

ISSN: 2327-4336

Volume 12, Number 2, February 2024



Journal of Geoscience and Environment Protection



ISSN: 2327-4336



<https://www.scirp.org/journal/gep>

Journal Editorial Board

ISSN 2327-4336 (Print) ISSN 2327-4344 (Online)

<https://www.scirp.org/journal/gep>

Editor-in-Chief

Prof. Valentine Udoh James

Clarion University of Pennsylvania, USA

Editorial Board

Prof. Sheikh D. Abubakar

Usmanu Danfodiyo University, Nigeria

Dr. Tapos Kumar Acharjee

Bangladesh Agricultural University, Bangladesh

Prof. Ayad M. Fadhil Al-Quraishi

Tishk International University, Iraq

Prof. Mokhles K. Azer

National Research Centre, Egypt

Prof. Raimundo Jiménez Ballesta

Universidad Autonoma de Madrid, Spain

Dr. Ali Darvishi Boloorani

University of Tehran, Iran

Dr. Mukesh Singh Boori

Samara University, Russia

Prof. Jianmin Chen

Fudan University, China

Prof. Elizabeth Gordon Colón

Central University of Venezuela, Venezuela

Prof. Mohamed Abdelhamid Dawoud

National Water Research Center, Egypt

Prof. Mohamed Ahmed El-Sadek

Nuclear Materials Authority, Exploration Division, Egypt

Prof. Akram Othman Esmail

Salahaddin University, Iraq

Dr. Silvério Manuel Domingues Figueiredo

Quinta do Contador-Estrada da Serra, Portuga

Prof. Peter G. Flood

University of New England, Australia

Prof. Yehia Yehia Hafez

King Abdulaziz University, Saudi Arabia

Prof. Benedict Ilozor

Eastern Michigan University, USA

Dr. Azizallah Izady

Sultan Qaboos University (SQU), Oman

Dr. Pathmakumara Jayasingha

University of Colombo, Sri Lanka

Prof. M. A. Khalifa

Menoufia University, Egypt

Dr. Juan Ma

Fayetteville State University, USA

Dr. Georges Martial Ndzana

University of Dschang, Cameroon

Dr. John Paul Odhiambo Obiero

University of Nairobi, Kenya

Prof. Reccab Manyala Ochieng

University of Zambia, Zambia

Prof. Martins Yusuf Otache

Federal University of Technology, Nigeria

Prof. Cheng Heng Pang

University of Nottingham Ningbo China, China

Prof. Orhan Polat

Dokuz Eylul University, Türkiye

Prof. Suresh Chand Rai

University of Delhi, India

Dr. Gireesh Raman

Intel Corporation, USA

Dr. Marcello Ruberti

University of Salento, Italy

Dr. Amirhomayoun Saffarzadeh

Kyushu University, Japan

Prof. V. I. Solomatin

Russian Academy of Nature Science, Russia

Dr. Mustafa Din Subari

Universiti Teknologi Malaysia, Malaysia

Dr. Samaneh Torbati

Urmia University, Iran

Dr. Kelestemur Gülüzar Tuna

Firat University, Türkiye

Dr. Rahul Verma

Botswana International University of Science and Technology, Botswana

Prof. Leiming Yin

Chinese Academy of Sciences, China

Dr. Xiaochun Zhang

Carnegie Institution for Science, USA

Prof. Qixing Zhou

Nankai University, China

Table of Contents

Volume 12 Number 2

February 2024

**Geochemical and Petrological Insights into the Neoproterozoic Moumba Metabasites:
Implications for Crustal Processes in the West Congo Belt (Republic of Congo)**

U. V. Matiaba-Bazika, N. L. Makamba, V. T. T. Bouénitéla, N. C. B. Tchiguina, T. Miyouna, F. Boudzoumou..... 1

**Impact of Dewatering on the Spatio-Temporal Distribution of Benthic
Macroinvertebrate Communities in the Okpara River, Benin**

S. T. Biaou, F. M. Gouissi, A. S. Y. Hounkpatin, Z. O. Piami, W. B. Yessoufou, S. O. Goura, N. M. Fassinou..... 30

Analysis of Changes of Extreme Temperature during June to August Season over Tanzania

J. R. Mbawala, H. X. Li, J. N. Zeng, D. M. Ndabagenga, A. Q. Tan, D. J. Beukes, P. M. Rafael, S. Ekwacu 44

**Effect of Forest Litter on the Regeneration of *Larix sibirica*: Insight from Aqueous Extract
and Litter Coverage**

S. C. Zhao, Q. Xu 57

**Participatory Land Rehabilitation Strategies in Angacha District, Kembata Zone,
Central Ethiopia Region**

E. Weldeamanuel, S. P. Cheng 71

**Mineralogy and Chemistry Characterization of the New Basaltic Intrusion
at Maasser El Chouf/Lebanon**

K. Tarawneh, N. Nemhe, A. Shaban, G. Fauor, G. Njeim 95

**Petrology and Geochemical Relationship of Birimian Gabbro-Diorite-Granodiorite Dykes
in Basaltic Rocks at Butre Area, SW Ghana**

V. Graham, G. M. Tetteh 107

Journal of Geoscience and Environment Protection (GEP)

Journal Information

SUBSCRIPTIONS

The *Journal of Geoscience and Environment Protection* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$39 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: sub@scirp.org

COPYRIGHT

Copyright and reuse rights for the front matter of the journal:

Copyright © 2024 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

Copyright for individual papers of the journal:

Copyright © 2024 by author(s) and Scientific Research Publishing Inc.

Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: gep@scirp.org



Call_for_Papers

Journal of Geoscience and Environment Protection (GEP)

ISSN 2327-4336 (Print) ISSN 2327-4344 (Online)

<https://www.scirp.org/journal/gep>

Journal of Geosciences and Environment Protection (GEP) is an international journal dedicated to the latest advancement of Geoscience and Environment Protection. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of Geoscience and Environment Protection. All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process.

Subject Coverage

This journal invites original research and review papers that address the following issues. Topics of interest include, but are not limited to:

Environmental Protection

- Air Pollution
- Chemical Pollution
- Climate Change
- Disasters Management
- Environmental Earth Sciences
- Environmental Geology and Rehabilitation
- Environmental Law and Policies
- Environmental Risk
- Global Environmental Protection Technology
- Global Warming
- Landfill Waste Management
- Mineral Processing, Waste Management and Recycling
- Nuclear Energy and Environmental Protection
- Pollution Control and Technologies
- Soil Environment and Soil Science in Other Disciplines
- Sustainability of Resources and Environment
- Waste Water Management and Aquaculture
- Water Engineering
- Water Resources Management and Water Quality

Geoscience

- BioGeomarkers and Their Significance for Astrogeology and Astrobiology
- Crystallography and Mineralogy
- Education and Capacity Building in Geosciences
- Endogenous, Exogenous Petrology and Geochemistry
- Energy and Mineral Deposits
- Geodynamics
- Geoethics
- Geographic Information Science
- Geological Collections and Museology
- Geophysics
- Hydrology and Hydrogeology
- International Partnership in Geosciences
- Medical and Forensic Geology
- Meteorites and Planetary Geology
- Natural Hazards
- Paleontology
- Statistics and Data Analysis in Geology
- Stratigraphy and Sedimentology

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the GEP.

Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

Website and E-Mail

<https://www.scirp.org/journal/gep>

E-mail: gep@scirp.org

What is SCIRP?

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

What is Open Access?

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Scientific
Research
Publishing**

Website: <https://www.scirp.org>

Subscription: sub@scirp.org

Advertisement: service@scirp.org