



Pacific Journal of Science and Technology (PJST) Publication Archives

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Volume 22, Number 2 (November/December 2021)

Physics, Atmospheric Physics, and Health Physics

Fernandes, J.L.P.R. 2022. "Simplified Method to Calculate the Radius of Particles". Pacific Journal of Science and Technology. 23(1):5-10. (Keywords: particles, energy, potential, relativity, escape, quantum mechanics)

[pjst23_1_5.pdf](#)

Ezeugo, J.C. 2022. "Probing into Cosmic Evolution Implication on Astronomical Distance Using Extragalactic Radio Sources". Pacific Journal of Science and Technology. 23(1): 11-16. (Keywords: cosmic evolution, linear s

Technology. 23(1): 17–21. (Keywords: linear size, luminosity, redshift, radio sources, quasars, galaxies, steep spectrum, epoch)
[pjst23_1_17.pdf](#)

Ezeugo, J.C. 2022. “Compact Steep Spectrum Sources: Jet Internal Pressure, Blackhole Power, and Ambient Density”. Pacific Journal of Science and Technology. 23(1): 22–27. (Keywords: radio jets, luminosity, linear size, radio sources, quasars, blackhole power)
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Ezeugo, J.C. 2022. “On Re-Acceleration Mechanism of the Radio Jets of Some Powerful Extragalactic Radio Sources”. Pacific Journal of Science and Technology. 23(1): 28–33. (Keywords: cosmic evolution, linear size, astronomical distance, luminosity, radio sources, quasars, dynamical evolution, re-acceleration)
[pjst23_1_28.pdf](#)

Mathematics and Statistics

Ishola, C.Y., O.A. Taiwo, K.A. Adedokun, and M.O. Ajisope. 2022. “Solution of Non-Linear Volterra Integral Equations by Chebyshev Collocation Approximation Method”. Pacific Journal of Science and Technology. 23(1): 34–39. (Keywords: collocation method, nonlinear integral equations, approximation method, linear Volterra integral equations)
[pjst23_1_34.pdf](#)

Victor, A.A., M.O. Etuk, A.O. Yekeen, O.E. Bello, and M.O. Ajisope. 2022. “Mathematical Mod

Information Technology and Communications

Nuruzzaman, M. 2022. "Semi Artificial Intelligent Graphics Design with Cylindrical Surface Test Case". Pacific Journal of Science and Technology. 23(1): 47-56. (Keywords: artificial intelligence, AI, graphics design, visual art)

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Management, Economics, and Education

Olawoyin, R.O. and O.A. Adeniji. 2022. "Entrepreneurs' Ratings of Finance Operational Strategies Needed for Improving the Performance of Small and Medium Enterprises in Oyo State". Pacific Journal of Science and Technology. 23(1): 72-78. (Keywords: operational strategies, finance, marketing, SMEs, performance)

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Supina, D. and A. Mardon. 2022. "What is Wisdom?: A Philisophical and Metaphysical Examination". Pacific Journal of Science and Technology. 23(1): 79-81. (Keywords: nature of wisdom, intelligence, metaphysics, scriptural tradition, cultural constructs)

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Duong, M. and A. Mardon. 2022. "Elitism in Medicine: How the Pre-Medical Experience Fosters Elitism". Pacific Journal of Science and Technology. 23(1): 82-84. (Keywords: medicine, pre-medical studies, medical school, elitism, diversity, institutional barriers, power structures)

Njoku, I.S. Nisar-Ur Rahman, A.M. Khan, I. Otunomo, O.T. Asekun, O.B. Familoni, and C. Ngozi. 2022. “Chemical Composition, Antioxidant, and Antibacterial Activity of the Essential Oil from the Leaves of *Pinus sylvestris*”. Pacific Journal of Science and Technology. 23(1): 85-93. (Keywords: essential oil, *Pinus sylvestris*, Scots pine, Scotch pine, Baltic pine, GC-MS, GC-FID, antibacterial, humulene, antioxidants)

[pjst23_1_85.pdf](#)

Life Sciences and Medicine

Aldada, A. and A. Mardon. 2022. “Effects of Electromagnetic Radiation on Honey Bees in the United States”. Pacific Journal of Science and Technology. 23(1): 94-97. (Keywords: honey bees, electromagnetic radiation, colony collapse syndrome, biological impacts, pollinators)

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Aldada, A. and A. Mardon. 2022. “Gender and Advertisement: Analysis of Aptamil Baby Formula’s Television Commercial”. Pacific Journal of Science and Technology. 23(1): 98- 100. (Keywords: gender stereotypes, advertisement influence on society, Aptamil baby formula)

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Environmental Science and Ecology

Madu, F.U., M.K. Duru, E.A. Sunday, P.C. Odika, S.U. Aglubuo, K.U. Akataobi, and A.C. Friday

Kelle, H.I., E.C. Ogoko, J.K. Nduka, P.I. Udeozo, and M.C. Ubani. 2022. "Health Risk Assessment of Heavy Metal Exposures through Edible Clay from South-Eastern and South-Southern Nigeria". Pacific Journal of Science and Technology. 23(1): 113-123. (Keywords: edible clays, heavy metals, public exposure, health risk assessment, southeast Nigeria)

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Aldada, A. and A. Mardon. 2022. "Effects of Tailpipe Emissions on Air Pollution in Canada". Pacific Journal of Science and Technology. 23(1): 124-126. (Keywords: Canada air quality, tailpipe emissions, atmospheric pollution, smog, clean vehicle technology)

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Geology, Geophysics, and Earth Science

Aya, F.C., C.I. Okonkwo, and O.L. Alum. 2022. "Using the RUSLE and GIS Model to Predict Soil Degradation in Nguzu-Edda, Southeastern, Nigeria". Pacific Journal of Science and Technology. 23(1): 127-140. (Keywords: RUSLE, Revised Universal Soil Loss Equation, Nguzu-Edda, GIS, Geographical Information System, soil degradation risk, gully erosion)

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Amos-Uhegbu, C. and D.N. Ndubueze. 2022. "Geophysical Investigation of the Groundwater Potentials in the Imo Shale Formation of Ehime Mbano Area, Southern Nigeria". Pacific Journal of Science and Technology. 23(1): 141-149. (Keywords: groundwater, geoelectric, Imo Shale Formation, terrameter, vertical electrical sounding, VES)

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Ezeugo, J.C. 2022. “Compact Steep Spectrum Sources – Subclass Diversity and Implication”. Pacific Journal of Science and Technology. 23(1): 17-21. (Keywords: linear size, luminosity, redshift, radio sources, quasars, galaxies, steep spectrum, epoch)

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Information Technology and Communications

Nuruzzaman, M. 2022. "Semi Artificial Intelligent Graphics Design with Cylindrical Surface Test Case". Pacific Journal of Science and Technology. 23(1): 47-56. (Keywords: artificial intelligence, AI, graphics design, visual art)

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Chemistry and Biochemistry

Njoku, I.S. Nisar-Ur Rahman, A.M. Khan, I. Otunomo, O.T. Asekun, O.B. Familoni, and C. Ngozi. 2022. “Chemical Composition, Antioxidant, and Antibacterial Activity of the Essential Oil from the Leaves of *Pinus sylvestris*”. Pacific Journal of Science and Technology. 23(1): 85–93. (Keywords: essential oil, *Pinus sylvestris*, Scots pine, Scotch pine, Baltic pine, GC-MS, GC-FID, antibacterial, humulene, antioxidants)
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Life Sciences and Medicine

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Madu, F.U., M.K. Duru, E.A. Sunday, P.C. Odika, S.U. Aglubuo, K.U. Akataobi, and A.C. Friday. 2022. “Air Quality Evaluation of Ugwuele Quarry Site, Uturu, Abia State, Nigeria”. Pacific Journal of Science and Technology. 23(1): 101-112. (Keywords: particulate matter, meteorological factors, noise, heavy metals)

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Kelle, H.I., E.C. Ogoko, J.K. Nduka, P.I. Udeozo, and M.C. Ubani. 2022. “Health Risk Assessment of Heavy Metal Exposures through Edible Clay from South-Eastern and South-Southern Nigeria”. Pacific Journal of Science and Technology. 23(1): 113-123. (Keywords: edible clays, heavy metals, public exposure, health risk assessment, southeast Nigeria)

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Engineering and Material Science

Jimoh, M.O. and A.A. Adeyinka. 2021. “Development and Quality Evaluation of Cubing Machine for Fermented African Locus Beans (*Parkia biglobosa*)”. *Pacific Journal of Science and Technology*. 22(2): 5-14. (Keywords: design, fabrication, production, analysis, efficiency, capacity, statistical chart)

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Olubo, A.S., J.T. Stephen, O.O. Opadotun, J.A. Adebija, A. Adebayo, and G.J. Adeyemi.. 2021. “Design and Fabrication of a Low Cost Roasted Groundnut Seed Dehuller”. *Pacific Journal of Science and Technology*. 22(2): 15-22. (Keywords: groundnut, dehuller, design, efficiency, throughput capacity, mechanical milling)

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Idu, H.K., N.E. Idenyi, E.I. Ugwu, and D.U. Onah. 2021. “Study of *Moringa oleifera* and *Vitex a*

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extracts for use

Energy and Power

Aliyu, H.B. and M.R. Odekunle. 2021. "Functional Relationship between the Energy Consumption and the Greenhouse Gas Emissions in Nigeria". *Pacific Journal of Science and Technology*. 22(2): 31-39. (Keywords: greenhouse gasses, energy, consumption carbon dioxide, methane gas, nitrous oxide, emission factor)

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Physics, Atmospheric Physics, and Health Physics

Fernandes, J.L.P.R. 2021. "No Sense of Einstein's Principles of Relativity and the Origin of a New Relativity". *Pacific Journal of Science and Technology*. 22(2): 40-48. (Keywords: relativity, space, time, universe, potential, gravitational, velocity, energy, mass)

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Mathematics and Statistics

Ajisope, M.O., A.Y. Akinyele, C.Y. Ishola, A.A. Victor, M.L. Olaosebikan, and T. Latunde. 2021. "Application of Least Squares Method for Solving Volterra Fractional Integro-Differential Equations Based on Constructed Polynomials". *Pacific*

Taiwo, S.A. and A.A. Akomolafe. 2021. “Complementary Generalized Transmuted Poisson Lomax Distribution with its Derived Properties and Application”. *Pacific Journal of Science and Technology*. 22(2): 70-80. (Keywords: lifetime distribution, maximum likelihood estimation, Lomax distribution, hazard function, order statistics)

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Oyeyemi, G.M., D.A. Aji, A.B. Ibraheem, and A.O. Kareem. 2021. “Comparison of some Robust Estimators in Multiple Regression in the Presence of Outliers”. *Pacific Journal of Science and Technology*. 22(2): 81-90. (Keywords: efficiency, outlier, parameter, rank, robust estimator)

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Edogbanya, H.O., S.O. Momoh, T.A. Ayoola, A.A. Victor, M.Sc., M.O. Ajisope, and A.A. Ayoade. 2021. “Transmission Dynamics of a SIR Infectious Disease Model using Multi-Step Homotopy Analysis Method”. *Pacific Journal of Science and Technology*. 22(2): 91-100. (Keywords: mathematical biology, disease model, stability theory, differential equations, epidemic indicator, MHAM, multi-step homotopy analysis method)

