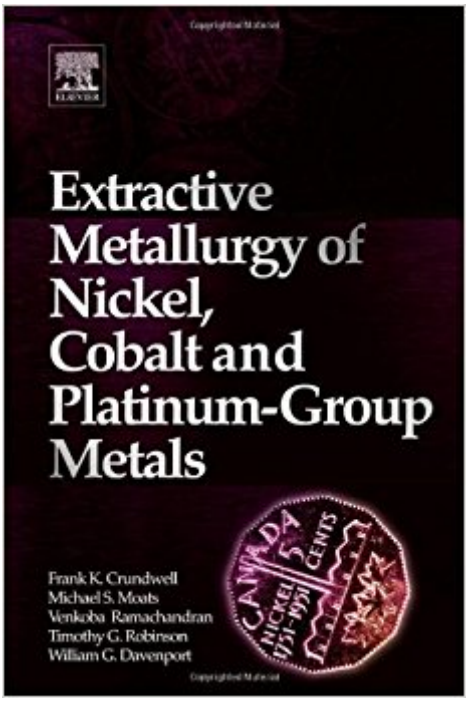
Extractive Metallurgy Of Nickel, Cobalt And Platinum Group Metals



Synopsis

This book describes and explains the methods by which three related ores and recyclablesÂ are made into high purity metals and chemicals, for materials processing. It focuses on present day processes and future developments rather than historical processes. Nickel, cobalt and platinum group metalsÂ are key elements for materials processing. They occur together in one book because theyÂ (i) map together on the periodic table (ii) occur together in many ores and (iii) are natural partners for further materials processing and materials manufacturing.Â They all are, for example, important catalysts â “ with platinum group metals being especially important for reducing car and truck emissions. Stainless steels and CoNiFe airplane engine super alloys are examples of practical usage. The product emphasises a sequential, building-block approach to the subject gained through the authorâ ™s previous writings (particularly Extractive Metallurgy of Copper in four editions) and extensive experience. Due to the multiple metals involved and because each metal originates in several types of ore â “ e.g. tropical ores and arctic ores thisÂ necessitates aÂ multi-contributor work drawing from multiple networks and both engineering and science.Synthesizes detailed review of the fundamental chemistry and physics of extractive metallurgy with practical lessons from industrial consultancies at the leading international plantsDiscusses Nickel, Cobalt and Platinum Group Metals for the first time in one bookReviews extractionÂ of multiple metals from the same tropical or arctic oreIndustrial, international and multidisciplinary focus on current standards of production supports best practice use of industrial resources

Book Information

Hardcover: 622 pages

Publisher: Elsevier; 1 edition (October 7, 2011)

Language: English

ISBN-10: 0080968090

ISBN-13: 978-0080968094

Product Dimensions: 6 x 1.3 x 9 inches

Shipping Weight: 2.4 pounds

Average Customer Review: 5.0 out of 5 stars 1 customer review

Best Sellers Rank: #1,312,353 in Books (See Top 100 in Books) #104 inÂ Books > Engineering & Transportation > Engineering > Materials & Material Science > Extraction & Processing #325 inÂ Books > Engineering & Transportation > Engineering > Materials & Material Science >

Metallurgy #1099 inÂ Books > Science & Math > Chemistry > Organic

Customer Reviews

"The strength of the book lies in the number of Tables comparing production details in different smelters and refineries around the world and the list of references at the end of each chapter. The book also includes many operating details for furnaces and other equipment as well as analyses of materials handled. This information must be considered as authoritative since the authors mention that they visited many plants and collected data on site... The book is a welcome addition to the metallurgical library and any one involved in the nickel industry must be aware of this book."--MEIBlog "A team of specialists from various companies and universities trace the extraction and processing of the three metals from ore in the ground to high-purity metals and chemicals. Nickel, cobalt, and platinum-group metals often occur together, are extracted together, and have similar properties. The topics discussed include smelting laterite concentrates to sulfide matte, extracting nickel and cobalt from sulfide ores, the slow cooling and solidification of converter matte, extracting cobalt from nickel laterite and sulfide ores, and smelting and converting sulfide concentrates containing platinum-group metals."--Reference and Research News, October 2012

