

In the following section the basic principles and fundamentals of hydrometallurgy are explained (Osseo-Asare & Miller, 1982:6). 2.1.1 Hydrometallurgy versus Pyrometallurgy. Whether a metal is extracted in a water environment or at high temperatures is, in principle, immaterial. According to Bautista (1984:v) the hydrometallurgical route for the recovery of a metal, where dissolution (leaching), separation, concentration and reduction to the metal is. When the chemical processing of metals is conducted in an aqueous environment, the technology employed is termed hydrometallurgy, which involves three distinct stages (Woollacott & Eric, 1994:321): > The metal of interest must first be transferred from the solid feed material (ores, concentrates, etc.) into an aqueous solution. The book is based mainly on the fundamental and cited literature. Although basic knowledge of inorganic and physical chemistry is essential, together with the knowledge of the theory of metallurgical processes, the book also presents the main concepts to such an extent that it can be used as a textbook for students of all stages of metallurgy and related disciplines. Hydrometallurgy Table 1.1. Comparison of some characteristics of pyrometallurgical and hydrometallurgical processes. Processes. Pyrometallurgy. Keywords: titanomagnetite ores; hydrometallurgical process; leaching; titanium-vanadium concentrates; iron concentrates; Fe/Ti ratio titanomagnetite ores; hydrometallurgical process; leaching; titanium-vanadium concentrates; iron concentrates; Fe/Ti ratio. Figure 1. Hydrometallurgical Processing Technology of Titanomagnetite Ores. Minerals. 2018; 8(1):2. Chicago/Turabian Style. Sachkov, Victor I.; Nefedov, Roman A.; Orlov, Vladislav V.; Medvedev, Rodion O.; Sachkova, Anna S. 2018. "Hydrometallurgical Processing Technology of Titanomagnetite Ores." Minerals 8, no. 1: 2. Find Other Styles. The book, Fundamentals of Metallurgy is a compilation of various aspects of metallurgy in different chapters, written by the most eminent scientists in the world today. These participants, despite their other commitments, have devoted a great deal of time and energy for their contributions to make this book a success. Interfacial reaction kinetics, mass transport in the molten or gaseous phase becomes important. The production of metals and alloys almost always involves solidification, the rate of which is often controlled by the rate of heat transfer through the mold. 4 Fundamentals of metallurgy. 1.2 Reactions involving gases and solids.