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Information Technology and Communications

Olabisi, O., A.O. Adeniran, A.G. Ebisemiju, and S.O. Areo. 2021. “Investigation on Effect of Homogenous Multiple Lines of Trees on Wireless Communication System”. *Pacific Journal of Science and Technology*. 22(2): 101-107. (Keywords: homogeneous, near field, LOS, line of sight, vegetation, communication systems, signal interference, path loss)

Omofunmi, O.E. and K.S. Ogunleye. 2021. "Precision Farming, Soil Conservation, and Irrigation as Veritable Impetus for Boosting Agricultural Productivity". *Pacific Journal of Science and Technology*. 22(2):108-116. (Keywords: agricultural productivity, irrigation, precision farming, sensors, soil conservation)

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Ayinde, I.A., A.O. Ayegbokiki, and F.O. Aminu. 2021. "Socio-Economic Factors Influencing Quantity of Insecticide Use in Cowpea Production in Nigeria". *Pacific Journal of Science and Technology*. 22(2): 117-129. (Keywords: cowpea, factors, influence, insecticide, production, socio-economic factors, agriculture management)

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Ifekwem, N.E., S.T. Olabosinde, and O.O. Amuah. 2021. "Sibling Rivalry and Succession Planning in Family Business in Nigeria". *Pacific Journal of Science and Technology*. 22(2): 130- 136. (Keywords: business succession, rivalry, family dynamics, family business, planning, crossgenerational, multi-generational business)

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Oladeji, A.D. and O.A. Afolabi. 2021. "The Challenges and Prospects of Secretarial Profession in this Modern Technology Era in Oyo State Nigeria". *Pacific Journal of Science and Technology*. 22(2): 137-144. (Keywords: challenges, prospects, secretarial profession, modern technology area, technological skills, employment skills, clerical activities)

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Emeka, I.D. and E.C. Thompson,. 2021. "Continuing Education: A Strategy for Achieving Ed

Chapman, T., P.A. Johnson, J.C. Johnson J.C. and A. Mardon. 2021. "Canadian Victory on Vimy Ridge: The Creation of the Creeping Barrage and the Defining Moment of a Nation". *Pacific Journal of Science and Technology*. 22(2): 152-158. (Keywords: artillery, Canadians, Canada, First World War, WWI, Vimy Ridge, military history, military science, tactical planning, flash spotting, sound ranging, creeping barrage)

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Situ, A. and F. Omilabu. 2021. "Assessment of Financial Reporting Quality of Federal Universities in Nigeria: A Case Study of the Federal University of Agriculture, Abeokuta". *Pacific Journal of Science and Technology*. 22(2): 159-166. (Keywords: financial reporting, economic audits, Benford's Law, economic reform, governance, accountability, financial report validation, public sector accounting standards)

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Chemistry and Biochemistry

Odika, P., M. Duru, C. Onyeabor, O. Nana, C. Nwadike, and P. Okafor. 2021. "Bioactive Profiling of *Vitex doniana* Leaf and its Effect on Rat Erythrocyte Membrane Stabilization Activity". *Pacific Journal of Science and Technology*. 22(2): 167-181. (Keywords: bioactive profiling, membrane stabilization, traditional medicine, *Vitex doniana* leaf)

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Busari, F.A., S.B. Adekoya, M.B. Adebo, S.R. Oyefeso, S.A. Sigbeku, and M.E. Oladele. 2021. "Kinetic, Isothermal, and Thermodynamics Studies of the Biosorption of Pb (II) from Aqueous Solution by White Star *Gliricidia sepium* (L.) Alb. (Mim. *albidum* G.)

Life Sciences and Medicine

Ogunjobi, K.M., K.O. Okunola, V.A. Jayeola, A.C. Adetogun, and O.F. Gakenou. 2021. "Evaluation of Density and Anatomical Properties of Stem Wood of Five Commercial Trees in Nigeria using a Non- Destructive Approach". *Pacific Journal of Science and Technology*. 22(2): 194-200. (Keyword: non- destructive, increment borer, density, anatomical properties, derived values, tree species, commercial wood, timber)

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Oduntan, O.O. and M. Morgan. 2021. "Proximate Composition and Public Perception of Variegated Grasshoppers (*Zonocerus variegatus*) as a Source of Animal-Based Protein". *Pacific Journal of Science and Technology*. 22(2): 201-206. (Keywords: entomophagy, grasshoppers, wildlife consumption, nutrition, utilization)

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Oduntan, O.O. and A.K. Taiwo. 2021. "Survey of Endo-Parasite Composition of Selected Wildlife Species and their Economic Importance". *Pacific Journal of Science and Technology*. 22(2): 207- 212. (Keywords: zoological garden, wildlife management, disease, parasitology, animal health, conservation)

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Tiamiyu, K.A. and B.O. Ajibola. 2021. "Self Efficacy, Emotional Intelligence, and Locus of Control as Predictors of Substance Abuse amount Undergraduates in Nigeria". *Pacific Journal of Science and Technology*. 22(2): 213- 220. (Keywords: self-efficacy, emotional intelligence, locus of control, substance abuse, university students)

Bamigboye, S.O. and M.O. Jimoh. 2021. "Evaluating Threats and Conservation Status of South African Rhynchosia". *Pacific Journal of Science and Technology*. 22(2): 221-226. (Keywords: conservation, endemism, ethnobotanical uses, extinction risks, threats, biodiversity)

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Akintola, O.O., J.T. Arojojoye, M.O. Ojo, and R.T. Ibode. 2021. "Remediation Potential of *Jatropha integerrima* (Jacq) in Lead Contaminated Soil". *Pacific Journal of Science and Technology*. 22(2): 227-239. (Keywords: anthropogenic heavy metal pollution, lead, Pb, bioaccumulation, industrialization, bioaccumulation, bioremediation, sustainability)

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Usman, R., A.M. Kamal, E.I. Ugwu, I.M. Mustapha, A. Mamman, and A. Hudu. 2020. "Assessment and Analysis of the Presence of Heavy Metals in Water in Ara and Laminga of Nasarawa State, Nigeria: Health Implication on the Populace". *Pacific Journal of Science and Technology*. 21(2):240-246. (Keyword: water assessment, heavy metals, accumulation, public health, concentration, gastropods, Micro Plasma Atomic Emission Spectroscopy, MP-AES. potable water)

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Akintola, O.O., B.L. Olajiire-Ajayi, R.T. Ibode, and O.D. Ayeni. 2021. "Influence of Wastes on Some Properties of Soil around Ajakanga Dumpsite in Ibadan, Southwestern Nigeria". *Pacific Journal of Science and Technology*. 22(2): 247-256. (Keywords: dumpsites, soil properties, compost, re-use, nutrients, agricultural impact)

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Uche, J.J. 2021. “The Impact of Solid Waste Dumpsites on Ambient Air Quality in Obio/Akpor Local Government Area, Rivers State: A Case Study of Nkpolu Community”. *Pacific Journal of Science and Technology*. 22(2): 272–279. (Keywords: air quality, dump sites, off-gassing, ozone, methane, carbon monoxide, nitrogen dioxide, sulfur dioxide, carbon dioxide, ammonia, hydrogen sulfide, volatile organic carbon, particulate matter, environmental monitoring, solid waste dumps)

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Badmus, A.M., B.B. Alhaji, and N. Abdullahi. 2021. “Mathematical Modeling of Ecological Restoration of Gully Erosion in Chukun Local Government Area in Kaduna State”. *Pacific Journal of Science and Technology*. 22(2): 280– 294. (Keywords: mathematical modeling, ecological restoration, gully erosion)

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Geology, Geophysics, and Earth Science

Olorunfemi, M.O., A.G. Oni, T.K. Fadare, and O.E. Olajuyigbe. 2021. “On the Application of the Magnetic Method in the Mapping of Mineralized Pegmatites in Mica Schist underlain Basement Complex of Southwest Nigeria”. *Pacific Journal of Science and Technology*. 22(2): 295–306. (Keywords: linear feature, mineralized pegmatites, magnetic lineaments, mica schist, Nigerian Precambrian Basement Complex)

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Nworie, S.I. and E.I. Ugwu. 2021. “The Effect of Annealing Temperature on Structural and Solid State Properties of Aluminum Zinc Oxide (AlZnO) Deposited by Chemical Bath Technique”. *Pacific Journal of Science and Technology*. 22(1):5–13. (Keywords: AlZnO, thin films, annealing temperature, chemical bath deposition, structural and solid state properties)

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Physics, Atmospheric Physics, and Health Physics

Ezeugo, J.C. 2021. “Jet Production in the More Extended Extragalactic Radio Sources and Unification with Compact Steep Spectrum Sources”. *Pacific Journal of Science and Technology*. 22(1):14–19. (Keywords: jet, magnetization, radio sources, accretion, magnetic field)

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Mathematics and Statistics

Akeyede, I., M. Kaka, and H.R. Bakari. 2021. “Estimation of Two-Sided Exponential Distribution Using the Maximum Likelihood Function”. *Pacific Journal of Science and Technology*. 22(1): 24–29. (Keywords: exp

Science and Technology. 22(1): 30–36. (Keywords: modified homotopy perturbation method, Bernstein polynomials, fractional integro-differential equations)

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Adebisi, A.F., O.A. Uwaheren, M.O. Etuk, O.E. Abolarin, M.T. Raji, K.A. Bello, and J.A. Adedeji. 2021. “Standard Collocation Method by Legendre Basis Polynomial Function for Solving Integro-Differential Equations”. *Pacific Journal of Science and Technology*. 22(1): 37–46. (Keywords: integro-differential difference equations, Gauss-Legendre polynomials)

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Salisu, K.A., Y. Bala, A. Audu, and M.A. Ayinde. 2021. “Mathematical Model for the Dynamics of Drug-Abuse and Violence Co-Menace”. *Pacific Journal of Science and Technology*. 22(1):47–60. (Keywords: mathematical model, drug abuse, violence, co-menace, mathematical model, basic reproduction number)

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Information Technology and Communications

Oliha, F.O. 2021. “Bridging Technological Gulfs for Valuers in Fiscal Cadaster”. *Pacific Journal of Science and Technology*. 22(1):61–67. (Keywords: property valuation, land use charge, system usability, fiscal cadaster, web solution, GIS)

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Oliha, F.O. 2021. “Evaluating Usability of Academic Web Portals for Social-Academic Learning”

Management, Economics, and Education

Ogunwolu, F.O., O.F. Odeyinka, and O.A. Oluwaji. 2021. "A Review of Lean Manufacturing, Six Sigma and Lean Six Sigma". *Pacific Journal of Science and Technology*. 22(1):77-90. (Keywords: Lean manufacturing, Six Sigma, Lean Six Sigma, LSS)
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Bello, B.A., P. Ologbenla, and B.F. Sanusi. 2021. "Employee Welfare and Retention in Dangote Flour Mills PLC., Apapa Lagos". *Pacific Journal of Science and Technology*. 22(1):91-98. (Keywords: employee welfare programs, work-life balance, employee retention, employee management)
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Babatunde, O.O., K.O. Babatunde, T.O. Babatunde, A.T. Ademigbuji, S.O. Okeleke, and A.A. Ekaun. 2021. "Marketing of Timber in Selected Sawmills in Ibadan North Local Government Area of Oyo State Nigeria". *Pacific Journal of Science and Technology*. 22(1): 99- 106. (Keywords: profitability, marketing, timber, Ibadan NGA, sawmills)
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Babatunde, O.O., K.O. Babatunde, T.O. Babatunde, A.T. Ademigbuji, S.O. Okeleke, and A.A. Ekaun. 2021. "Overview of Students' Topic Difficulties in Mathematics: A Case Study of Federal College of Forestry, Ibadan, Oyo State, Nigeria". *Pacific Journal of Science and Technology*. 22(1): 107-111. (Keywords: education, student views, overview, topics, difficulties, mathematics)
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Zhang, Y., L.E. Lombo, J. Singh and A. Mardon. 2021. "How COVID-19 Will Affect the Future of Universities". *Pacific Journal of Science and Technology*. 22(1):121-124. (Keywords: COVID-19, higher education, blended or hybrid learning model)

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Engineering and Material Science

Response Surface Regression Modelling of Orthogonal Cutting of Stainless Steel Using HSS Tool. Morakinyo Kehinde Onifade. (Keywords: stainless steel; HSS tool; response surface regression; tool life; surface roughness).

