African Wood Science and Technology (Forestry)

Chemical Engineering Processes for Phosphate Production Utilising Local Resources in Morocco

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Abstract

Phosphate resources are crucial for agricultural productivity in Morocco, yet traditional extraction methods have environmental concerns. A novel leaching process was developed using a combination of sulfuric acid and lime to maximise phosphoric acid yield from Moroccan phosphate ores. Process optimization employed statistical design of experiments (DOE) with robust standard errors. The optimised leaching process achieved an average phosphoric acid recovery rate of 95%, demonstrating significant improvement over conventional methods. This study successfully demonstrated the feasibility and efficiency of a new phosphate production method. Further field trials are recommended to validate these findings in real-world conditions. The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Morocco, Leaching, Phosphate Production, Solvent Extraction, Hydrometallurgy, Recovery Processes, Catalysis*

ABSTRACT-ONLY PUBLICATION

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