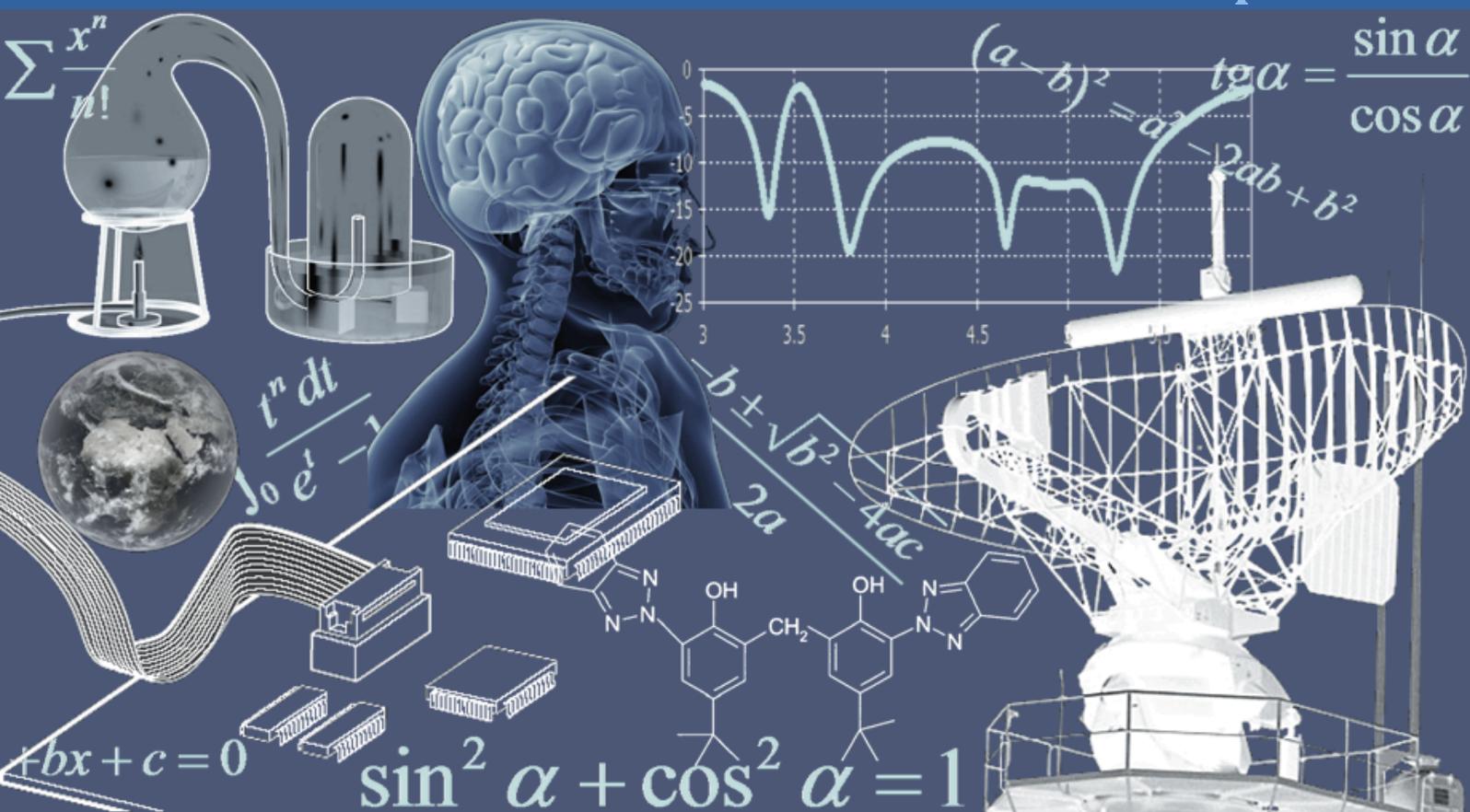


INTERNATIONAL JOURNAL OF INNOVATION AND APPLIED STUDIES

Vol. 42 N. 2 April 2024



International Peer Reviewed Monthly Journal



International Journal of Innovation and Applied Studies

International Journal of Innovation and Applied Studies (ISSN: 2028-9324) is a peer reviewed multidisciplinary international journal publishing original and high-quality articles covering a wide range of topics in engineering, science and technology. IJIAS is an open access journal that publishes papers submitted in English, French and Spanish. The journal aims to give its contribution for enhancement of research studies and be a recognized forum attracting authors and audiences from both the academic and industrial communities interested in state-of-the art research activities in innovation and applied science areas, which cover topics including (but not limited to):