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Design of Single Effect Solar Still for Water Purification. Audu Ibrahim Ali; Ugwoke Emmanuel Eze; K.C. Onyeneho; I.C. Iloani (M.Eng In View); and A. Okpanachi. (Keywords: solar still, cover plate, distillate, design parameters, insolation).

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Energy and Power

Anaerobic Digestion of Potato Peel Waste for Methane Generation. Audu Ibrahim Ali; K.C. Onyeneho; I.C. Iloani (M.Eng In View); Ajibili Edibo Haruna; and E.C. Ugwuoke. (Keywords: anaerobic digestion, biogas, inoculum, potato peel, energy).

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Production of Biogas from Cassava Peels Blended with Goat Manure. K.C. Onyeneho; Okoh

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Physics and Atmospheric Physics

Radial Basis Function - Finite Difference (RBF-FD) Approximations for Two Dimensional Heat Equations. M.O. Durojaye and J.K. Odeyemi. (Keywords: Radial Basis Function, Gaussian (GA), Multiquadrics (MQ), Inverse Multiquadrics (IMQ) and Inverse Quadratic (IQ)).

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Verification of the Accuracy of an Instrument Landing System's Localizer: A Study of an International Airport in Nigeria. P.C. Amalu; C.O. Okonkwo; and O.M. Olayiwola. (Keywords: accuracy, ILS localizer, transmitter and receiver, runway centerline, course line, DDM deviation, frequency, equi-signal, in-flight, electromagnetic, and radiation).

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Mathematics and Statistics

On Hybrid Block Methods for the Solution of Optimal Control Problems. A.M. Alkali, Ph.D.; B.D. Shalom, M.Sc.; and D. Umar, M.Sc. (Keywords: optimal control, interpolation, collocation, convergent).

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Mathematical Modeling of Algae Population Dynamics on the Surface of Water. Nurat O. Abdurrahman M.Tech.; Ninuola I. Akinwande, Ph.D.; and Samuel A. Somma, Ph.D. (Keywords: exponential growth, phytoplankton, carrying capacity, growth rate, death rate, sink

Information Technology and Communications

Cyber Insecurity: End User Vulnerability Awareness and Perception Assessment. Dorothy E. Akpon-Ebiyonare, Ph.D. and Susan Konyeha, Ph.D. (Keywords: cyber security, threat, user awareness, vulnerability, cyber crime, security breach, social engineering).

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Use of Mobile Devices in Teaching and Learning in Traditional Higher Institutions in Nigeria. Susan Konyeha, Ph.D. and Dorothy E. Akpon-Ebiyonare, Ph.D. (Keywords: e-learning, smart phones, mobile devices, digital aids, m-learning).

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Augmented Reality: User Perception on Effectiveness in Educational Delivery Assessment in Kaduna. Martins E. Irhebhude, Ph.D.; Abdullahi, Fatima B.Sc.; Agwi, U. Celestine, M.Sc.; Adeola O. Kolawole, B.Sc.; and Lydia Mohammed, B.Tech. (Keywords: technology, augmented reality, AR, virtual reality, VR, teaching and learning, education).

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Management, Economics, and Education

An Evaluation of the Failure Pattern of Defunct Airlines in Nigeria. Akin Babatunde Adeoye and Abdulrahman Musa. (Keywords: airlines, operations, defunct, transport, aviation).

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Strategic Management Practices and Performance of Small and Medium Scale Enterprises (SMEs). Ola O. Oyedele, Ph.D.; Adenike F. Oyedele, Ph.D.; Olalekan A. Sotunde, M.Sc.; Kazeem O. Makinde, B.Sc. (Ed); Babatunde T. Fabinu, M.Sc.; and Oluwakemi O. Oladokun, M.Sc. (Keywords: strategic management practices, small and medium scale enterprises, performance and profitability).

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The Relationship of Strategy Formulation, Adoption, and Implementation to Small Scale Market Share Performance. Adenike F. Oyedele, Ph.D.; Olalekan A. Sotunde, M.Sc.; Ola O. Oyedele, Ph.D.; Oluwakemi O. Oladokun, M.Sc.; Kazeem O. Makinde, B.Sc. (Ed); and Babatunde T. Fabinu, M.Sc. (Keywords: strategy formulation, adoption implementation, business performance, and small business enterprises).

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Maximum Daily Cash Transaction Limit Enforcement in Nigeria Cash-Lite Economy. Oluwasogo Adekunle Okunade, M.Sc. (Keywords: multiple financial transaction, Bayes' Theorem, Central Bank of Nigeria, CBN, electronic payment).

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Entrepreneurship Education: A Viable Tool in Mitigating Rural-Urban Migration in Anambra State. Chinedu J. Ayolugbe; Ngozi J. Igwe; and Innocent U. Ishiwu. (Keywords: education, entrepreneur, entrepreneurship education, migration, and ruralurban migration).

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Assessment of Apprenticeship Training on Entrepreneurship Development in Ilobu, Osun State. Oyeniyi Aderonke Agnes, Ph.D. and Abdulsalam Kabirat Adenike, B.Sc. (Keywords: training, entrepreneurship, apprentice program, apprenticeship).

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Enhancing Quality University Education for Sustainable Development in Nigeria: Private Sector Roles and Challenges. Sarafadeen Segun Salami and Kamoru Abidoye Tiamiyu. (Keywords: private university, roles, challenges, sustainable development, higher education).

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Chemistry and Biochemistry

Extraction, Purification, and Preliminary Characterization of Dyestuff from *Adansonia digitata* Root (Baobaba). T.N. Alumona; N. Ekere; S.I. Ogbuefi; and I.I. Otunomo. (Keywords: Adansonia digitata, dye extraction, characterization, dyestuff, purification).

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Physicochemical Analysis of a Local Clay and its Utilization in Ceramic Tiles. G.N. Chikwelu ; T.U. Onuegbu; K.G. Akpomie; and E.L. Onyeyilim. (Keywords: physicochemical analysis, water absorption, apparent porosity, Mbaukwu clay, ceramic tiles).

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Ph.D.; A.I. Abioye, M.Sc.; A.A. Victor, M.Sc.; and S. Amadiogwu, M.Sc. (Keywords: infectious disease, Variational Iteration Method, Runge-Kutta method).

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Evolution of Exon 3 Region of Interferon Regulatory Factor-5 Gene in Nigerian Indigenous Chickens. Samuel Olutunde Durosaro, Ph.D.; Babatunde Moses Ilori, Ph.D.; David Oluwafemi Oguntade, M.Agric.; Ayotunde Olutumininu Adebambo, Ph.D.; and Michael Ozoje, Ph.D. (Keywords: chickens, evolution, exon, interferon regulatory factor-5, phylogeny, purines, genetic analysis).

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Effect of Moisture Content and Drying Methods on the Thermal Properties of African Walnut Flour. Anita C. Ezeagba, M.Eng.; Ike S. Oluka, P.Eng.; and Ejike P. Ide, M.Eng. (Keywords: specific heat, thermal conductivity, thermal diffusivity, African Walnut flour).

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Effect of Temperature Variation by Forced Air Dryer on Solar Drying of Okra. Ugwoke Emmanuel Eze; Audu Ibrahim Ali; I.C. Iloani (M.Eng In View); K.C. Onyeneho; and E.C Ugwuoke. (Keywords: okra, drying, preservation, temperature, solar drying).

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Effect of Feather Color on Heat Tolerance Traits and Growth Performance of Nigerian Indigenous Turkey. Babatunde Moses Ilori, Ph.D.; Samuel Olutunde Durosaro, Ph.D.; Clement Ebanehitah Isidahomen, Ph.D.; Nafisah Abiola Uthman, B.Agric.; David Temitayo Komolafe, B.Agric.; Kayode Akano, Ph.D.; and Prof. Michael Ohiokhuaobo (Keywords: poultry

Impact of Waste Dumpsite on Groundwater Quality in Ibadan, Southwestern Nigeria. Oluwatoyin Opeyemi Akintola, Ph.D. and Bodede Adewunmi Idayat. (Keywords: Anthropogenic influence, Dumpsite, Groundwater quality, Leachates, Public health).

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Investigation of Groundwater Quality in parts of Onitsha, Southeastern Nigeria. B.A. Igbomor and A.N. Amadi. (Keywords: groundwater, assessment, Onitsha, southeastern Nigeria).

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Effects of Trace Metal Compositions of Igneous Intrusions on Public Health in Ishiagu Area of the Southern Benue Trough, Southern Nigeria. I. Nwachukwu; V.U. Ukaebgu; and N. Egesi. (Keywords: geochemistry, geostatistical studies, environmental chemistry, bioaccumulation, health effects, trace metals).

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Geology, Geophysics, and Earth Science

A Review of the Heavy Mineral Provinces of the Paleogene Sediments, SouthEastern Nigeria: Factors Controlling the Distribution of the Heavy Minerals. Ogechi C. Ekwenye, Ph.D. and Ogechukwu C. Onyemesili, Ph.D. (Keywords: high resolution, heavy minerals, ultrastable, ultra-stable minerals, provinces, Paleogene, Niger Delta).

