

Environmental Technology & Science Journal

Volume 16 Number 1

June 2025

Aim and Scope

The Environmental Technology and Science Journal (ETSJ) is devoted to the publication of papers which advance knowledge of practical and theoretical issues that daily plague our society. The aim of the journal is to provide an avenue for the dissemination of academic research findings from various disciplines of the environment, engineering, pure and applied sciences, arts and social sciences, which have materials that emphasize on environmental issues.

ETSJ Policy

Environmental Technology and Science Journal is a multidisciplinary Journal that is devoted to the publication of scholarly articles with the sole aim of becoming a flagship in built environment research internationally. Based on this, the editorial policy/implementation plan of the Editorial Committee Members is provided below as the basis for editorial decisions in order to improve the quality and visibility of the Journal.

1. The focus of the journal is to provide an avenue for the dissemination of academic research findings from various disciplines of the environment, engineering, pure and applied sciences, arts and social sciences which have materials that emphasize on environmental issues. To this end, all published papers in ETSJ are expected to be aligned with the focus of the Journal.
2. Previously published articles shall not be accepted. Manuscripts should not be under consideration elsewhere, hence, they shall be original. The Author/s should check the manuscript for any possible plagiarism using any software such as TurnItIn or any other software before submitting the manuscripts to ETSJ.
3. Any manuscript submitted to ETSJ after initial editorial review (for scope, contents and subjecting it to Turnitin software) shall be blind peer reviewed by two reviewers who in the opinion of the Editorial Secretary and Managing Editor are experts in the area of the manuscript submitted. In the event of a tie, a third reviewer shall be sought.
4. Both empirical and desktop manuscripts shall be accepted for review as long as they reflect the focus of ETSJ. Desktop manuscripts are expected to be well synthesised and arguments are to be presented logically.
5. The reports of the reviewed manuscripts are checked by the Editorial Secretary in order to ensure the relevance and quality of the reviews before sending them to the contributors.
6. The Managing Editor and the Editorial Secretary are to ensure that reviewers' comments are substantially complied with by the contributors when final accepted manuscripts are submitted. Contributors are to state in the prescribed form, how the corrections pointed out are addressed. Where a contributor disagrees with any of the reviewers, rebuttal is allowed which shall be reviewed by the Managing Editor and the Editorial Secretary.
7. The Editorial Secretary shall be duly informed of the addition or removal of contributor/s when any manuscript has been accepted for publication. Reason/s must be given to justify the addition or removal.
8. The Editorial Board shall meet twice in a year, that is, before the publication of each issue in June and December. Meetings shall also be called at other times.
9. Efforts shall be made to review manuscripts within four (4) weeks, however, the review process may take longer than four (4) weeks as there may be the need to re-assign the manuscripts to other reviewers.
10. ETSJ is open access that publishes both hard copy and online versions (<https://journal.futminna.edu.ng/index.php/etsj> and <https://www.ajol.info/index.php/etsj>) in June and December of every year.

11. Where the number of articles accepted is more than what could be published in any edition (in June or December), the accepted articles will be split into two (2) as issues 1 and 2 of that particular edition.
12. Where the number of articles accepted is not up to the required number of articles to be published, only the online version shall be published, and this shall be updated until the required number is obtained when the hard copy version shall be published.
13. The School of Environmental Technology, Federal University of Technology, Minna is the owner of ETSJ and therefore, determines the tenure of each Board Member.

Guide for Authors

Please read the guidelines and follow the instructions carefully; doing so will ensure that the publication of your manuscript is as rapid and efficient as possible. The Editorial Board reserves the right to return manuscripts without review that are not prepared in accordance with these guidelines.