Agricultural and Biological Sciences, Arts and Humanities, Biochemistry, Genetics and Molecular Biology, Business, Management and Accounting, Chemical Engineering, Chemistry, Computer Science, Decision Sciences, Dentistry, Earth and Planetary Sciences, Economics, Econometrics and Finance, Energy, Engineering, Environmental Science, Health Professions, Immunology and Microbiology, Materials Science, Mathematics, Medicine, Neuroscience, Nursing, Pharmacology, Toxicology and Pharmaceuticals, Physics and Astronomy, Psychology, Social Sciences, Veterinary.

IJIAS hopes that Researchers, Graduate students, Developers, Professionals and others would make use of this journal publication for the development of innovation and scientific research. Contributions should not have been previously published nor be currently under consideration for publication elsewhere. All research articles, review articles, short communications and technical notes are pre-reviewed by the editor, and if appropriate, sent for blind peer review.

Accepted papers are available freely with online full-text content upon receiving the final versions, and will be indexed at major academic databases.

Editorial Advisory Board

Amir Samimi, Ph.D. of Science in Chemical engineering, Process Engineer & Risk Specialist of Oil and Gas Refinery Company, Iran
Mahsa Ja'fari, Department of Chemical Engineering, Abadan Faculty of Petroleum, Petroleum University of Technology, Abadan, Iran
Alin Velea, Paul Scherrer Institute, Switzerland
Kamyar Hasanzadeh, Aalto University, Finland
Ogbonnaya N. Chidibere, University of East Anglia, United Kingdom
Oumair Naseer, University of Warwick, United Kingdom
Wei Zheng, University of Texas Health Science Center at San Antonio, USA
Hu Zhao, University of Southern California, USA
Haijian Shi, Kal Krishnan Consulting Services, Inc, USA
Syed Ainul Abideen, University of Bergen, Norway
Malika Maataoui, Mohammed V University, Morocco
Fabio De Felice, University of Cassino and Southern Lazio, Italy
Giovanni Leonardi, Mediterranea University of Reggio Calabria, Italy
Siham El Gouzi, Instituto Andaluz de Ciencias de la Tierra, Spain
Mohamed KOSSAÏ, European Business School EBS Paris, France
Mustafa Batuhan AYHAN, Marmara University, Turkey
Andrzej Klimczuk, Warsaw School of Economics, Poland
Corinthias P. M. Sianipar, Tokyo University of Science, Japan
Irfan Jamil, Sinohydro Engineering, China
Sukumar Senthilkumar, Chonbuk National University, South Korea
Bratu (Simionescu) Mihaela, Bucharest University of Economic Studies, Romania
Mirela Maria Codescu, National Institute for R&D in Electrical Engineering ICPE-CA, Romania
Milen Zamfirov, St. Kliment Ohridski Sofia University, Bulgaria
Svetoslava Saeva, Neofit Rilski South-West University, Bulgaria
Dimitris Kavroudakis, University of the Aegean, Greece
Vaitsa Giannouli, Aristotle University of Thessaloniki, Greece
Nataša Pomazalová, Mendel University in Brno, Czech Republic
Hazem M. Shaheen, Damanhour University, Egypt
Shalini Jain, Manipal University Jaipur, India
Amin Jula, National University of Malaysia, Malaysia
Mahdi Moharrampour, Islamic Azad University, Buin zahra Branch, Iran
Ricardo Rodriguez, Technological University of Ciudad Juarez, Mexico
Yuniel E. Proenza Arias, Universidad de las Ciencias Informáticas, Cuba
Elizabeth Bissell Miller, University of Missouri, Columbia
Bertin Désiré SOH FOTSING, University of Dschang, Cameroon
Antonella Petrillo, University of Cassino and Southern Lazio, Italy
Hong Zhao, The Pennsylvania State University, USA
Jianjun Chen, The University of Chicago, USA
Shaju George, Royal University for Women, Kingdom of Bahrain
Chandrasekaran Subramaniam, Kumaraguru College of Technology, India
Ilango Velchamy, New Horizon College of Engineering, India
M. Kumaresan, M.P.N.M.J. Engineering College, India
Mohammad Valipour, University of Tehran, Iran
Mohameden Sidi El Vally, King Khalid University, KSA
Mona Hedayat, Boston Children's Hospital, Harvard Medical School, USA
Suresh Kumar Alla, Advanced Medical Technologies, BD Technologies, USA
Ahmed Hashim Mohaisen Al-Yasari, Babylon University, Iraq
Aziz Ibrahim Abdulla, Tikrit University, Iraq
Khalid Mohammed Shaheen, Technical College of Mosul, Iraq
Baskaran Kasi, Kuala Lumpur Infrastructure University College, Malaysia
Nurul Fadly Habidin, Universiti Pendidikan Sultan Idris, Malaysia
Adnan Riaz, Allama Iqbal Open University, Pakistan
Syed Noor Ul Abideen, KPK Agricultural University, Pakistan
Arab Karim, M'Hammed Bougara University of Boumerdes, Algeria
Zoubir Dahmani, UMAB University of Mostaganem, Algeria
Mohsen Brahmi, Sfax University, Tunisia
Mongi Besbes, University of Carthage, Tunisia
Mai S. Mabrouk, Misr University for Science and Technology, Egypt
Olfat A Diab Kandil, Misr University for Science and Technology, Egypt