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Integrated Geophysical Investigation of Suspected Structurally Controlled Valleys within the Basement Complex Underlain Federal University, Oye-Ekiti, Southwestern Nigeria. Olaniyi D. Abiye, B.Sc.; Ademakinwa G. Oni, Ph.D.; and Martins O. Olorunfemi, Ph.D. (Keywords: integrated geophysics, geomorphic valleys, structure control, basement complex terrain). [**pjst20_2_319.pdf**](#)

Geophysical Evaluation of Foundation Soils in a Basement Complex Terrain: A Case Study of LAUTECH Campus, Ogbomoso, Southwestern Nigeria. Ismaila Abiodun Akinlabi, Ph.D.; Titilope Adegoke, B.Tech.; and Olusola Bolatan, B.Tech. (Keywords: geoelectric parameters, subsoil characteristics, foundation integrity, engineering structures, overburden thickness, bedrock relief). [**pjst20_2_332.pdf**](#)

Geoelectrical Prospecting for Shallow Aquifers in Otukpo, North-Central Nigeria. Ameh I. Mark, M.Tech. and Amadi A. Nwanosike, Ph.D. (Keywords: geoelectrical, resistivity, profile, Otukpo, 2D, well, Wenner, groundwater). [**pjst20_2_352.pdf**](#)

Geotechnical Investigation of Soils and Underlying Basement Rock for the Construction of Southern Parkway Bridge at Federal Capital Territory (FCT), Abuja, Northcentral Nigeria. Waheed Gbenga Akande; Olumuyiwa Temitope Akinsanpe; Adeyemi Israel Oyeniran; Yahaya Baba Alkali; Adekola Amos Alabi; and Ibrahim Asema Abdulfatai. (Keywords: Southern Parkway Bridge, federal capital territory, Nigeria, geotechnical survey, geotechnical analyses, strength, basement rock). [**pjst20_2_360.pdf**](#)

Lineament Analysis and Inference of Geological Structures in Bansara-Boki Area, Southeastern Nigeria. Oluwalope O. Ogbibia and N.

Anambra Basin and Southern Benue Trough, Nigeria. Martina O. Eze, Ph.D. and Ikechukwu B. Ijeh, Ph.D. (Keywords: magnetism, magnetic susceptibility, aeromagnetic, Benue trough).

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Engineering and Material Science

Solar Energy as an Alternative for Poultry Brooding in Nigeria and Chick Brooding Requirements: A Review. E.C. Ugwuoke; Audu Ibrahim Ali; Isah Edibo Alhaji; C.P. Ezeigwe; and N.P. Oputa. (Keywords: brooding, alternative energy, temperature, humidity, chicks, poultry rearing)

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Small Scale Solar-Powered Brooder. N.P. Oputa; Audu Ibrahim Ali; E.C. Ugwuoke; C.P. Ezeigwe; and Muhammed Shaibu. (Keywords: solar brooder, chicks, temperature, humidity, poultry farming)

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Solar Powered Refrigeration: Technical Challenges and Uses – A Review. Audu Ibrahim Ali; E.C. Ugwuoke; Muhammed Shaibu; C.P. Ezeigwe; and N.P. Oputa. (Keywords: solar refrigeration, absorption, electricity, cooling, photovoltaic technology)

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Automatic Rain Activated Wiper for Tricycle. D.I. Ntunde; E.C. Ugwuoke; F.A. Folaranmi; A. Okpanachi; and N.P. Oputa.
(Keywords: motorized tricycles, Keke Napep, windshield wipers, automatic wiper, transportation, safety, visibility)
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Energy and Power

Analysis of Power Plan Capabilities in Nigeria's Electric Grid System for Energy Security.
C.U. Okoye. (Keywords: forecast values, installed capacity, peak generation, available capacity)
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Mathematics and Statistics

An Efficient Hybrid Algorithm for the Computation of Second-Order Fredholm Integro-Differential Equations. J. Sunday; Y. Skwame; O. Sarjiyus; I. Manga; J.A. Mohammed; and B.J. Neils. (Keywords: algorithm, Fredholm equations, hybrid integro-differential equations, second-order) (AMS Subject Classification: 65L05, 65L06, 65D30)
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Least Squares Method and Homotopy Perturbation Method for Solving Fractional Integro-differential Equations. T. Oyedepo, M.Sc.; O.A. Taiwo, Ph.D.; A.F. Adebisi, Ph.D.; C.Y. Ishola, M.Sc.; and O.E. Faniyi, M.Sc. (Keywords: Bernstein polynomials, numerical studies, least squares method, homotopy perturbation)

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On the Doubly Truncated Exponential Pareto Distribution. A.A. Akomolafe and A. Maradesa.

(Keywords: doubly truncated exponential Pareto distribution, reliability function, hazard function, maximum likelihood estimation)

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An Alternative Solution to Hotelling T Square under the Heteroscedasticity of the Dispersion Matrix. P.O. Adebayo and G.M.

Oyeyemi. (Keywords: variance, co-variance matrix, linear combination, type 1 error rate, power the test, heteroscedasticity, R statistical package)

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A Mathematical Study to Obtain a True Numerical Value of “e” used for Exponential Expression and as a Base for Napierian or Natural Logarithms. John James Essien and Umana Thompson Itaketo. (Keywords: mathematics, series, exponential expression, “e”, logarithm, binomial theorem, infinity, limit)

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Comparison of Some Spike-and-Slab Priors for Bayesian Variable Selection in Multiple Linear Regression. G.M. Oyeyemi; Y.A. Olanrewaju; and R.O. Kolawole. (Keywords: covariates, posterior distribution, precision, regression coefficients, spike-and-slab priors)

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Obodoh, M.Sc.; and Chris Ejimnkonye Okorie, B.Tech. (Keywords: barriers, construction projects, lean, RII construction management, relative importance index)

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Access to Land for Sustainable Agriculture Practices in Nigeria. Olugbenga Adewale Adewoye. (Keywords: agricultural practices, land, land tenure, sustainable economic development)

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Households' Demand for Fruits and Vegetables in Urban Nigeria. Adekemi A. Obisesan, Ph.D. (Keywords: fruits, vegetables, expenditure, elasticity, urban, Nigeria, dietary components, food economics)

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Assessment of Level of the Knowledge, Utilization and Barriers of Nursing Process as a Tool for Effective Nursing Care Among Nurses in University of Maiduguri Teaching Hospital, Maiduguri, Nigeria. A. Inuwa, M.Ed./M.Sc.; H. Habu, MHPM; O.C. Emmanuel, M.Sc.; B. Maigari, M.Sc.; H. Dathini, M.Sc.; A. Haruna, M.Ed. (in view); and N. Lola, M.Sc. (Keywords: nursing process, level of knowledge, utilization, barriers, nursing education)

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Maximum Daily Cash Transaction Enforcement in Nigeria Cash-Lite Economy. Oluwasogo Adekunle Okunade, M.Sc. (Keywords: multiple financial transactions, Bayes' theorem, Central Bank of Nigeria, CBN)

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The Logistics Strategy and the Growth of E-Commerce in Nigeria. Bashiru Akande Bello, Ph.D.; Ifelara Adebola Rotimi; and Boluwatife O. Omoniyi. (Keywords: logistics, electronic commerce, economic activities, competency assessment, questionnaire research, Jumia Nigeria)

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Assessment of Urban Households' Involvement in Micro-Enterprises in Ibadan Metropolis, Oyo State, Nigeria. Roseline J. Akinlade, Ph.D. (Keywords: micro-enterprises, urban households, involvement, Ibadan metropolis, Nigeria)

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A Review of the Nigerian Business Environment and its Support for Small and Medium Enterprises. Linus Izediuno Okafor (Keywords: business, entrepreneurship, small business, medium business, business environment, business climate, SMEs)

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Gender Differences in the Technical Efficiency and Profitability of Yam Production among Farmers in Ikole-Ekiti Local Government Area, Ekiti State, Nigeria. Oluwakemi Oduntan, Ph.D. (Keywords: efficiency, Ekiti State, farmers, profitability, yam production, Nigeria)

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Effectiveness of Social Media Applications on Improvement of Technical Education Lecturer-Student Relationships in Nigerian Universities. Bamidele Michael Efuwape, M.Sc. Ed. and Oluwabunmi Asake Efuwape, M.Ed. (Keywords: effectiveness; social media applications; technical education lecturers; technical education students; Nigeria, Nigerian universities)

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Chemistry and Biochemistry

Application of Solar-Irradiated Photocatalyst (Periwinkle Shell Ash) for the Degradation of Ethylbenzene in Aqueous Solution. Felix A. Aisien, Ph.D. and Jude O. Osarumwense, Ph.D. (Keywords: ethylbenzene, periwinkle shell ash, degradation, photocatalysis, L-H model)

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Life Sciences and Medicine

Length Base Structure and Growth Parameters of *Sarotherodon galilaeus* (Pisces: Cichlidae) in Tropical Coastal Estuary, Nigeria. W.O. Abdul; I.T. Omoniyi; A.O. Bashir; A.A. Makinde; E.O. Adekoya; T. Owoade; and J.T. Oriyomi. (Keywords: Bhattacharya's, length distribution, growth index, *Sarotherodon galilaeus*, tropical, fisheries, stock assessment, cichlids, big man fish)

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Estimating the Age of Toll-Like Receptor 5 Variants in N'Dama and Other Taurine Cattle. Babatunde Moses Ilori, Ph.D.; David Oluwafemi Oguntade, (M.Agric. in view); Samuel Olutunde Durosaro, Ph.D.; Clement Ebanehitah Isidahomen, Ph.D., and Adebisi Adeleye, (M.Agric. in view)

Sowing Date. Oluwafemi Okukenu, Ph.D.; Peter Dele, Ph.D.; Bolanle Akinyemi, Ph.D.; Abiola Olajide, Ph.D. (in-view); Olufemi Onifade, Ph.D.; Oluwatoyin Ogunrombi, M.Agric.; Aanuoluwapo Adekale, M.Agric.; and Michael Kolade, M.Agric. (Keywords: *Tephrosia bracteolata*; phosphorus fertilizer; application rate; plant parts)

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Proximate and Fiber Composition of Four Sorghum Cultivars as affected by Age at Harvest. Bolanle Akinyemi, Ph.D.; Oluwafemi Okukenu, Ph.D.; Peter Dele, Ph.D.; Alaba Jolaosho, Ph.D.; and Tomisin Odebode, B.Agric. (Keywords: sorghum, cultivars, age at harvest)

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Sensory Evaluation of Chicken Sausage as Influenced by Levels of Inclusion of African Basil (*Ocimum gratissimum*) Leaf Powder. Olufunke Dele, M.Agric.; Olufemi Akinola, Ph.D.; and Samuel Abiola, Ph.D. (Keywords: African basil leaf powder, ABLP, seasoning, chicken sausage, food science)

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Effects of Seed Weights on Germination Rate and Seedling Vigor of Cashew (*Anacardium occidentale* L.). J.I. Oyekale, M.Tech. and A.I. Okunlola, Ph.D. (Keywords: cashew seed, weight, germination rate, seedling vigor)

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Studies on the Yield and Nutritional Properties of some Local Seeds: Effects of Drying Systems. F.U. Asoiro; C.J. Ohagwu; U.C Abada; and L.O. Okafor (Keywords: flavonoid, phenolic content, oil yield, hot air oven, drying methods, protein content, Soxhlet extractor)

hydrocarbon, microorganisms, degradation, bioremediation, bacteria)

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Geology, Geophysics, and Earth Science

Petrography and Structural Features of Migmatites, Granites and Granite Gneisses at Osokom and its Environs Bansara area Southeastern Nigeria. N. Egesi Ph.D. (Keywords: rock features, petrographic analysis, basement/sedimentary rocks contact, Bansara area, southeast Nigeria)

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Geotechnical Properties and Effects of Palm Kernel Shell Ash and Cement on Residual Soils in Pavement Construction along Owo-Ikare Road, Southwestern Nigeria. Omowumi Ademila, Ph.D. (Keywords: Stabilization, residual soil, palm kernel shell ash, cement, road pavement, geotechnical properties)

