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Research Articles

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Deciphering the Epigenetic Mechanisms of DNA Methylation in Plant Stress Response

Dr. Adebayo Oluwatobi, Prof. Mei-Ling Zhang, Dr. Samira El-Khatib

Department of Molecular Biology, University of Ibadan, Ibadan, Nigeria; Institute of Genetics, Makerere University, Kampala, Uganda; School of Biological Sciences, University of Nairobi, Nairobi, Kenya

Keywords: DNA methylation, epigenetics, plant stress response, abiotic stress, bisulfite sequencing, methylation-sensitive amplification

2.

Investigating Dark Matter Anomalies in Galactic Clusters Through Gravitational Lensing Techniques

Elżbieta Nowak, Wei Zhang, Ahmad Al-Mansour

Elżbieta Nowak - Nicolaus Copernicus University, Toruń, Poland; Wei Zhang - University of Tasmania, Hobart, Australia; Ahmad Al-Mansour - Central University of Venezuela, Caracas, Venezuela

Keywords: dark matter, gravitational lensing, galactic clusters, mass distribution, Hubble Space Telescope, European Southern Observatory

3.

Enhancing Photocatalytic Efficiency of TiO2 Nanocomposites with Graphene Oxide for Environmental Applications

Gabriela Santos, Haruto Nakamura, Fatima Al-Mansouri

Vilnius University, Vilnius, Lithuania; Palacký University, Olomouc, Czech Republic; Massey University, Palmerston North, New Zealand

Keywords: TiO2 nanocomposites, graphene oxide, photocatalysis, environmental remediation, methylene blue degradation, sol-gel synthesis

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4.

Innovative Nanostructured Materials for Enhanced Photocatalysis: A Multi-Institutional Study

Lars Müller, Haruto Nakamura, Fatima Al-Sayed

Lars Müller: Tribhuvan University, Kathmandu, Nepal; Haruto Nakamura: University of Zimbabwe, Harare, Zimbabwe; Fatima Al-Sayed: University of Puerto Rico, San Juan, Puerto Rico

Keywords: nanostructured materials, photocatalysis, sol-gel processing, electrospinning, environmental remediation, energy conversion

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5.

Evaluating the Efficacy of Novel Antiviral Therapies in Multi-Ethnic Populations: A Randomized Controlled Trial

Elena Müller, Hiroshi Tanaka, Amina Al-Hashimi

University of Rostock, Rostock, Germany; University of Costa Rica, San José, Costa Rica; University of the South Pacific, Suva, Fiji

Keywords: antiviral therapy, randomized controlled trial, multi-ethnic populations, viral load reduction, clinical symptoms, efficacy

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6.

Analyzing Cognitive Biases in Economic Decision-Making: Insights from Diverse Cultural Contexts

Amina Khoury, José Luis Fernandez, Ying Mei Chen

Al-Baath University, Homs, Syria; University of Concepción, Concepción, Chile; Oklahoma State University, Stillwater, USA

Keywords: behavioral economics, cognitive biases, cultural context, decision-making, loss aversion, econometric models

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7.

Advanced Techniques in Complex Analysis: A Study on Functions of a Complex Variable

Rajesh Mehra, Fatima Al-Khalifa, Angelica Marquez, Achieng Otieno

Department of Mathematics, University of Manitoba, Winnipeg, Canada; Department of Mathematics, University of Khartoum, Khartoum, Sudan; Department of Mathematics, University of Nairobi, Nairobi, Kenya

Keywords: complex analysis, contour integration, analytic continuation, complex variable, mapping properties, computational efficiency

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8.

Innovative Strategies for Urban Air Pollution Control in Rapidly Developing Regions

Jiří Novák, Aisha Al-Mansouri, Lucía Fernández

Palacký University, Olomouc, Czech Republic; Jordan University of Science and Technology, Irbid, Jordan; University of Antioquia, Medellín, Colombia

Keywords: air pollution, urban planning, emission control, technological innovation, community engagement, environmental policy

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