Munir Ahmed G. Timol, Veer Narmad South Gujarat University, India
Saravanan Vasudevan, Arunai Engineering College, India

Table of Contents

Physical characterization of five Ivorian mango varieties with a view to their contribution to the energy mix of Côte d'Ivoire	206-213
<i><u>Dokatiéné Abdoulaye Coulibaly, Wanignon Ferdinand Fassinou, and Olga Yolande Ako</u></i>	
A New Perspective on Experimental Analysis of Biomass Cookstove to Improve Energy Efficiency	214-219
<i><u>Noufou Bagaya, Windé Nongué Daniel Koumbem, Bouwèreou Bignan Kagomna, Issaka Ouédraogo, Thierry Sikoudouin Maurice Ky, and Sié Kam</u></i>	
Electrical and mechanical study of a medium-voltage overhead distribution line	220-232
<i><u>Cossi Téléphore Nounangnonhou, Guy Clarence Semassou, Kossoun Alain Tossa, and Maryse Assogba</u></i>	
Effect of seed priming on physiological and biochemical performance of rice (<i>Oryza sativa</i> L.) seedlings	233-242
<i><u>KONE Tchoa, BADIÉL Babdoua, Yaya TOURE, COULIBALY Idrissa, OUATTARA Zana Lassina, and Mongomaké KONE</u></i>	
Analyse spatio-temporelle de l'occupation des sols dans le secteur de Mawanga	243-251
<i><u>Laurent Kikeba Mbala, Gilbert Pululu Mfwidi Nitu, Antoine MUMBA DJAMBA, and Idi Eca Idrissa</u></i>	
Co-evolution des variables climatiques et du cycle biologique du criquet puant (<i>Zonocerus variegatus</i> Linné)	252-263
<i><u>Laurent Kikeba Mbala, Alphonse Kambi Dibaya Okito Longo, Gilbert Pululu Mfwidi Nitu, Antoine MUMBA DJAMBA, and Idi Eca Idrissa</u></i>	
Structure de marché de quelques produits agricoles de consommation courante et propension de l'agrobusiness familial au Sud-Kivu montagneux en RD Congo	264-281
<i><u>Jean-Pierre Kashangabuye CIRIMWAMI</u></i>	
Déterminants du succès de l'agrobusiness familial dans le Sud-Kivu montagneux en République Démocratique du Congo	282-294
<i><u>Jean-Pierre Kashangabuye CIRIMWAMI</u></i>	
Perception des changements climatiques sur le bilan hydrologique et opportunités naturelles d'exploitation de l'énergie solaire dans la zone de Kouroussa	295-306
<i><u>Moriba Kourouma, Daouda Keita, Mory Kourouma, and Ousmane Djènè Kaba</u></i>	
Caractérisation des processus détritiques sur le littoral Ivoirien: Cas d'Abidjan (Côte d'Ivoire)	307-319
<i><u>GBAMBLE Bi Youzan Aimé, EGORAN Blandine Akissi Épouse KOUASSI, and AHOURE N'Guessan Donald</u></i>	
Effectiveness of ophtascan 2 diabetes screening in Lubumbashi: Pilot study on screening for cancer and type	320-325