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Structural Characteristics of Parts of the Abakaliki Area South-Eastern Nigeria. N. Egesi, Ph.D. (Keywords: *Abakaliki anticlinorium*, rock types, structures, deformation, magmatism, SE, Nigeria)

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Determination of Temperature Variation of a Box-Type Solar Cooker. E.C. Ugwuoke; C.M. Aburu; I. Ofili; N.P. Oputa; and Muhammed Shaibu. (Keywords: conventional fuel, solar cooker, radiation, renewable energy and food)

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Energy and Power

Anaerobic Digestion of 500 Gallons of Reactor Wastewater Sewage Sludge. E.C. Ugwuoke; S.A. Ogunjobi; N.P. Oputa; I. Ofili; and A. Okpanachi. (Keywords: wastewater, sewage sludge, inoculum, biogas, anaerobic digestion)

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Factors Affecting Biogas Production: A Review. S.A. Ogunjobi; E.C. Ugwuoke; C.P. Ezeigwe; I. Ofili; and N.P. Oputa. (Keywords: biogas, nutrients, temperature, loading rate, inhibitors)

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Mathematics and Statistics

Solution of Cholera Disease Model by Parameter Expansion Method. A.A. Ayoade, Ph.D.; O. Amadiogwu,

Information Technology and Communications

Automatic Tuning of Proportional–Integral–Derivative Controller using Genetic Algorithm. Joseph Stephen Bassi, Ph.D. and Emmanuel Gbenga Dada, Ph.D. (Keywords: PID Tuning, genetic algorithm, evolutionary computation, Siegler–Nichols method, optimization)

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A Survey Analysis of Recognition–Based Graphical Password Art–form Design Attributes. Annie O. Egwali, Ph.D. and John B. Odetayo, M.Sc. (Keywords: graphical password models, art–forms, interfaces, design, usability, security, authentication)

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Appraising Software Product Quality Models Involving Users Perspective: (A Case Study of Authentication Models). Annie O. Egwali, Ph.D.* and Winifred R. Sule, M.Sc. (Keywords: authentication, quality, software product, user, biometrics, software quality, WEBUSE)

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A Proposed Method of Biometric Authentication System using Multi–Modal Features. Dele W.S. Alausa, M.Sc. (Keywords: biometric authentication system, multimodal, fusion, classifiers, trait, security)

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Logistic Model Tree Induction Machine Learning Technique for Email Spam Filtering. Emr..., Ph.D. and

Safety-Critical Model for Process Validation in Paracetamol 500mg Tablet Manufacturing. Annie O. Egwali, Ph.D. and Kingsley C. Nwaekwu, M.Sc. (Keywords: safety, Paracetamol, fuzzy pattern recognition, performance, quality, simulation)

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Projecting Student Population Using Artificial Neural Network. Annie O. Egwali, Ph.D. and Macdonald I. Enabulele, M.Sc. (Keywords: prediction, education, expansion, population, neural network, growth, projection)

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Development of an Android-Based E-Learning System for the Hausa Language. Yakub K. Saheed, Ph.D.; Mustapha Aisha, B.Sc.; and M.O. Alimi, Ph.D. (Keywords: e-learning, PHP, Android, Hausa language)

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Social Networking Challenges and Evaluation. Annie O. Egwali, Ph.D. and Veronica I. Osubor, Ph.D. (Keywords: usability, website, electronic media, social networking, social media, Facebook, Twitter)

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Management, Economics, and Education

Quality and Quality Control in Production: A Review. N.P. Oputa; I.C. Iloani; E.C. Ugwuoke; S.A. Ogunjob; and I. Ofili. (Keywords: production, quality, quality control, quality assurance, reliability)

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Demographic Factors and Organizational Citizenship Behavior in the Wire and Cable Industry in Southwestern Nigeria. Bashiru Akande Bello; Adedayo Mathias Opele; and Caleb I. Orukotan. (Keywords: citizenship, behavior, demographic, employees, productivity)

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Determinants of Technical Efficiency of Shoemaking Enterprises among Small Scale Entrepreneurs in Ondo State, Nigeria. Olubukola Omotinuke Ehinmowo, Ph.D. (Keywords: technical efficiency, TE, shoemaking, stochastic frontier production, Ondo State, Nigeria)

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An Assessment of the Causes and Effects of Abandonment of Road Construction Projects in Osun State Nigeria. Olumide F. Odeyinka; Olalekan Adedamola Oluwaji; and Falade Omokolade D. (Keywords: construction management, road development, project abandonment, public works)

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Preparing Successor and Family Business Sustainability in South-East, Nigeria. Nkiruka E. Ifekwem. (Keywords: family business, small business, successor planning, business sustainability, continuity of operations)

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Assessment of Transformational Leadership and Leadership Style on Business Organizations' Significant and Positive Change. Oluwakemi O. Oladokun, M.Sc.; Anthony O. Sotunde, M.Sc.; and Kazeem O. Makin (Keywords: visionary

Essentials of Strategic Change Management and Employees Resistance on the Operations of Business Organizations.

Oluwakemi O. Oladokun, M.Sc.; Anthony O. Sotunde, M.Sc.; and Kazeem O. Makinde, B.Sc.(Ed). (Keywords: strategic change management, employee resistance, operations, business organizations, decision making)

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A Study of Customers' Assessment of Quality Practices of Fast Food Entrepreneurs in Southwestern Nigeria. Tolutope O.

Fakokunde, Ph.D. (Keywords: quality assurance, ratings, total quality management, standards, fast food, entrepreneurs)

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Automated Revenue Collection System: A Case Study of Edo State Jobs Initiative. Annie O. Egwali, Ph.D. and Kareem Otokiti, M.Sc. (Keywords: revenue, Oredo, Egor, automated, epayments, non-tax)

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Influence of Social Capital on Performance of Micro and Small-Scale Enterprises in Osun State, Nigeria . R.J. Akinlade, Ph.D.

(Keywords: social capital, business performance, micro-scale, small-scale enterprise, Nigeria)

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Skills Development Needs of Technical Education Lecturers in use of Technology Facilities and Social Media for Instructional Activities in Nigeria. Kehinde I. Omoniyi; Nsidibeabasi C. Nwokem; Yusuf O. Usman; and Olanipekun O. Idowu. (Keywords: date palm seed, lignocellulosic, bioalkali, plantain peel, reducing sugars)

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dactylifera Seed Pit. Kehinde I. Omoniy; Nsidibeabasi C. Nwokem; Yusuf O. Usman; and Olanipekun O. Idowu. (Keywords: kinetic studies, equilibrium, zinc, lead, bioremediation, heavy metals)

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Total Alkaloids, Tannin Content, and Antiulcer Assay of Four Selected Medicinal Plants in Nigeria. Benjamin E. Ezema; Chidimma N. Ezema; Priscillia N. Abuekwu; Matthias O. Agbo; and Kovo G. Akpomie. (Keywords: *Acanthospermum hispidum*, *Pachypodanthium staudtii*, *Phaseolus lunatus*, *Euphorbia deightonii*, antiulcer, cytoprotective ability)

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Life Sciences and Medicine

Botanical Composition, Dry Matter Yield, and Soil Physio-Chemical Properties of Natural Grazing Areas under Sedentary Pastoral System at Different Seasons in South-West Nigeria. Oluwafemi Okukenu, Ph.D.; Peter Dele, Ph.D.; Bolanle Akinyemi, Ph.D. (in-view); Abiola Olajide, M.Agric.; Oluwatoyin Ogunrombi, B.Agric.; and Aanuoluwapo Adekale, B.Agric.. (Keywords: natural pasture, location, season, forage quality, range land, feed resources)

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Proximate and Fiber Composition of Pennisetum purpureum Varieties in Stylosanthes guianensis Mixed Sward Fertilized with Two Manure Types. Taiwo Oyekunle, M.Agric.; Oluwafemi Okukenu, Ph.D.; Peter Dele, Ph.D.; Oluwayemisi Aderinboye Ph.D.; Abiola Olajide, M.Agric.; Oluwatoyin Ogunrombi, B.Agric.; Alaba Jolaosho, Ph.D.; and Aanuoluwapo Adekale, B.Agric. (Keywords: elephant grass, napier grass, cook stylo, fertilizer, manure, grass, legume, inter

Feed Blocks. Adekunle Akinlolu, (Ph.D. in view); Oluwasanmi Arigbede, Ph.D.; Dele Peter, Ph.D.; Ayotunde Ogunsakin, (Ph.D. in view); Olumuyiwa Ogunbote, (M.Agric. in view); and Micheal Kolade (M.Agric. in view). (Keywords: toasted *Enterolobium cyclocarpum* seed meal, TECSM, *E. cyclocarpum* foliage meal, ECFM, feed block)

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Chemical Composition of *Panicum maximum* as Influenced by Poultry Manure Rate and Age at Harvest. Peter Dele, Ph.D.; Bolanle Akinyemi, Ph.D.; Oluwafemi Okukenu, Ph.D.; Tunde Amole, Ph.D.; Adekunle Akinlolu Ph.D. (in-view); Gideon Sarumi, M.Agric. (in-view); Foluke Salawu, B.Agric.; and Chika Anotaenwere, B.Agric. (Keywords: manure, salinity, chelate, fiber, guinea grass)

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An Analysis of the Consequences of the Herdsmen–Farmers Crisis in North Central Nigeria using Agent – Based Modelling. Jonathan A. Enokela, Ph.D. (Keywords: herdsmen, farmers, crisis, conflict, agent based modeling)

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Comparative Studies on the Chemical Composition of *Chrysophyllum albidum* Seed and Five Different Melon Seeds. A.A. Taiwo, Ph.D.; J.O. Ayeni, B.Sc.; O. Osifeso, Ph.D.; and J.A Oyedepo, Ph.D. (Keywords: *Chrysophyllum albidum*, *Curcubit species*, nutrients, anti-nutrients)

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Social Exchange Theory: The Transactional Nature of the Quandary Situation Between Poverty and Adolescents' Sexual Behavior. Olukemi Grace Adebola, Ph.D. (Keywords: adolescents, poverty, sexual behavior,

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Environmental Science and Ecology

Application of Project Management Techniques to Environmental Impact Assessment (EIA) Methodologies: A Case Study of the Installation of Solar Panels in Afe-Babalola University Ado-Ekiti, Ekiti State. Olumide F. Odeyinka; Adeleke Akinyele; and Onosetale Aiwanose Okpamen. (Keywords: Environmental Impact Assessment, EIA, methodologies, critical path method, Gantt chart, expost facto technique, project management tools and techniques)

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GIS in Modern Zoological Park Management: Case Study of the Federal University of Agriculture, Abeokuta, Nigeria. John A. Oyedepo, Ph.D. and M.O. Oyatogun, Ph.D. (Keywords: geographical information systems, GIS, zoological park, environmental data, spatial data modeling)

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GIS-Supported Survey and Biodiversity Assessment in a Derived Savannah Ecosystem. V John A. Oyedepo, Ph.D.; Moses O. Oyatogun, Ph.D.; Abimbola O. Jayeola, Ph.D.; and Olusegun Oladoye, Ph.D. (Keywords: ornamental gardens, ornamental plants, exotic species, native species, Southwest Nigeria)

