PETROGRAPHIC STUDIES OF ROCK IN KWARA STATE POLYTECHNIC, ILORIN

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ND/23/MPE/FT/0094

SUBMITTED TO:

THE DEPARTMENT OF MINERALS AND PETROLEUM RESOURCES ENGINEERING TECHNOLOGY INSTITUTE OF TECHNOLOGY, KWARA STATE POLYTECHNIC, ILORIN IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF NATIONAL DIPLOMA (ND) IN MINERALS AND PETROLEUM RESOURCES ENGINEERING TECHNOLOGY

AUGUST, 2025

CERTIFICATION

This is to certify that this research project work PETROGRAPHIC STUDIES OF ROCKS IN KWARA STATE POLYTECHNIC, ILORIN was carried out by Sheriff ayinde KEHINDE with matric number ND/23/MPE/FT/0094, submitted to the Department of Minerals and Petroleum Resources Engineering Technology, Institute of Technology (IOT), Kwara State Polytechnic, Ilorin, in partial fulfilment of the Requirement of award of National Diploma (ND) in Minerals and Petroleum Resources Engineering Technology.

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Dedication

I am delighted to dedicate this project to Almighty GOD, the creator of all universe who gave me the grace and opportunity to complete my National Diploma program and this research, may His name be glorified.

Acknowledgements

I give all the glory and adoration to Almighty GOD, the beginning and the End, for his greatest protection and love given to me as a privilege to start and complete this research work.

I wholeheartedly extend my special thanks to my amiable supervisor Dr. Reuben Obaro for his professional guidance and support towards the success of this project. To my Head of department Dr. Olatunji and other lecturer in minerals and petroleum resources engineering technology department, and Kwara state polytechnic for availing me with their wealth of experience, may you all be reward abundantly.

My sincere appreciation also goes to my course mates who directl or indirectly affected my life in the progress of this work.

Abstract

This research explores the petrographic and mineralogical characteristics of rocks within the Kwara State Polytechnic campus in Ilorin, Nigeria. The study aimed to understand the mineral composition, textures, and formation processes of rocks found in the area, as well as assess their potential industrial applications. Samples of Migmatite Gneiss, Porphyritic Granite, and Biotite Granite were collected and analyzed using thin section petrography under a polarizing microscope.

Findings revealed that the rocks are rich in quartz, feldspar (plagioclase, orthoclase, microcline), biotite, hornblende, and muscovite. These minerals displayed key features such as twinning, pleochroism, and undulose extinction, indicating tectonic deformation and complex cooling histories. Geochemical results showed high silica content, along with alumino-silicate and ferromagnesian minerals.

The study concludes that these rocks are not only geologically significant but also hold economic value, particularly for construction and ceramic industries. The findings provide a better understanding of the local geology and support further exploration of mineral resources in the region.

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