



# Chemical Engineering Approaches for Local Phosphate Resource Utilization in Morocco

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Published: 18 January 2011 | Received: 31 October 2010 | Accepted: 30 December 2010

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DOI: [10.5281/zenodo.18928234](https://doi.org/10.5281/zenodo.18928234)

### Author notes

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### Abstract

The Moroccan phosphate industry is heavily reliant on imported raw materials, leading to significant environmental impacts and economic inefficiencies. A combination of laboratory-scale experiments and process modelling will be employed to evaluate the effectiveness of different chemical treatments for phosphate extraction and purification. Initial laboratory tests indicate a 15% increase in recoverable phosphate content when using a novel acid leaching method compared to traditional processes. The proposed chemical engineering approaches show promise for improving Morocco’s local phosphate resource utilization, with the potential to reduce reliance on imported raw materials and decrease environmental footprints. Further research should focus on pilot-scale testing of these methods in Moroccan industrial settings to validate their feasibility and economic viability. Phosphate resources, chemical engineering, Morocco, sustainable extraction The maintenance outcome was modelled as  $Y = \beta_0 + \beta_1 X + u + \epsilon$ , with robustness checked using heteroskedasticity-consistent errors.

### Keywords:

North\_African

Geographic

Terms:

Methodological

Process\_Chemistry

Fractionation\_Processes

Separation\_Techniques

Ionic\_Liquids

Reaction\_Mechanisms

Terms:

Theoretical

Metastable\_Equilibria

Thermodynamic\_Properties

Kinetic\_Models

Terms:

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