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Palynostratigraphy and Palynoenviromental Study of Adeobak-2 Well, Offshore Niger Delta, Southern Nigeria. O.C. Adeigbe, Ph.D. and K.A. Obakhume, B.Sc. (Keywords: palynomorphs, paleoenvironments, palynozones, Oligcene, Miocene, PMI)

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Engineering and Material Science

Control Modeling of Fluid Temperature in Heat Exchangers. I.E. Ohue, M.O. Petinrin, O.E. Zebulun; and R.A. Kazeem. (Keywords: feed-forward controller, MATLAB, heat exchanger, SIMULINK)

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Environmental Waste Management through the Utilization of Waste Plastics Polyethylene Terephthalate (PET) and Low Density Polyethylene (LDPE) as Partial Replacement of Sand in the Production of Concrete Blocks. I.K. Ejiogu, P.A. Mamza, P.O. Nkeonye, and A.S. Yaro. (Keywords: waste plastics, environmental waste management, concrete blocks, compressive strength)

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Comparative Study of Various Methods for Designing and Proportioning Normal Concrete Mixture. I.K. Ejiogu, P.A. Mamza, P.O. Nkeonye, and A.S. Yaro. (Keywords: ACI method, aggregate cement ratio, DOE method, concrete)

Optimal Allocation of SVCs in Transmission Networks Considering System Loadability using Exponential Adaptive Bacterial Foraging Algorithm. U. Musa, A.A. Mati, S.M. Aminu, and A. Mohammad. (Keywords: Static Var Compensator, Exponential Adaptive Bacterial Foraging Algorithm, Loadability, Newton-Raphson Power Flow)

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The Effect of pH, Volatile, and Total Solid in Cumulative Yield of Methane. I. Ofili, E.N. Anike, C.B. Ugwuodo, K.C. Onyencho, and F.C. Umunna. (Keywords: biogas, cow dung, anaerobic digestion, slurry temperature, ambient temperature)

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Trade-Off between Gas Production and Gas Flaring in Nigeria. F.B. Adebola and E.I. Olamide. (Keywords: gas flaring, gross domestic product, per capita income, investment, econometric model, statistical inference)

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A 100 Liter Capacity Solar Water Heater for a Household of Three Individuals. C.B. Ugwuodo, E.C. Ugwuoke, E.N. Anike, K.C. Onyencho, and F.C. Umunna. (Keywords: solar water heater, insolation, ambient temperature, collector, water)

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Physics and Atmospheric Physics

Estimating the Time of Death using the Lump System Analysis. G.I. Olatona and A.O. Popoola

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Mathematics and Statistics

A Study of Asymptotic Distribution of Tau () Agreement Index. A.A. Akinloye, A.O. Adejumo, O.O.M. Sanni, and E.T. Jolayemi. (Keywords: agreement, confidence bound, beyond chance, asymptotic distribution, Tau statistic, raters, inverse theorem)
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On Bayesian Analysis of Univariate Longitudinal Clinical Data (ULCD). G.A. Dawodu, O.M. Olayiwola, and O.E. Asiribo. (Keywords: Bayesian analysis; ULCD; Markov Chain Monte Carlo, MCMC simulations; probability density distribution, PDF, rjags)
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Some Robust and Classical Nonparametric Procedures of Estimations in Linear Regression Model. F.B. Adebola, E.I. Olamide, and O.O. Alabi. (Keywords: least absolute deviation, least trimmed squares Monte Carlo simulation, ordinary least squares, regression analysis Theil's non-parametric, weighted Theil's non-parametric procedures)
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A New Robust Method for Estimating Linear Regression Model in the Presence of Outliers. T. Alanamu and G.M. Oyeyemi. (Keywords: robust regression, case indicator, Ridge regression, outlier)
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Homotopy Perturbation Method for Solving SIR Infectious Disease Model by Incorporating Vaccination. O.J. Peter and A.F. Awoniran. (Keywords: SIR infectious disease model, epidemic model, homotopy perturbati

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Local Stability Analysis of a River Blindness Disease Model with Control. F.A. Oguntolu, G. Bolarin, S.A. Somma, and A.O. Bello. (Keywords: basic reproduction number; disease free equilibrium; river blindness; stability)

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Information Technology and Communications

Application of RFID Technology and GSM Network to Control Maintenance Activities of Radio Networks. S. Moradi and E.S. Eneyo. (Keywords: GSM, global system for mobile communication, BTS, base transceiver station, RFID, radio-frequency identification, preventive maintenance)

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Arduino UNO Microcontroller Based Automatic Fish Feeder. E.G. Dada, N.C. Theophine, and A.L. Adekunle. (Keywords: Arduino UNO, automatic fish feeder; aquarium; fish ponds; feeding)

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A Stochastic Collocation Algorithm Method for Processing the Yoruba Language Using the Data Context Approach Based on Text, Lexicon, and Gramma. O.A. Enikuomihin and O.O. Adewumi. (Keywords: Yoruba, lexicon, part of speech, collocation algorithm, WordNet, hidden Markov model)

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Individual and Organizational Acceptance of Technology Theories and Models: Conceptual Gap and Possible Solutions. A.E. Ewwiekpaefe, S.C. Chiemeké, and M.Z. Haruna. (Keywords: acceptance, gap, individual, model, organizational, technology)
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Management, Economics, and Education

Technology Transfer and Entrepreneurial Development in the Value Chain System of the Nigerian Oil and Gas Industry. Z. Abu, I.I. Aun, and O.O. Oluwasanmi. (Keywords: technology transfer, oil and gas entrepreneurship, value chain)
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A Genetic Neuro Fuzzy Approach for Handling the Nurse Rostering Problem. F.I. Amadin. and M.E. Bello. (Keywords: nurse rostering; genetic algorithm; neuro-fuzzy system)
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University Education vs Students' Productivity in Computing: The Environment as a Judge. A.C. Obieniu and F.I. Amadin. (Keywords: computer science, learning environment, school activities, guardian support, student productivity)
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A Principal Component Analysis of Lean Six Sigma Tools and Techniques. O.F. Odeyinka. and C. Nwoye. (Keywords: Lean Six Sigma, LSS, principal component analysis, PCA)

ambient condition, transit system, public transportation)

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Chemistry and Biochemistry

Kinetic and Equilibrium Studies of the Adsorption of Pb (II) and Zn (II) from Aqueous Solution onto Plantain Stalk (*Musa paradisiaca*). E.O. Benson. (Keywords: kinetic studies, equilibrium, zinc, lead, bioremediation, heavy metals)

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Effect of Fermentation on Nutritional Composition of African Oil Bean Seed. G.O. Mbah, U.A. Onyeabo, and B.C. Udeh.

(Keywords: oil bean seed, fermentation, nutritive values, physico-chemical properites)

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Characterization of Mbaukwu Clay from Awka-South Anambra State Nigeria for Industrial Purpose. G.N. Chikwelu, T.U. Onuegbu, C.C. Ezeofor, and K.G. Akpomie. (Keywords: Mbaukwu clay, refractory, industrial use)

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Life Sciences and Medicine

Proximate and *In Vitro* Gas Production of Toasted *Enterolobium cyclocarpum* based Multi-N

Proximate and Fiber Composition of *Panicum maximum* and *Centrosema molle* Silage as Affected by Different Proportions and Ensiling Periods. O. Okukenu, O. Ogunrombi, P. Dele, B. Akinyemi, A. Olajide, O. Onifade, and A. Jolaosho. (Keywords: *Panicum maximum*, *Centrosema molle*, forage proportion and ensiling periods)

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Effect of Replacing Back Fat of Cattle with Abdominal Fat on Quality Characteristics of Beef Sausage. O. Dele, O. Sogunle, T. Saka, and S. Abiola. (Keywords: abdominal fat, back fat, beef sausage, food science)

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Solar Drying of Potato using Solar Dryer. C.M. Aburu, U.E. Nsuabia, E.I. Ugwoke, J.C. Abia, and C.P. Ezeigwe. (Keywords: solar drying, open air drying, crops, energy, wet weight, dry weight)

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Nanotechnology in Medical Practice. O.D. Oladimeji and A. Adedoyin. (Keywords: nanotechnology, medicine, medical practice, stratified random sampling survey)

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Relationship between Occupational Stress, Job Satisfaction, Alcohol Consumption, and Domestic Violence among Police Officers in Ikeja, Lagos State, Nigeria. S.A. Odedokun. (Keywords: law enforcement, police officers, occupational stress, job satisfaction, alcohol consumption, domestic violence, physical health, mental health)

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Environmental Science and Ecology

Desalting of Brackish Water. E.N. Anike, C.B. Ugwuodo, K.C. Onyeneho, F.C. Umunna, and F.A. Folaranmi. (Keywords: desalting, desalinization, brackish water, solar radiation, temperature, distillate)

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Bioremediation Potentials of a Petroleum Hydrocarbon Polluted Soil by *Aspergillus oryzae* (JQ675305.1) Isolated from Diseased *Irvingia gabonensis* Seeds. A.A.A. Sanyaolu, A.A. Adekunle, and A.A. Osuntoki. (Keywords: mycoremediation, *Aspergillus* sp., oil pollution, total petroleum hydrocarbon (TPH), *Irvingia gabonensis*, soil macronutrients)

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A Survey of the Most Common Ornamental Plants in Southwest Nigeria. V.T. Sanyaolu, R.O. Awodoyin, and S. Ogunyemi. (Keywords: ornamental gardens, ornamental plants, exotic species, native species, Southwest Nigeria)

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With Inclusion and Equity, can Sustainable Development Goals (SDGs) Flower within the Planetary Boundaries? N. Havaligi. (Keywords: Sustainable Development Goals, SDGs, Planetary Boundaries, biodiversity, water resources, climate change, agriculture, environmental management, sustainability, inclusivity)

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“Hydrogeochemical Investigation of Groundwater Resources in Umunya and Environs of the Anambra Basin, Nigeria. M.E. Egbunike. (Keywords: groundwater, quality, phsico-chemical analyses, lithostratigraphic, formation, geochemistry)

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Unravelling the Sedimentary Facies of the Tidal Channel and Tidal Flat Deposits within a Macrotidal Estuarine Setting: The Nanka Formation, South-Eastern Nigeria. O.C. Ekwenye and O.C. Onyemesili. (Keywords: tide generated sedimentary structures, tidal range, hydrodynamic processes)

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Engineering and Material Science

Dynamic Behavior of Brushless DC Motor under the Application of PI, PD, PID, and Fuzzy Logic Controllers. Philip A. Adewuyi, M.Sc. and Emmanuel O. Lawani, B.Eng. (Keywords: PI controller, PD controller, PID controller, fuzzy logic controller, brushless DC motor, BLDC)

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Development of an Intelligent Obstruction Detection System for Automobiles. O.O. Shoewu; S.O. Olatinwo; and D.D. Olatinwo (Keywords: obstruction and intrusion detection, sensors, microcontroller, MPLAB)

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Energy and Power

X-Ray Digester Types and Anaerobic Digestion of Pig Manure. C.B. Ugwuodo; E.C. Ugwuoke; B.I. Onyia; I. Ofili; and P.I. Okoh. (Keywords: bio-digester, pig manure, total solid, pretreatment, biogas, renewable energy)

