

ISSN: 2165-3917 Volume 15, Number 4, April 2025



Open Journal of Applied Sciences



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

Journal Editorial Board

ISSN Print: 2165-3917 ISSN Online: 2165-3925

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

Editors-in-Chief

Prof. A. C. Matin
Prof. Harry E. Ruda

Stanford University School of Medicine, USA
University of Toronto, Canada

Editorial Board

Prof. Terry L. Alford
Dr. Y. Bilgin Altundas
Dr. Demetrios A. Arvanitis
Prof. Ezekiel Bahar
Prof. Der-Chen Chang
Prof. Yong Chen
Dr. Paul Crilly
Dr. Pradip Debnath
Prof. Omayma Sayed Abdel Salam El-Kinawy
Prof. Andrzej T. Galecki
Dr. Krassimir Georgiev
Dr. Chunlei Guo
Prof. Paloma R. Horche
Dr. Sheng-He Huang
Dr. Jithesh Kottur

Arizona State University, USA
Schlumberger-Doll Research, USA
Academy of Athens, Greece
University of Nebraska, USA
Georgetown University, USA
Ecole Normale Supérieure, France
The University of Tennessee, USA
Tezpur University, India
National Research Center, Fats and Oils Department, Egypt
University of Michigan Medical School, USA
Bulgarian Academy of Sciences (BAS), Bulgaria
University of Rochester, USA
Polytechnic University of Madrid, Spain
University of Southern California, USA
Department of Pharmacological Sciences, Icahn School of
Medicine at Mount Sinai, USA
The Chinese Academy of Sciences, China
“Gheorghe Asachi” Technical University, Romania
University of South Florida, USA
The University of Hong Kong, China
Indira Gandhi National Tribal University, India
Fisk University, USA
National Forensic Sciences University, GOA Campus, India
Shamakhi Astrophysical Observatory Named after Nasreddin Tusi of
Ministry of Sciences and Education of the Republic Azerbaijan,
Azerbaijan

Prof. De-Qing Liang
Prof. Rodica Luca
Prof. Wen-Xiu Ma
Prof. Jukka P. Matinlinna
Dr. Vishnu Narayan Mishra
Prof. Richard Mu
Dr. Sandeep Munjal
Dr. Mahammad A. Nurmammadov

Prof. Valeriy Perminov
Dr. Jie Shen
Dr. M. P. Srinivasan
Dr. Tian Tang
Dr. Low-Hong Tong
Prof. Dimos A. Triantis
Dr. Yiru Xu
Dr. Yong Xu
Dr. Mehmet Yavuz
Prof. Changying Zhao
Prof. Shufeng Zhou

Tomsk Polytechnic University, Russia
University of Michigan, USA
National University of Singapore, Singapore
University of Alberta, Canada
National University of Singapore, Singapore
Technological Educational Institution of Athens, Greece
University of Michigan Medical School, USA
Ferris State University, USA
Necmettin Erbakan University, Türkiye
Shanghai Jiao Tong University, China
University of South Florida, USA

Table of Contents

Volume 15 Number 4

April 2025

Dynamic Similarity Optimization Design of an Aero-Engine

Z. X. Chen, F. Wang, S. Zeng, Y. C. Lin.....773

Early Detection of Diabetes Using a Hybrid Approach Based on the Voting Classifier

A. F. Kouassi, B. I. C. Dje, K. D. Kone, O. Asseu784

Optimization Design of Curved Wing Box Based on BP-Multi-Objective Genetic Algorithm

Z. C. Yu, Q. Wang.....798

Innovation and Practice of the Whole-Process Fine Management of Low-Value Consumables in Public Hospitals

X. W. Pan, Y. N. Jiang.....809

Multi-Agentic Automation for Evaluating Property Claims in Underwriting

M. I. Sajid819

Stacy: A Voice AI Agent Conducting Risk Assessment for Small Business Insurance

M. I. Sajid834

Impact of Data Augmentation Technique on Automatic Brain Tumor Detection Using ResNet CNN

G. Nitiema, J. T. Kouawa.....854

Building upon Biot-Savart Law: Behavior of Surfaces and Curves of Magnetic Field around Electrical Segments

G. Auvert.....864

Designing an Intelligent Virtual Assistant for Preventing Bullying and Cyberbullying in Education

C. Sánchez Romero874

Advancing Human-Robot Collaboration: A Focus on Speed and Separation Monitoring

G. Verschuere, R. Noens, W. Nica, D. Accoto, M. Juwet.....885

Physicochemical and Microbiological Parameters of Water Used in Schools of the Department of Man (Côte d'Ivoire)

