

List of Publications 2021-2022

1. Mohammed, Asmaa O., Adem Kilicman, Mohamed M. Awad, Arjun K. Rathie, and Medhat A. Rakha. "Another Method for Proving Certain Reduction Formulas for the Humbert Function ψ 2 Due to Brychkov et al. with an Application." *Symmetry* 14, no. 5 (2022): 868.
2. Awad, Mohamed M. "On a Generalization of Kummer's Second-Type $1F_1$ and $2F_2$ ", *Mathematical Problems in Engineering* 2021(2021), Article ID 5531388, 11 pages.
3. Azzam, A. A., Zanyar A. Ameen, Tareq M. Al-shami, and Mohammed E. El-Shafei. "Generating Soft Topologies via Soft Set Operators." *Symmetry* 14, no. 5 (2022): 914.
4. Al-shami, Tareq M., Hariwan Z. Ibrahim, A. A. Azzam, and Ahmed I. EL-Maghrabi. "SR-fuzzy sets and their weighted aggregated operators in application to decision-making." *Journal of Function Spaces* 2022 (2022).
5. Abu-Gdairi, Radwan Ahmad, Abdelfattah Azzam, and Ibrahim Noaman. "Nearly Soft β -Open Sets via Soft Ditopological Spaces." *European Journal of Pure and Applied Mathematics* 15, no. 1 (2022): 126-134.
6. Almarri, B., and A. A. Azzam. "Energy Saving via a Minimal Structure." *Mathematical Problems in Engineering* 2022 (2022), 6
7. Al-shami, Tareq M., Zanyar A. Ameen, A. Azzam, and Mohammed E. El-Shafei. "Soft separation axioms via soft topological operators." *AIMS MATHEMATICS* 7, no. 8 (2022): 15107-15119.
8. Almarri, B., and A. A. Azzam. "Energy Saving via a Minimal Structure." *Mathematical Problems in Engineering* 2022 (2022).
9. Azzam, A. A. "Comparison of two types of rough approximation via grill.", *Italian Journal Of Pure And Applied Mathematics* 47 (2022), 258–270
10. Azzam, A. A., and A. A. Nasef. " α -Completely Regular and Almost α -Completely Regular Spaces." *Mathematical Problems in Engineering* 2022 (2022).
11. Hosny, Rodyna A., Tareq M. Al-shami, A. A. Azzam, and Ashraf S. Nawar. "Knowledge Based on Rough Approximations and Ideals." *Mathematical Problems in Engineering* 2022 (2022).
12. Ameen, Zanyar A., Tareq M. Al-shami, A. A. Azzam, and Abdelwaheb Mhemdi. "A novel fuzzy structure: Infra-fuzzy topological spaces." *Journal of Function Spaces* 2022 (2022).
13. Al-shami, Tareq M., Hariwan Z. Ibrahim, A. A. Azzam, and Ahmed I. EL-Maghrabi. "SR-fuzzy sets and their weighted aggregated operators in application to decision-making." *Journal of Function Spaces* 2022 (2022).
14. Atef, Mohammed, Ahmed Mostafa Khalil, Sheng-Gang Li, Abdelfatah Azzam, Heng Liu, and Abd El Fattah El Atik. "Comparison of twelve types of rough approximations based on j-neighborhood space and j-adhesion neighborhood space." *Soft Computing* 26, no. 1 (2022): 215-236.
15. Al-Shami, Tareq M., and A. A. Azzam. "Infra soft semiopen sets and infra soft semicontinuity." *Journal of Function Spaces* 2021 (2021).
16. Askar, S. S., and A. A. Elsadany. "Nonlinear dynamics of cournot duopoly game: When one firm considers social welfare." *Discrete Dynamics in Nature and Society* 2021 (2021).

