

MME 409: Non-Ferrous Extraction and Refining

Outline of major competing routes of metal production from their ores. Limitations and factors influencing the choice of production and refining process i.e. the scientific and technological analysis of extraction processes. Ore treatments techniques (roasting, pressure oxidation, bio-oxidation). Thermodynamics and kinetics of hydrometallurgical processes; leaching. Cementation, precipitation, ion exchange and solvent extraction processes. Principles of electrometallurgy (electrowinning and electrorefining). Fire refining. Extraction and refining of most common commercial metals such as aluminium, copper, lead, zinc, nickel, tin, gold etc