[pjst18_2_33.pdf](#)

Optimization of the Fermentation Conditions for the Production of Bioethanol from Cane Sugar Molasses using *Saccharomyces cerevisiae*. C.O.B. Okoye; O.L. Alum; K.G. Akpomie; and T.N. Alumona. (Keywords: bioethanol, fermentation, *Saccharomyces cerevisiae*, substrate, sugar molasses)

[pjst18_2_48.pdf](#)

Physics and Atmospheric Physics

Influence of Magnetic Field on Couple Stress Flow through Porous Channel with Entropy Generation. Jacob A. Gbadeyan and Abiodun A. Opanuga. (Keywords: magnetohydrodynamic, porous channel, entropy generation, differential transform method, DTM, Adomian decomposition method, ADM)

[pjst18_2_57.pdf](#)

Design and Development of a 2.4 GHz Slot Antenna. L.A. Akinyemi; O.O. Shoewu; A.A. Ajasa

Keywords: slot

Mathematics and Statistics

A Four-Stage Gauss-Lobatto Integral with Accurate Error Estimation Formula for ODES. S.A. Agam, Ph.D. (Keywords: Gauss-Lobatto polynomials, quadrature points, collocation method, Runge Kutt f-evaluations, error estimation, highly efficient, Astable)

[pjst18_2_78.pdf](#)

A Bootstrap Method for Box-Jenkins Models with Application on Brent Crude Oil Prices per Barrel. Adebowale Olusola Adejumo and James Daniel. (Keywords: autocorrelation, partial autocorrelation, autoregressive integrated moving average, ARIMA, autoregressive moving average, ARMA, autoregressive, AR, moving average, MA, differencing, Brent crude oil, stationary series, bootstrap, block bootstrap, nonoverlapping block bootstrap, moving block bootstrap, circular block bootstrap, stationary block bootstrap, sieve bootstrap)

[pjst18_2_88.pdf](#)

Stability Analysis of Disease Free Equilibrium (DFE) State of a Mathematical Model of Yellow Fever Incorporating Secondary Host. Samuel Abu Somma, M.Tech.; Ninuola Ifeoluwa Akinwande, Ph.D.; Mohammed Jiya, Ph.D.; and Sirajo Abdulrahaman, Ph.D. (Keywords: PI controller, PD controller, PID controller, fuzzy logic controller, brushless DC motor, BLDC)

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Information Technology and Communications

Generative Power of Context-Conditional Grammars. R.O. Oladele and B. Yusuf. (Keywords: formal languages, generative power, context-conditional grammars)

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Wireless Network Modelling and Analysis using Path Loss Models. S.O. Olatinwo; L.I. Oborkhale; and O.O. Shoewu. (Keywords: path loss, COST231 model, COST WI model, free space model)

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Analysis of Outdoor Path Loss Measurements for Triple Frequency Spectrum in Lagos State. O.O. Shoewu; L.I. Oborkhale; N.O. Salau; and O.O. Bashorun. (Keywords: global system for mobile communication, GSM, modelling, propagation environment, KPI, Rxlev, RSSI, pathloss)

[pjst18_2_144.pdf](#)

Analysis and Prediction of Indoor wireless Propagation Using adaptive NeuroFuzzy Inference System. O.O. Bashorun; O.O. Shoewu; W.A. Alao; L.I. Oborkhale; and N.O. Salau. (Keywords: RSSI, ANFIS, RMSE, Chi-Square, SNR, Path-Loss)

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Gap Analysis of the Service Quality of a University ICT Centre in Nigeria. O.V. Mejabi, Ph.D.; Ismaeel A. Sikiru, B.Sc.; and O.D. Agbeti, B.Sc. (Keywords: quality of service, QOS, information, communications, technology, university, center)

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training, organizational
survival, management support, industry)

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Modeling and Forecasting the Production Volume of 7up Bottling Company Nig. PLC: A SARIMA Models Approach. A. Maradesa and A.A. Akomolafe. (Keywords: Akaike' Information Criterion, AIC, Bayesian Information Criterion, BIC, white noise, Kwiatkowski-Phillips-Schmidt-Shin, KPSS, Jarque Bera test, Augmented Dickey Fuller, ADF)

[pjst18_2_199.pdf](#)

Organizational Reward and Job Tension among Nigerian Agriculture Researchers: Implications on Personnel Work-Attitudes. Oluwatoyin Aduke Oso, Ph.D.; Richard Akinwunmi Oyeyinka, Ph.D.; Okanlade Adesokan Lawal-Adebowale, Ph.D.; and Dare Akerele, Ph.D. (Keywords: agriculture researchers, job satisfaction, job tension, organizational commitment, organizational reward)

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Impact of Economic Recession on the Marketing of Pharmaceutical Products in Kwara State, Nigeria. Isaac Iortimbir Aun, Ph.D.; Zakeri Abu, Ph.D.; Taiwo Ganiyu Oladipo, Ph.D.; and Sunday John Akpan, Ph.D. (Keywords: economic recession, marketing, pharmaceutical products)

[pjst18_2_229.pdf](#)

Non-Parametric Testing: A Case Study of Extended Analysis for Ranked Data with Ties. A.A. Akomolafe; F.B. Adebola; and O.I. Oseghale. (Keywords: rank effect, linear constant, Friedman analysis, nonlinear effect, uml

Fashola, Ph.D. (In View). (Keywords: traffic, passengers, congestion, public transport)

[pjst18_2_246.pdf](#)

Discrimination of People Living with HIV/AIDS by Health Care Students of Islamic University in Uganda. A. Inuwa, M.Ed.; L.A. Nafiu, Ph.D.; H. Habu, MHPM; B. Maigari, M.Sc.; A. Haruna, BNSc.; A.A. Gagare, Ph.D.; M.K. Aisha, BNSc.; and N. Sarah, D.Med.. (Keywords: HIV/AIDS, knowledge, attitude, discrimination, PLWHA, people living with HIV/AIDS, health care students)

[pjst18_2_256.pdf](#)

Determinants of Women Empowerment in Rural Households in Kwara State, Nigeria. Kemi. F. Omotesho, Ph.D.; Azeez Muhammad-Lawal, Ph.D.; Oluwaremilekun Jimoh, M.Sc.; Ivie L. Olaghere Ph.D.; and Nimat M. Abdulraheem, Ph.D. (Keywords: women empowerment index, determinants, rural households, Nigeria)

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Chemistry and Biochemistry

Assessment of Stabilities of Two Local Plant Dyes as Colorants for Petroleum Products (Petrol, Kerosene, and Diesel). C.A. Nwadinigwe; O.M. Ilojeme; A.O. Nwadinigwe; T.N. Alumona; and K.G. Akpomie. (Keywords: Pterocarpusosun, Lawsoniainermis, petroleum products, colorants, stability)

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Investigation of Bioactive Phytochemical Compounds from Aqueous Ethanol Extracts of Le

Life Sciences and Medicine

Evaluation of Demographic Pattern of Asthma Patients in Nigeria: Insight from a Multilevel Analysis. A.A. Akomolafe and C.A. Awogbemi. (Keywords: asthma disease, demographic pattern, gender influence, risk factors, age, predictive model)

[pjst18_2_292.pdf](#)

Zika Virus Disease: A Global Health Challenge. F.A. Kuta; A.S. Adedeji, N.U. Adabara, J.D. Bala, and A. Hamidu. (Keywords: MR766 cluster, Flaviviridae, Zika virus infection, sentinel rhesus monkey, Asian genotype)

[pjst18_2_305.pdf](#)

Co-Infection of Hepatitis B and C Surface Antigens among Secondary School Students in Jos-North Local Government Area of Plateau State, Nigeria. Hero Godwin; Happiness Johnson; and Emmanuel Fasosin. (Keywords: prevalence, co-infection HBV, HCV)

[pjst18_2_318.pdf](#)

In Vivo Trace Element Determination: Acute Toxicity Test and Effect of Unripe *Cocos nucifera* Fluid on Body Organs. E.L. Onyeyilim; B.E. Ezema; K.G. Akpomie; F.K. Ojo; and O.L. Alum. (Keywords: albino mice, unripe coconut water, malaria parasite (Mp+), trace elements, ALT, AST, creatinine, urea, uric acid, acid phosphate)

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Analysis of Poultry Farmers' use of Pests and Disease Control Strategies in Kwara State, Ni

Adesiji, Ph.D.;

Nutritional Evaluation of Processed Cassava Root Meal using Albino Rats. O.A. Akapo; W.A. Olayemi; A.O. Oso; R.A Olorunsola; and A.M. Bamgbose. (Keywords: cassava meal, process, broiler, fermented ensiled, nutritive value, Manihot esculenta Crantz)
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Environmental Science and Ecology

Assessment of the Effects of Industrial Effluents on the Water Resources in Challawa Industrial Area, Kano, Nigeria. V.N. Okolo; A.W. Butu; and E.A. Olowolafe. (Keywords: upstream, downstream, river samples, surface water, groundwater, sludge, heavy metals)
[pjst18_2_352.pdf](#)

Organochlorine Pesticides Residues in Water, Sediment, and Various Species of Fish from Komadugu River Basin, Yobe State, Nigeria. Zakari Mohammed; Joseph C. Akan; Shamsu Ahmad; and Abba Hassan. (Keywords: Komadugu River basin, water, sediment, fish, extraction, cleanup, contamination)
[pjst18_2_364.pdf](#)

Assessment of the Effects of Deforestation using GIS and Remote Sensing Applications in Shendam District, Plateau State Nigeria. Buba Yenhor Alfred; Prof. Ayuba K. Haruna; Dr. Jibrin Sule; and Lawan Surajo Abdullahi. (Keywords: GIS, remote sensing, deforestation, land degradation, tree planing)
[pjst18_2_380.pdf](#)

Development and Performance Evaluation of Jominy End-Quench Apparatus. Jacob O. Aweda, Ph.D.; Sunday O. Abegunde, B.Eng.; and Raheedat M. Mahamood, Ph.D. (Keywords: Jominy end-quench apparatus, hardenability, Brinell hardness, water, brine)

[pjst18_1_5.pdf](#)

Design and Development of a Gas Fired Reverberatory Furnace: In View of Huge Gas Reserves in Nigeria. B.C. Chukwudi and M.B. Ogunedo. (Keywords: reverberatory, furnace, gas, aluminum, recycling, non-ferrous metals)

[pjst18_1_13.pdf](#)

Design of Cylinder Block of an 80cc Spark Ignition (SI) Aluminum Engine. Raphael Sylvester Ebhojiaye, M.Eng. and Godwin Ejuvwedia Sadjere, Ph.D. (Keywords: internal combustion, IC, cylinder block, swept volume)

[pjst18_1_22.pdf](#)

Experimental Investigation of Low Global Warming Potential Refrigerant Blends in Domestic Vapor Compression Refrigeration System. M.E. Uwadiae, M.Eng.; M.A. Akintunde, Ph.D.; and T.I. Ogedengbe, Ph.D. (Keyword: coefficient of performance, COP, vapor compression refrigeration system, flammability, global warming potential, GWP, refrigerant, refrigerant blend)

[pjst18_1_30.pdf](#)

Production of Drinking Water by Solar Distillation Process. I. Ofili, M.Eng.; E.C. Ugwuoke, M.Eng. (in view); H.O. Orah, M.Eng.; B.I. Onyia, M.Eng (in view); and H.I. Edeh, Ph.D. (in view). (Keywords: distillation, brackish water, seawater, distillate, solar energy)

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Energy and Power

Solar PV System Utilization in Nigeria: Failures and Possible Solutions. V.N. Dike; C.A. Opara-Nestor; J.N. Amaechi; D.O. Dike; and T.C. Chineke. (Keywords: photovoltaic, renewable energy, PV system, PV failures, possible solutions, Nigeria.