17. Li, Wen-na, A. A. Elsadany, Wei Zhou, and Yan-lan Zhu. "Global analysis, multi-stability and synchronization in a competition model of public enterprises with consumer surplus." *Chaos, Solitons & Fractals* 143 (2021): 110604.
18. Askar, Sameh S., A. Ibrahim, and A. A. Elsadany. "Dynamics of a Heterogeneous Constraint Profit Maximization Duopoly Model Based on an Isoelastic Demand." *Complexity* 2021 (2021).
19. Askar, S. S., Dipankar Ghosh, P. K. Santra, Abdelalim A. Elsadany, and G. S. Mahapatra. "A fractional order SITR mathematical model for forecasting of transmission of COVID-19 of India with lockdown effect." *Results in Physics* 24 (2021): 104067.
20. Li, Hui, Wei Zhou, A. A. Elsadany, and Tong Chu. "Stability, multi-stability and instability in Cournot duopoly game with knowledge spillover effects and relative profit maximization." *Chaos, Solitons & Fractals* 146 (2021): 110936.
21. Ghosh, Dipankar, Prasun K. Santra, Abdelalim A. Elsadany, and Ghanshaym S. Mahapatra. "Predator-dependent transmissible disease spreading in prey under Holling type-II functional response." *Zeitschrift für Naturforschung A* 76, no. 6 (2021): 479-492.
22. Din, Qamar, A. M. Yousef, and A. A. Elsadany. "Stability and Bifurcation Analysis of a Discrete Singular Bioeconomic System." *Discrete Dynamics in Nature and Society* 2021 (2021).
23. Zhu, Yan-lan, Wei Zhou, Tong Chu, and A. A. Elsadany. "Complex dynamical behavior and numerical simulation of a Cournot-Bertrand duopoly game with heterogeneous players." *Communications in Nonlinear Science and Numerical Simulation* 101 (2021): 105898.
24. Salman, S. M., A. M. Yousef, and A. A. Elsadany. "Dynamic behavior and bifurcation analysis of a deterministic and stochastic coupled logistic map system." *International Journal of Dynamics and Control* 10, no. 1 (2022): 69-85..
25. Awad, A. M., S. S. Askar, and A. A. Elsadany. "Complex dynamics investigations of a mixed Bertrand duopoly game: synchronization and global analysis." *Nonlinear Dynamics* 107, no. 4 (2022): 3983-3999.
26. Basu, Sanjoy, R. Prem Kumar, P. K. Santra, G. S. Mahapatra, and A. A. Elsadany. "Preventive control strategy on second wave of Covid-19 pandemic model incorporating lock-down effect." *Alexandria Engineering Journal* 61, no. 9 (2022): 7265-7276.
27. Ramaswamy, Rajagopalan, Gunaseelan Mani, Arul Joseph Gnanaprakasam, Ola A. Ashour Abdelnaby, and Stojan Radenović. "An Application of Urysohn Integral Equation via Complex Partial Metric Space." *Mathematics* 10, no. 12 (2022): 2019.
28. Stojiljković, Vuk, Rajagopalan Ramaswamy, Fahad Alshammari, Ola A. Ashour, Mohammed Lahy Hassan Alghazwani, and Stojan Radenović. "Hermite–Hadamard Type Inequalities Involving (kp) Fractional Operator for Various Types of Convex Functions." *Fractal and Fractional* 6, no. 7 (2022): 376.
29. Ramaswamy, Rajagopalan, Mohamed S. Abdel Latif, Amr Elsonbaty, and Abas H. Abdel Kader. "On exact solutions of fractional differential-difference equations with Ψ -Riemann–Liouville derivative." *International Journal of Nonlinear Sciences and Numerical Simulation* (2022).
30. Ramaswamy, Rajagopalan, A. M. A. El-Sayed, A. A. Elsadany, and Amr Elsonbaty. "On Ghost Attractor in Blinking Chaotic MVD Memristor-Based Circuit and its Application." *IEEE Access* 9 (2021): 168026-168041.

