofread and republished using a format that seamlessly blends the original graphical elements with text in an easy-to-read typeface. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.

Excerpt from The Hydrometallurgy of Copper, Vol. 1 The hydrometallurgy of copper differs from the hydrometallurgy of gold and silver largely on account of the greater percentage Of material recovered. For this reason the discussion of the precipitation plays an important part. The commercial success of any particular process Will frequently depend on the nature of the precipitant and the cost of precipitation. The book is the result of notes, covering a long period of time, from various sources and from my own experimental work. It is intended, in the text, to give full credit for the various sources of information. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

Rev. ed. of: Extractive metallurgy of copper / A.K. Biswas and W.G. Davenport. 1994. 3rd ed.

This work has been selected by scholars as being culturally important, and is part of the knowledge base of civilization as we know it. This work was reproduced from the original artifact, and remains as true to the original work as possible. Therefore, you will see the original copyright references, library stamps (as most of these works have been housed in our most important libraries around the world), and other notations in the work. This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. As a reproduction of a historical artifact, this work may contain missing or blurred pages, poor pictures, errant marks, etc. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.

Hydrometallurgy has become increasingly important in the extraction of metals, particularly for treating lean and complex ores. Often, the treatment of hydrometallurgy is brief in extraction metallurgy texts - this volume seeks to fill the gap in the literature by focusing solely on all aspects of the aqueous processing of metals. The book brings together the proceedings of many symposia, seminars and conferences conducted on the topic.

This is a reproduction of a book published before 1923. This book may have occasional imperfections such as missing or blurred pages, poor pictures, errant

marks, etc. that were either part of the original artifact, or were introduced by the scanning process. We believe this work is culturally important, and despite the imperfections, have elected to bring it back into print as part of our continuing commitment to the preservation of printed works worldwide. We appreciate your understanding of the imperfections in the preservation process, and hope you enjoy this valuable book.

[Copyright: 69bc231e95d75845d75499599a4a082b](#)