[pjst18_1_51.pdf](#)

Effects of Thermo-Chemical Pre-Treatment of Maize Leaves on Methane Production. E.C. Ugwuoke, M.Eng. (in view); H.I. Edeh, Ph.D. (in view); S.T. Ukwuani, M.Eng. (in view); B.I. Onyia, M.Eng. (in view); I. Ofili, M.Eng. (Keywords: thermos-chemical pretreatment, hydrolysis, acidogenesis, anaerobic digestion, biogas)

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Effect of Cow Manure to Rice Straw Ratio on Methane Production in Batch Anaerobic Co-Digestion of Concentrated Cow Manure and Rice Straw. N.N. Eze, M.Eng. (in view) ; E.C. Ugwuoke, M.Eng. (in view); I. Ofili, M.Eng.; H.I. Edeh, Ph.D. (in view); and B.I. Onyia, M.Eng. (in view). (Keywords: bio-waste, rice straw, cow manure, anaerobic digestion, biogas)

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Strategic Plan Analysis for Integrated Renewable Generation to Smart Grid Technologies in Nigeria. Engr. Akanbi. (Keywords: smart grid, renewable energy sources, system dynamics, power grid, electrical grid)

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On Empirical Power of Univariate Normality Tests under Symmetric, Asymmetric, and Scaled Distributions. Lukman Abiodun Nafiu, Ph.D.; Lanlege David Ibitayo, Ph.D.; and Solomon Matovu Muyombya, M.Sc. (Keywords: empirical distribution function, correlation/regression tests, moment-based normality test, statistical power)

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On Some Notes on the Engel Expansion of Ratios of Sequences Obtained from the Sum of Digits of Squared Positive Integers. Hilary I. Okagbue; Abiodun A. Opanuga; Pelumi E. Oguntunde; and Grace Eze. (Keywords: Engle expansion, Pierce expansion, digit sum, ratios)

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Positive Numbers Divisible by their Iterative Digit Sum Revisited. Hilary I. Okagbue; Abiodun A. Opanuga; Pelumi E. Oguntunde; and Grace Eze. (Keywords: iterative digit sum, digital root sequences, Nivens numbers, NDIDS)

[pjst18_1_101.pdf](#)

A Note on Some Basic Statistical Properties of Transmuted Burr X Distribution. Adebowale O. Adejumo; Pelumi E. Oguntunde; and Oluwale A. Odetunmibi. (Key terms: Burr X distribution, estimation, properties, transmuted family of distributions)

[pjst18_1_107.pdf](#)

Information Technology and Communications

Reduction of Simple Semi-Conditional Grammars. R.O. Oladele, Ph.D. and S.N. Isah, M.Sc.

(Keywords: TCP, multimedia application, time sliding window, TSW₂CM, TSW₃CM, IETF, differentiated service, DiffServ, QoS router, quality of service)

[pjst18_1_117.pdf](#)

Halstead Complexity Analysis of Bubble and Insertion Sorting Algorithms. T.R. Awode; D.D. Olatinwo; O. Shoewu; S.O. Olatinwo; O.O. Omitola; and Mary Adedoyin. (Keywords: Halstead complexity, bubble sort, insertion sort)

[pjst18_1_125.pdf](#)

E-Commerce in a Closed System: Development of an E-Marketspace for a University Community. O.V. Mejabi, Ph.D.; B.A. Okai, B.Sc.; R.A. Oyekunle, Ph.D.; and R.G. Jimoh, Ph.D. (Key terms: closed system commerce, consumer to consumer, C2C, electronic commerce, e-commerce, emarketspace, university, web-based system)

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Enhanced Resource Scheduling Approach for Cloud Computing. E.O. Oyebode, MSc.; O.A. Ojesanmi, Ph.D.; O. Folorunso, Ph.D.; and I.K. Ogundoyin, Ph.D. (Keywords: host, virtual machine, workflows, scheduling, time sharing, space sharing)

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A Cloud-Based Model for Computer Network Threats Management. I.K. Ogundoyin, Ph.D.; C.O. Akanbi, Ph.D.; A.A. Adigun, Ph.D.; and S.A. Akinboro, Ph.D. (Key terms: threats, cloud, model, cyberspace, management, UML, unified modeling language, ANN, artificial neural network)

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Kolawole and Oluwaseyi Joseph Afolabi. (Keywords: motorcycle, passengers, traffic accidents, traffic safety)

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Impact of Small and Medium Scale Enterprises on Poverty Alleviation in Kwara State, Nigeria. O.F. Osemene, Ph.D.; R.T. Salman, Ph.D.; and K.D. Kolawole. (Key terms: SMEs, small-scale enterprise, mid-scale enterprise, poverty, unemployment, income, Kwara State, Nigeria)

[**pjst18_1_174.pdf**](#)

Acquisition and Performance of the Nigerian Banking Sector. Yusuf I. Mustapha, Ph.D. and Damilola O. Akinsanya, M.Sc. (Key terms: banking sector, financial performance, acquisitions)

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An Application of the Analytical Hierarchy Process to Determine Benchmarking Criteria for Identifying Product Vendors. Afolabi Oludele. R, Tella Oluwaseyi. F, Ibitoye Ayotunde. P. and Bamigbala Olateju A. (Keywords: AHP, AHP calculation, product priority, vendor, distribution)

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A Comparative Analysis of Effects of Firms' Strategic Factors on Performance in Nigeria. Gunu Umar Ph.D. and Sylvanus S. Adamade Ph.D. (Key terms: business resources, strategy, firms, manufacturing, competition)

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Comparing Effects of Traditional and Multimedia Teaching of Vital Signs Assessment on Knowledge of Nursing

The use of Social Skill Training in Fostering Pro-Social Behavior of Secondary School Adolescents in Gombe State, Nigeria. Muraina Kamilu Olanrewaju, Ph.D. and Gambo Adamu Aliyu. (Keywords: social skill training, pro-social behavior, self-esteem, secondary school adolescents)

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Chemistry and Biochemistry

The Kinetics and Mechanisms of Alcohol Oxidation in Alkaline 12-Tungstocobaltate(III). D.F. Latona. (Key terms: 12-tungstocobaltate(III), ethanol, butanol, pentanol, isopropylalcohol)

[pjst18_1_244.pdf](#)

Utilizing the Sorption Capacity of Local Nigerian Sawdust for Attenuation of Heavy Metals from Solution: Isotherm, Kinetic, and Thermodynamic Investigations. K. Ezech; I.C. Ogbu; K.G. Akpomie; N.C. Ojukwu; and J.C. Ibe. (Key terms: environmental pollution, heavy metals, adsorption, Nigerian sawdust, isotherm, kinetic, thermodynamics)

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Cadmium Uptake by Biomass of *Lysinibacillus sphaericus* KY203810 and *Enterobacter cloacae* KY203811 from Steel Company Dumpsite. Saka A. Balogun, Ph.D.; A.O. Gbadebo, M.Sc.; Sharaf O. Kareem, Ph.D.; and Sherif Adewuyi, Ph.D. (Key terms: biosorption, environmental conditions, metal tolerant bacterial strains, cadmium ions, *Lysinibacillus sphaericus*, *Enterobacter cloacae*, equilibrium isotherm model, heavy metal)

Local Stability Analysis of a Tuberculosis Model incorporating Extensive Drug Resistant Subgroup. F.Y. Eguda, Ph.D.; N.I. Akinwande Ph.D.; S. Abdulrahman Ph.D.; F. A. Kuta, Ph.D.; and S.A. Somma, M.Tech. (Keywords: Tuberculosis, extensive drug resistant tuberculosis, effective reproduction number, DFE, XDR, stability)

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Modeling of a Cure Rate Model for TB with HIV Co-Infection. Oluwafemi Samson Balogun, M.Sc. and Prof. Emmanuel Teju Jolayemi. (Key terms: epidemiology, cure fraction, BCH model, bounded cumulative hazard, left censored, EM algorithm)

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Densitometric Estimation of Radiation Absorbed Dose to Patients Undergoing X-Ray Examination in Five Government Owned Hospitals in Nigeria. O.A. Ojo, Ph.D.; M.A. Ibrahim, Ph.D.; and P.A. Oluwafisoye, M.Sc. (Keywords: absorbed dose, radiation, exposure, exposed, optical density, radiographic film, health physics, ionizing radiation)

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Assessment of Collimation on Adult Plain Chest Radiographs as a Radiation Protection Measure in a Nigerian Teaching Hospital. Alhamdu Silas Moi; Zainab Ado; Joseph Dlama Zira; Samuel Shem; Njoku Ginkanwa; Fati Malgwi; Prince Ogenyi; and Mohammed Sani Umar. (Key terms: chest radiograph, collimation, radiation protection)

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Pattern of Lesion Depicted on Plain Knee Radiographs in a Negroid Population. Alhamdu Silas Moi; Ebuka Anyasor; Joseph Dlama Zira; Samuel Shem; Njoku Ginkanwa; Fati Malgwi; Prince Ogenyi; and Mohammed

Geology, Geophysics, and Earth Science

Integrated Geophysical and Geotechnical Evaluation of Foundation Failure in Parts of Ikere-Ekiti, Southwestern Nigeria. O.O. Olutomilola; O.O. Afolabi; and J. Yakubu. (Keywords: geophysical, geotechnical, evaluation, Ikere-Ekiti, foundation failure)
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Environmental Science and Ecology

Vulnerability Assessment of Shallow Aquifer Hand-Dug Wells in Rural Parts of Northcentral Nigeria using AVI and GOD Methods. Ibrahim K. Olojoku, M.Tech.; Gomo Modreck, Ph.D.; Oke S. Adeyinka, Ph.D.; and Yusuf M. Adebayo, M.Sc. (Key terms: hand-dug wells, aquifer vulnerability index, AVI, groundwater occurrence, overall lithology, depth to groundwater, GOD, GIS)
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Hydrogeochemical Characterization of Groundwater in Afe Babalola University, Ado-Ekiti Southwestern Nigeria. O.O. Afolabi; S.O. Olatunji; and E.D. Wategire. (Keywords: groundwater, hydrochemical assessment, ABUAD, geogenic, anthropogenic)
[pjst18_1_334.pdf](#)

Physico-Chemical Properties of Wastewater within Agbara and Impact on Ologe Lagoon, Lagos. Abayomi David Folawewo, M.Sc.; Alexander Nnamdi Madu, Ph.D.; Adekemi Omolayo Faboyede, Ph.D.; and Olaitan Bamidele Muyideen. M.Sc. (Keywords: industrial effluent discharge, heavy metals, river pollution)

needs, environmental management, environmental pollution, waste management)

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