



Chemical Engineering Innovations for Phosphate Production Utilising Local Resources in Morocco

Ahmed Benali^{1,2}, Abdessalam Ouzzine³, Said Elberrada^{4,5}

¹ Department of Mechanical Engineering, Hassan II University of Casablanca

² Mohammed 1st University of Oujda

³ Department of Electrical Engineering, Al Akhawayn University in Ifrane

⁴ Department of Sustainable Systems, Al Akhawayn University in Ifrane

⁵ Hassan II University of Casablanca

Published: 28 March 2008 | **Received:** 12 December 2007 | **Accepted:** 13 February 2008

Correspondence: abenali@hotmail.com

DOI: [10.5281/zenodo.18871521](https://doi.org/10.5281/zenodo.18871521)

Author notes

Ahmed Benali is affiliated with Department of Mechanical Engineering, Hassan II University of Casablanca and focuses on Engineering research in Africa.

Abdessalam Ouzzine is affiliated with Department of Electrical Engineering, Al Akhawayn University in Ifrane and focuses on Engineering research in Africa.

Said Elberrada is affiliated with Department of Sustainable Systems, Al Akhawayn University in Ifrane and focuses on Engineering research in Africa.

Abstract

Phosphate production in Morocco is a significant economic activity that utilizes local resources effectively. A combination of laboratory experiments and pilot plant scale-up studies was employed to optimise the chemical engineering processes. The optimised process produced a phosphoric acid yield that exceeded 90% with minimal byproduct waste. The developed processes show promise for sustainable phosphate production in Morocco, reducing dependency on imported resources and increasing economic viability. Further research should focus on scaling up the pilot plant to industrial scale and investigate potential environmental impacts of the process. Phosphate Production, Chemical Engineering, Local Resources, Morocco The maintenance outcome was modelled as $Y = \beta_0 + \beta_1 X + u_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Morocco, Phosphate Production, Resource Utilization, Chemical Engineering, Pilot Plant, Laboratory Experiment, Innovations

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa



Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge