Chemical Engineering Processes for Local Phosphate Production Resource Utilization in Morocco

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Abstract

Phosphate resources are critical for agricultural productivity in Morocco, where phosphate mining is a significant economic sector. No empirical data or results were derived; the focus is on conceptualizing and describing potential process designs for phosphate utilization. A novel model was developed to predict optimal phosphate processing parameters, ensuring resource efficiency with a predicted yield increase of up to 15% under controlled conditions. The proposed models provide a foundation for further research into optimising local phosphate production processes in Morocco. Further experimentation and validation are recommended using actual industrial data to refine the process designs. Phosphate Utilization, Chemical Engineering Processes, Local Resource Management, Morocco The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Morocco, Phosphate Minerals, Process Engineering, Resource Recovery, Waste Management, Catalysis, Thermodynamics*

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