N. A. A. Koua-Koffi, F. M. Zahui, L. S. Coulibaly, Y. Coulibaly, D. Sangaré,
P. J.-M. Ouattara, L. Coulibaly.....906

Dynamic Analysis of Nose Landing Gear Shimmy Considering Strut Height and Experiment on the Test Platform

X. Z. Xiao, Y. Y. Zhao, H. Wu, G. S. Zhu.....919

Dynamic Characteristics Analysis of Hollow Shafts Based on Higher Order Shear Theory

Z. C. Feng, Y. C. Lin, P. H. Qian, Z. L. Dai, S. Zeng, F. Wang.....938

The Latin Rite Patriarch of Jerusalem's Thoughts on the Shroud of Turin

G. Fazio, F. Z. Strangio, F. Riotto, B. M. Strangio.....955

Design of a Robotic System for Cleaning Solar Panels in Benin

S. A. O. Sanya, M. Hounghedji, M. F. O. Sanya, D. C. Akowanou.....962

For a New Department of Energy Lab to Examine Laser Fusion for Energy

W. Manheimer.....976

Federated Domain Generalization by Intra-Client Stable Feature Learning and Inter-Client Domain Adversarial Alignment

X. Zhao, W. Ai.....987

On Matching Characterization of $P_m \cup T(1,3,n)$

S. C. Shen.....1002

Assessment of the Quality of Some Toilet Soaps Sold in Cameroon

G. B. Tamne, A. G. Kiskeya A Yoh, G. H. Fendoung Dejiang1008

The Integration of Curriculum Ideology and Politics in the Teaching of Medical Pathology in International Students

R. He, W. R. Liu.....1017

The Seidel Eigenvalues Polynomial and Spectrum of the Petersen Graph

D. Zhou, S. M. Lv1025

An Improved Water Vapor Trajectory Clustering Method and Its Application Analysis

J. Yu, M. Cai, Y. Q. Zhou, J. J. Ou.....1033

Human Red Blood Cell Stretching Using Optical Tweezers

P. Yale, A. A.-B. N'guessan, J. M. E. Konin, M. A. Kouacou, J. T. Zoueu1050

Scattering of SH-Waves by a Circular Inclusion in Exponentially Inhomogeneous Media with Nanoscale-Dependent Density

Y. Q. Sun, L. Z. Liu, J. Zhang1058

Study on the Height of Water-Conducting Fracture Zone of Overburden Rock in Filling Mining of Gold Mine

X. Shi.....1073

Assessment of Debris/Mudflow Hazards Developed in Pasanauri Section of Natakhtari-Mleta Highway (Mtskheta-Mtianeti Region, Georgia)

Z. Varazashvili, Z. Kakulia, G. Gaprindashvili, I. Ramishvili, G. Chakhaia, G. Tlashadze,
D. Chutkerashvili, D. Ratiani 1085

Low-Cost Ceramic Filters and Biochar Filters as Point of Use Devices for Removal of Indicator Pathogens in Drinking Water: A Review

D. D. Rutsito, M. Katsande..... 1095

Early Detection of Sexually Transmitted Infections Using YOLO 12: A Deep Learning Approach

M. Chileshe, M. Nyirenda, J. Kaoma..... 1126

Modeling with Simple Graphic Methods of the Extraction of *Corymbia citriodora* Essential Oil on an Artisanal Scale in Congo-Brazzaville

J. B. Bassiloua, A. F. Binaki, F. C. Bopoundza, H. Bazolo Lemba, T. Silou 1145

Open Journal of Applied Sciences (OJAppS)

Journal Information

SUBSCRIPTIONS

The *Open Journal of Applied Sciences* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$79 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 © 2025 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 © 2025 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: ojapps@scirp.org

Call for Papers



Open Journal of Applied Sciences

ISSN Print: 2165-3917 ISSN Online: 2165-3925

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

Open Journal of Applied Sciences (OJAppS) is an international peer-reviewed, open-access journal publishing in English original research studies, reviews in diverse areas of applied sciences. 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 applied sciences and to keep a record of the state-of-the-art research in related areas.

Subject Coverage

The journal publishes original papers including but not limited to the following fields:

Applied Behavioral Science
Applied Biology
Applied Chemistry
Applied Ecology
Applied Economics
Applied Engineering

Applied Genetics
Applied Geography
Applied Linguistics
Applied Mathematics
Applied Mechanics
Applied Philosophy

Applied Physics
Applied Physiology
Applied Psychology
Applied Sociology
Artificial Intelligence
Computing Technology

We are also interested in: 1) Short Reports—2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews—Comments and critiques.

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 submission, please access the website.

Website and E-Mail

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

E-mail: ojapps@scirp.org