1. Manuscripts should not be more than 15 pages of A4 paper size (including abstracts, tables, figures, references and appendices) typed in double line spacing and font size 12 points Times New Roman style. However, abstract, tables, figures and reference list are to be typed in single line spacing. Additional fee of two thousand (₦2000) Naira will be charged for every additional page in excess of 15 pages.
2. Each paper must be compiled in one column; all text should be left and right justified. The page settings to be 25cm (1 inch) each for the top, bottom, left and right margins of an A4 paper. Decimal numbering of all sections of the article is recommended (with the exception of the reference and acknowledgement section).
3. To ensure anonymity in the peer reviewing process, articles must be structured in such a way that the title of the paper, authors' names, address, and affiliation are written on the first page, followed by abstract and the body of the paper in that order.
4. Each article should contain an abstract of not more than 300 words. The abstract should be in the following format: Introduction; purpose of the study; method/s/methodology; major results; general conclusion; recommendation and implication of findings to practice.
5. Each article should contain between 5 to 7 key words (avoid use of phrases)
6. The body of the manuscript should be interrogated along the following format:
Introduction: It is expected that the following three (3) issues shall be brought to bear in this section. One, putting the study in context in terms of background; two, stating in clear terms the problem/s identified and three, highlighting the research gap in the subject area.

Literature Review: This has to do with synthesising the current and related studies in line with the extent of work carried out in that area of study.

Methodology/materials and methods: This should be explicit in order to make replication easier.

Results and Discussion: Apart from interpreting the results, robust discussion in relation to relevant literature has to be done in order to bring to the fore areas of convergence or divergence.

Conclusion: It is expected that based on the results obtained, inference has to be drawn which will form the basis for the recommendations/suggestions/way forward that will be espoused.

Reference list: The acceptable referencing style is the American Psychological Association (APA). The in-text citations should be as shown:

Parenthetical citations

One author (Jimoh, 2012)

Two authors (Ogunbode & Jimoh, 2020)

Three or more authors (Jimoh *et al.*, 2017)

Narrative citations

Jimoh (2012)

Ogunbode and Jimoh (2020)

Jimoh *et al.* (2017)

In a related development, the reference list should be as shown below:

Ogunbode, E.B, Makun, C.S, Ango, J.A, Hassan, I.O, Lawal, A.T. & Ibrahim S.M. (2021). Chloride Ingress Resistance of Rice Husk Ash Based Green Concrete Composites Containing Steel Fibres. *Environmental Technology & Science Journal*, 12(1), 65-73, <https://dx.doi.org/10.4314/etsj.v12i1.9>

Jimoh, R.A. & Adama, S.M. (2014). Assessment of preliminaries in relation to the total cost of renovation work in public schools in Abuja, Nigeria. *Proceedings of ICEC 2014-IX World Congress conference, Total Cost Management in Difficult Times*, organised by the Italian Association for Total Cost Management in Milan, 20th-22nd October 1-9

Jimoh, R.A (2014). Contribution of Co-operatives to Housing Provision: The Road Less Travelled in the Last 100 Years. In Y.A Sanusi, A.M Junaide, O.O Morenikeji, S.N. Zubairu, R.A. Jimoh & O.F. Adedayo (Eds.), *100 Years of Urbanisation in Nigeria* (pp. 219 – 236). School of Environmental Technology, Federal University of Technology, Minna

Oyewobi, L.O. (2014). *Modelling performance differentials in large construction organisations in South Africa*. Unpublished PhD thesis, University of Cape Town, Cape Town.

Kabir, B. (2021). *Construction management in a developing economy* (3rd ed.). Ahmadu Bello University Press