I have been on the editorial board of the journal â œHydrometallurgy” and been an assistant editor.I lectured hydrometallurgy for ten years while at the University of the Witwatersrand, Johannesburg.I have numerous publications in the fields that make up hydrometallurgy - leaching, electrometallurgy, electrochemistry, bacterial leaching.I have worked in the field for nearly thirty years. I have run a professional consultancy working in the field of hydrometallurgy for the last ten years.Professor William George Davenport is a graduate of the University of British Columbia and the Royal School of Mines, London. Prior to his academic career he worked with the Linde Division of Union Carbide in Tonawanda, New York. He spent a combined 43 years of teaching at McGill University and the University of Arizona. His Union Carbide days are recounted in the book Iron Blast Furnace, Analysis, Control and Optimization (English, Chinese, Japanese, Russian and Spanish editions). During the early years of his academic career he spent his summers working in many of Noranda Mines Companyâ ™s metallurgical plants, which led quickly to the book Extractive Metallurgy of Copper. This book has gone into five English language editions (with several printings) and Chinese, Farsi and Spanish language editions. He also had the good fortune to work in Phelps Dodgeâ ™s Playas flash smelter soon after coming to the University of Arizona. This experience contributed to the book Flash Smelting, with two English language editions and a Russian language

edition and eventually to the book Sulfuric Acid Manufacture (2006), 2nd edition 2013. In 2013 co-authored Extractive Metallurgy of Nickel, Cobalt and Platinum Group Metals, which took him to all the continents except Antarctica. He and four co-authors are just finishing up the book Rare Earths: Science, Technology, Production and Use, which has taken him around the United States, Canada and France, visiting rare earth mines, smelters, manufacturing plants, laboratories and recycling facilities. Professor Davenportâ ™s teaching has centered on ferrous and non-ferrous extractive metallurgy. He has visited (and continues to visit) about 10 metallurgical plants per year around the world to determine the relationships between theory and industrial practice. He has also taught plant design and economics throughout his career and has found this aspect of his work particularly rewarding. The delight of his life at the university has, however, always been academic advising of students on a one-on-one basis. Professor Davenport is a Fellow (and life member) of the Canadian Institute of Mining, Metallurgy and Petroleum and a twenty-five year member of the (U.S.) Society of Mining, Metallurgy and Exploration. He is recipient of the CIM Alcan Award, the TMS Extractive Metallurgy Lecture Award, the AusIMM Sir George Fisher Award, the AIME Mineral Industry Education Award, the American Mining Hall of Fame Medal of Merit and the SME Milton E. Wadsworth award. In September 2014 he will be honored by the Conference of Metallurgistsâ ™ Bill Davenport Honorary Symposium in Vancouver, British Columbia (his home town).

So much useful information packed into a book. If you’re looking for a book on the extractive metallurgy of nickel, cobalt or platinum group metals, this is the book for you.If you don’t know anything about metallurgy, nickel, cobalt or platinum, you probably don’t want to buy this book.

Extractive Metallurgy of Nickel, Cobalt and Platinum Group Metals Extractive Metallurgy of Tin (Process metallurgy) The Periodic Table of Elements - Alkali Metals, Alkaline Earth Metals and Transition Metals | Children’s Chemistry Book Extractive Metallurgy of Rare Earths, Second Edition Welding Metallurgy and Weldability of Nickel-Base Alloys Led Zeppelin -- Physical Graffiti Platinum Bass Guitar: Authentic Bass TAB (Alfred’s Platinum Album Editions) The Platinum Printing Workshop: Platinum/Palladium Printing Made Easy Cole Porter -- The Platinum Collection: The Definitive Songbook (Piano/Vocal/Chords) (Faber Edition: Platinum Collection) Tupac Shakur: Multi-platinum Rapper: Multi-Platinum Rapper (Lives Cut Short) Led Zeppelin -- Houses of the Holy Platinum Bass Guitar: Authentic Bass TAB (Alfred’s Platinum Album Editions) Led Zeppelin -- Presence Platinum Guitar: Authentic Guitar TAB (Alfred’s Platinum Album Editions) Precious Metals Investing for Beginners: The Quick Guide to Platinum and Palladium Alfred’s Group Piano for Adults

Student Book 1 (Second Edition): An Innovative Method Enhanced With Audio and Midi Files for Practice and Performance (Alfred's Group Piano for Adults) Group Dynamics in Occupational Therapy: The Theoretical Basis and Practice Application of Group Intervention Joining Together: Group Theory and Group Skills (11th Edition) Curriculum-Based Motivation Group: A Five Session Motivational Interviewing Group Intervention Alfred's Basic Group Piano Course, Bk 1: A Course Designed for Group Instruction Using Acoustic or Electronic Instruments (Alfred's Basic Piano Library) Wild at Heart: A Band of Brothers Small Group Participant's Guide (Small Group Resources) The Genesis of the Abstract Group Concept: A Contribution to the History of the Origin of Abstract Group Theory (Dover Books on Mathematics) On Someone Else's Nickel: A Life in Television, Sports, and Travel