

## ABSTRAK

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Program Studi : Fisika

Judul : Ekstraksi Unsur Anorganik Khususnya Nikel Dari Bijih Mineral Alami Morowali Utara Melalui Metode Elektrodeposisi Dengan Asam Sulfat ( $H_2SO_4$ ).

Indonesia memiliki cadangan nikel laterit yang besar, salah satunya di Kabupaten Morowali Utara, Sulawesi Tengah. Namun, pemanfaatannya masih terkendala oleh rendahnya kadar logam nikel dan dominasi unsur pengotor. Penelitian ini bertujuan untuk mengkaji ekstraksi bijih mineral Morowali Utara melalui metode elektrodeposisi. Metode penelitian meliputi preparasi sampel, pelindian dengan larutan asam sulfat ( $H_2SO_4$ ) pH 2 selama 72 jam, filtrasi, dan elektrodeposisi. Karakterisasi dilakukan menggunakan *X-Ray Fluorescence (XRF)* dan *X-Ray Diffraction (XRD)*. Hasil penelitian menunjukkan lapisan endapan terbentuk, namun masih tipis dan nikel tidak teridentifikasi sebagai fase kristal murni.

Kata kunci :

Morowali Utara, Nikel, Ekstraksi, Elektrodeposisi, XRF, XRD

## ABSTRACT

Name : Amirah Wardah

Study Program: Physics

Title : Extraction of Inorganic Elements Especially Nickel from Natural Mineral Ore in North Morowali Using Electrodeposition Method with Sulfuric Acid ( $H_2SO_4$ ).

Indonesia has large laterite nickel reserves, one of which is located in North Morowali Regency, Central Sulawesi. However, its utilization is still constrained by the low nickel content and the dominance of impurity elements. This study aims to investigate the extraction of mineral ore from North Morowali using the electrodeposition method. The research methods include sample preparation, leaching using sulfuric acid ( $H_2SO_4$ ) at pH 2 for 72 hours, filtration, and electrodeposition. Characterization was performed using *X-Ray Fluorescence* (XRF) and *X-Ray Diffraction* (XRD). The results indicate that a deposit layer was formed, although it remained thin, and nickel was not identified as a pure crystalline phase.

Keywords:

North Morowali, Nickel, Extraction, Electrodeposition, XRF, XRD