7. Use the SI (*Système Internationale*) units and symbols, while Unusual Characters and symbols should be explained in a list of nomenclatures
8. In cases where equations are part of the manuscript, Equation Editor should be used.
9. No indentation but paragraphs should be separated by a blank line. United Kingdom (UK) English should be used in the manuscript.
10. Figures, Tables and Graphs are to be placed at the appropriate place in the manuscript and not at the end of the paper
11. Acknowledgement is optional, except for researches being funded through research grant awards.
12. Author should avoid using header, footer and special page break within the manuscript.
13. The manuscript is to be sent via electronic mean to the journal email address: etsj@futminna.edu.ng for a blind peer review, which under normal circumstance will not exceed 4 weeks, after which the status of the article will be communicated to the Author(s)
14. Author(s) with positive review will be asked to effect corrections or revisions after which the camera-ready manuscript is to be emailed to etsj@futminna.edu.ng and to be accompanied by evidence of payment of publication fee.
15. The Editorial board is not responsible for the information or views expressed by the Author(s)
16. The copyright of this journal belongs exclusively to the Editorial Board of Environmental Technology and Science Journal. No part of the publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without prior permission of the School of Environmental Technology, Federal University of Technology, Minna-Nigeria or a licence permitting restricted copying.

Frequency of Publication

The journal is published twice a year in June and December

Subscription Details

The 2025 subscription rates for hardcopies of the journal including postage are:

Individual within Nigeria: ₦4,500 per copy and ₦2,000 for postage (depending on the destination)

Individual outside Nigeria including postage \$100

Institution within Nigeria: ₦8,000 per copy and ₦2,000 for postage (depending on the destination)

Institution outside Nigeria including postage: \$200

Correspondence

All correspondence should be addressed to

The Managing Editor

Environmental Technology & Science Journal

SET, FUT, Minna, Nigeria

Email: etsj@futminna.edu.ng

Phone: +234 805 170 3663, +234 803 653 4507

Published By

School of Environmental Technology, Federal University of Technology,
Minna-Nigeria

Managing Editor

Prof R. A. Jimoh

Department of Building,
Federal University of Technology,
Minna, Nigeria

Editorial Secretary I

Prof B. O. Ganiyu

Department of Quantity Surveying,
Federal University of Technology,
Minna, Nigeria
+234 803 626 9235

Editorial Secretary II

Dr E. B. Ogunbode

Department of Building,
Federal University of Technology,
Minna, Nigeria
+234 806 328 6122

Editorial Committee

Dr A. D. Adamu

Department of Quantity Surveying,
Federal University of Technology,
Minna, Nigeria

Prof I. C. Onuigbo

Department of Surveying &
Geoinformatics,
Federal University of Technology,
Minna, Nigeria

Prof O. A. Kemiki

Department of Estate Management
& Valuation,
Federal University of Technology,
Minna, Nigeria

Prof P. Ayuba

Department of Architecture,
Federal University of Technology,
Minna, Nigeria

Dr A. Kawu

Department of Urban & Regional
Planning,
Federal University of Technology,
Minna, Nigeria

Prof I. B. Muhammad

Department of Architecture,
Federal University of Technology,
Minna, Nigeria

Editorial Members outside FUT, Minna

Dr Monday Otali – University of Uyo, Uyo

Professor Timothy Adewuyi – University of
Uyo, Uyo

Dr Akanni Prince – Federal University of
Technology, Akure

Dr Alake Olaniyi – Federal University of
Technology, Akure

Professor Ayodeji Emmanuel Oke - Federal
University of Technology, Akure

Dr Sani Abdullahi Sarki – Bayero
University, Kano

Dr Idris Katun – University Affiliations &
Linkages, The Federal Polytechnic, Bauchi

Professor Abdul Anakobe Isa – Abubakar
Tafawa Balewa University, Bauchi

Dr Bukar Usman Wakama - Abubakar
Tafawa Balewa University, Bauchi

professor Ibrahim Ibrahim Inuwa -
Abubakar Tafawa Balewa University,
Bauchi

Dr Ibrahim Abubakar Alkali – Bayero
University, Kano

Professor Mustapha Abdulrazaq – Ahmadu
Bello University, Zaria

Dr Oyeyipo Opeyemi – Bells University of
Technology, Ota

Professor James Rotimi – Massey
University, Auckland, New Zealand

Dr Brenda Nyeveiwai Rumutsa –
University of Venda, Thohoyandou, South
Africa

Professor Hangwelani Magidimisha-
Chipungu – University of Kwazulu Natal,
Durban, South Africa

Professor Lovemore Chipungu - University
of Kwazulu Natal, Durban, South Africa

Dr Popoola Ayobami - University of
Kwazulu Natal, Durban, South Africa

Dr Zanele Mbambo - University of Kwazulu
Natal, Durban, South Africa

Associate Professor Jamaludin Mohamad
Yatim – Universiti Tehnologi Malaysia,
Malaysia

Assistant Professor Dodo Yakubu Aminu –
Istanbul Gelisim University, Istanbul,
Turkey

Associate Professor Meisam Razavi –
Technical & Vocational University,
Mazandaran, Iran

Assistant Professor Faizah Mohammed
Bashir – The University of Hail, Hail, Saudi
Arabia

Dr Eric Kwame Simpeh – Kwame Nkrumah
University of Science & Technology,
Kumasi, Ghana

Professor S. U. Kunya Abubakar Tafawa
Balewa University, Bauchi

Professor John Oko Ameh University of
Lagos, Lagos

Professor Olugbenga Ata Obafemi
Awolowo University, Ile Ife

Professor Dalhatu Abdulsalam Ahmadu
Bello University, Zaria

Professor Shehu Bustani Ahmadu Bayero
University, Kano

Professor Kevin C. Okolie Nnamdi Azikiwe
University, Awka

Professor Andrew Mhya Stanley Ahmadu
Bello University, Zaria

Professor Dahiru Dauda Ahmadu Bello
University, Zaria

Editorial

You are welcome to volume 16, number 1, June 2025 edition of Environmental Technology and Science Journal (ETSJ). In this edition, there are 26 articles that cut across the built environment research domain.

The efforts of our Reviewers are commendable! We are grateful to our contributors for considering and using ETSJ as a platform for disseminating their research outputs. Please, keep the manuscripts coming! May all our wishes come through in 2025 and beyond.

Past and current editions of the Journal can be accessed and downloaded at these web addresses:

<https://journal.futminna.edu.ng/index.php/etsj> and <https://www.ajol.info/index.php/etsj>

Let us do it again, peace!

R. A. Jimoh
Managing Editor

Contents

1-9	Adaptations and Innovations: A Panacea to Challenges Faced by Builders after Subsidy Removal in Nigeria Ijigah E.A. & Alake O.
10-13	Bacterial Diversity and Abundance in Soil of Baturiya Wetland, Hadejia, Jigawa State Zakari H.H., Bichi B.S., Babura B.S., Mairami F.M., Babangida S.M., Abdulaziz R.T., Aliyu M.A. & Nura S
14-27	Evaluating the Influence of Land Cover Dynamics on Land Surface Temperature in Kano Metropolitan Area, Nigeria Shaibu A.S., Youngu T.T. Ibrahim A., Omale D., Oduyemi A.T., Alagbe A.O., Asifat J.T. & Olayiwola K.O.
28-44	Physicochemical parameters, heavy metal pollution and health risk assessment of water bodies in Kolokuma/Opokuma Local Government Area of Bayelsa State Augustine E.U., Muhammad S.A., Abu T., Okogbe E.E., Hassanatu A-A. & Njoku N.
45-59	Delineation of Groundwater Potential Zone in Hard Rock Terrain, using Remote Sensing, GIS, and Analytical Hierarchy Process (AHP): A Case of Suleja Local Government Area, North-Central Nigeria Ibrahim D., Baloye D.O. & Babamaaji R.
60-68	Strength Properties of Nano Silica Concrete Produced with Millet Husk Ash as Partial Replacement of Cement Onogwu C. M., Loya O.S. & Dukku N.B.
69-77	Assessing Barriers to Implementing Information Technology for Quality Control in Nigerian Construction Organisations Abdullahi S.L. & Nasir R.M.
78-88	Analysis of Pressure Drivers within an Urban River Riparian Reserve: A Case of Nairobi River in Kenya Odongo M.A., Mireri C. & Mwangi P.
89-101	Assessment of Unmanned Aerial Vehicle Versus Terrestrial Method of Topographic Surveying Ibrahim A., Afonja Y. O., Omale D., Idoko I. A., Alagbe A. O., Oduyemi A. T., Akintuyi O. B., Ibrahim R. O. & Azeez Z. O.
102-110	Unpacking Barriers to Knowledge Management in Quantity Surveying: An Empirical Analysis from Kaduna State Buba S-P.G.
111-122	Factors Influencing the Adoption of Sustainable Construction Practices in Building Development Projects in Ruiru Municipality, Kenya Chepengeno P. & Letema S.