<i><u>Désiré Kamba Banza, Robert Mbuli Lukamba, Simon Henry Opio-Emuna, Cilundika Phillippe, Amani Chuma, Jean-Paul Mande Ngoy, Dophra Nkulu Ngoy, Albert Tambwe Nkoy Mwembo, and Oscar Numbi Luboya</u></i>	
Détermination des paramètres physiques et mécaniques du sol de la région de Niamey (Niger) à l'aide des essais géotechniques in situ et au laboratoire	326-337
<i><u>Baraou Souley Idi, Sani Abdoulwahid, and Moussa Konaté</u></i>	
Production of biogas with household peelings in households and estimation of energy potential in Côte d'Ivoire	338-351
<i><u>Sahi Louh, Theophile Roch Ori, Kamenan Blaise Koua, and Prosper Gbaha</u></i>	
Characteristics and management method of agro-pastoral waste in the agricultural watershed of Sassandra case of the departments of Sassandra, Soubré, Daloa and Issia	352-364
<i><u>Amenan Anne Mary Kouassi-Kouadio, Ouattara Pétémanagnan Jean-Marie, Kouassi Nguessan Sergej, Coulibaly Talnan Jean Honoré, and Lacina Coulibaly</u></i>	
Représentation sociale des maladies mentales en milieu urbain congolais	365-370
<i><u>Ozowa Latem Josue, Mula Eric, and Jules Richard Botembe</u></i>	
Effect of physical parameters of the porous medium on natural convection in a partitioned cavity	371-381
<i><u>Souleye FAYE, Sidy Mactar SOKHNA, Sory Diarra, and Vincent SAMBOU</u></i>	
Connaissances de maladies de mains sales et pratiques de l'hygiène de mains dans les ménages de la zone de santé Tshopo, ville de Kisangani	382-389
<i><u>Boande Losangola Gaston, Basandja Longembe Eugene, Jacques Ossinga Bassandja, Iseavembele Bosalo Raphael, Olonga Atike Rachel, Mokoto Lokoni Véronique, Panda Kitronza John, and Joris Losimba Likwela</u></i>	
Evaluation de la qualité de l'examen macroscopique en anatomie pathologique: Laboratoire d'anatomie pathologique du CHU Ibn Rochd de Casablanca	390-397

Mohamed Belcaid, Oussama Aazzane, Nadia Anibat, Abderahman Mellouki, Fatima Zahra Bakhtaoui, Saida Stitou, Abdeljalil Rezzaki, Nabil Gaougaou, and Mehdi Karkouri

La réflexivité: Compétence incontournable pour optimiser l'enseignement des soft skills dans l'enseignement supérieur au Maroc 398-410

Samira Fadili and Belhaj Laila

Méthode électro-analytique pour la détection du cuivre à l'aide d'une électrode à pâte de carbone modifiée par l'acide éthylène diamine tétra-acétique 411-419

Bernadette EHUI AVO BILE, De Serifou MATYLA, Olivier François Aristide Bertrand KOFFI, Sakina TOUZARA, Abdelilah CHTAINI, Teadouanka Luciano LOUA, and Koffi Jules N'DA