- 123-132 Developing a Conceptual Framework for Quality Research in Built Environment
Oyewobi L.O., Okanlawon T.T., Medayese S.O., Abubakar, M-J., Ogunbode E.B. & Jimoh R.A.
- 133-143 Gumbel Distribution-Based Flood Frequency Analysis for Coastal Flood Risk Assessment in Ugborodo Community, Niger Delta, Nigeria
Agha C.W., Mokwenye I.I., Atikpo E. & Nwulu N.
- 144-154 Phytoremediation Potential of Plants Growing in a Mined-out Area at Afiesa in the Eastern Region of Ghana
Okoh P.A. & Zakpaa H.D.
- 155-163 Impact of Emerging Technologies on Environmental Monitoring and Industrial Safety Compliance
Dimkpa K., Ohochukwu P. & Azike C.
- 164-173 Environmental Assessment of Stream Water Quality in Ago-Iwoye, Ijebu North Local Government, Ogun State
Talabi A.T., Ajetunmobi A.E., David T.W., Odunaike R.K., Feyisola R.T., Ajiboye O., Adeleke A.T. & Biere P.
- 174-182 Assessment of Wildlife Conservation in Ngel Nyaki Forest Reserved in Sardauna Local Government Area, Taraba State
Bwadi E.B., Ezekiel F.B., Garkida M.D., Ahmed J.E., Moses J., Petter S., Gaius F.A., Yusuf A. & Rimamskep Q.U.
- 183-193 Assessment of solid waste management in Nairobi City County, Kenya
Kipkoech R. & Thuo A.
- 194-201 Government Policies on Construction Industry Stakeholders': Key Constraints and Effect Indices
Yahaya M.L., Ibrahim M.L., Umar I. & Abdulhakeem B.
- 202-210 Analysis of the Performance of Office and Shop Properties Rental Values in Kaduna
Adoga D.O.
- 211-215 Effect of Substance Trafficking and Abuse on Real Estate Investment in Nigeria: A Review
Yakubu S., Musa M.S. & Dangana U.S.
- 216-224 Saltwater Intrusion in Nigeria: A Review
Odigie O. & Obayagbona N.O.
- 225-233 Public Housing and Defensible Space Concepts in Festac Town, Lagos, Nigeria
Okunola S., Ogunbodede B. & Amole D.

- 234-251 Modelling Cost Control for Effective Dam Projects Delivery in Nigeria
Madu N.D., Abubakar, M-J., Okanlawon T.T., Salisu H.A., Ogunbode E.B.,
Oyewobi L.O., Shittu A.A., Tsado T.Y. & Jimoh R.A.
- 252-261 Evaluation of Hydrogeologic Conditions of Crystalline Basement Aquifers
in Lere Local Government Area, Eastern Part of Kaduna State, Nigeria
Olaniyan I.O. & Omotoso A.S.
- 262-270 Assessment of the Attitudinal Behaviour of Boda Boda Riders in Dar es
Salaam, Tanzania
Adeleye B.M., Popoola A.A. & Stephano N.