31. Ramaswamy, Rajagopalan, Gunaseelan Mani, Arul Joseph Gnanaprakasam, Ola A. Ashour Abdelnaby, and Stojan Radenović. "An Application to Fixed-Point Results in Tricomplex-Valued Metric Spaces Using Control Functions." *Mathematics* 10, no. 18 (2022): 3344.
Rajagopalan, R., Ekta Tamrakar, Fahad Alshammari, H. K. Pathak, and Reny George. "Edge Theoretic Extended Contractions and Their Applications." *Journal of Function Spaces* 2021 (2021).
32. Elsonbaty, A. M. R., Zulqurnain Sabir, Rajagopalan Ramaswamy, and Waleed Adel. "Dynamical analysis of a novel discrete fractional SITRS model for COVID-19." *Fractals* 29, no. 08 (2021): 2140035.
33. Ramaswamy, Rajagopalan, AH Abdel Kader, and Amr Elsonbaty. "New Exact Nematicon Solutions of Liquid Crystal Model With Different Types of Nonlinearities." *IEEE Access* 9 (2021): 107909-107916.
34. Alshammari, Fahad Sameer, K. P. Reshma, and Reny George. "Generalised Presic type operators in modular metric space and an application to integral equations of Caratheodory type functions." *Journal of Mathematics* 2021 (2021).
35. Abed, Ahmed M., Laila F. Seddek, and Ali AlArjani. "Enhancing Two-Phase Supply Chain Network Distribution via three meta-heuristic Optimization Algorithms subsidized by Mathematical procedures." *Journal of Advanced Manufacturing Systems* (2022).
36. Nabwey, Hossam A., M. Girinath Reddy, B. K. Naveen Kumar, and N. Sandeep. "Effect of resistive and radiative heats on enhanced heat transfer of parabolic trough solar collector." *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* (2022): 09544089221117317.
37. Al-Arabi, Taghreed H., A. Mahdy, Ahmed M. Rashad, Wafaa Saad, and Hossam A. Nabwey. "Convective flow of a Williamson hybrid nanofluid in a porous medium through a cone and wedge with the effect of the shape of nanoparticles." *Heat Transfer*.
38. Hussain, Shafqat, M. Molana, T. Armaghani, A. M. Rashad, and Hossam A. Nabwey. "Energy storage performance and irreversibility analysis of a water-based suspension containing nano-encapsulated phase change materials in a porous staggered cavity." *Journal of Energy Storage* 53 (2022): 104975.
39. Nabwey, Hossam A., Ahmed M. Rashad, Mohamed A. Mansour, and Taha Salah. "Magneto-Nanofluid Flow via Mixed Convection Inside E-Shaped Square Chamber." *Symmetry* 14, no. 6 (2022): 1159.
40. Nabwey, Hossam A., A. M. Rashad, Waqar A. Khan, and Sumayyah I. Alshber. "Effectiveness of magnetize flow on nanofluid via unsteady natural convection inside an inclined U-shaped cavity with discrete heating." *Alexandria Engineering Journal* 61, no. 11 (2022): 8653-8666.
41. Nabwey, Hossam A., Ahmed M. Rashad, Abd El Nasser Mahdy, and Shaaban M. Shaaban. "Thermal Conductivity and Thermophoretic Impacts of Micropolar Fluid Flow by a Horizontal Absorbent Isothermal Porous Wall with Heat Source/Sink." *Mathematics* 10, no. 9 (2022): 1514.
42. Nabwey, Hossam A., Ahmed M. Rashad, Amal MA EL-Hakiem, and Sumayyah I. Alshber. "Effectiveness of Newtonian Heating on Magneto-Free Convective Flow of Polar Nanofluid across a Solid Sphere." *Fractal and Fractional* 6, no. 2 (2022): 57.
43. Nabwey, Hossam A., S. M. M. EL-Kabeir, A. M. Rashad, and M. M. M. Abdou. "Gyrotactic microorganisms mixed convection flow of nanofluid over a vertically surfaced saturated porous media." *Alexandria Engineering Journal* 61, no. 3 (2022): 1804-1822.

44. Nabwey, Hossam A., Sumayyah I. Alshber, Ahmed M. Rashad, and Abd El Nasser Mahdy. "Influence of bioconvection and chemical reaction on magneto—Carreau nanofluid flow through an inclined cylinder." *Mathematics* 10, no. 3 (2022): 504.
45. Nabwey, Hossam A., Ahmed M. Rashad, and Waqar A. Khan. "Slip Microrotation Flow of Silver-Sodium Alginate Nanofluid via Mixed Convection in a Porous Medium." *Mathematics* 9, no. 24 (2021): 3232.
46. Alshber, Sumayyah I., and Hossam A. Nabwey. "Rough Set Approach for Identifying the Combined Effects of Heat and Mass Transfer Due to MHD Nanofluid Flow over a Vertical Rotating Frame." *Mathematics* 9, no. 15 (2021): 1798.
47. Gul, Shaista, Rahmat Ali Khan, Hasib Khan, Reny George, Sina Etemad, and Shahram Rezapour. "Analysis on a coupled system of two sequential hybrid BVPs with numerical simulations to a model of typhoid treatment." *Alexandria Engineering Journal* 61, no. 12 (2022): 10085-10098.
48. George, Reny, Mohamed Houas, Mehran Ghaderi, Shahram Rezapour, and S. K. Elagan. "On a coupled system of pantograph problem with three sequential fractional derivatives by using positive contraction-type inequalities." *Results in Physics* (2022): 105687.
49. Ali, Basit, Naeem Saleem, Nozara Sundus, Sana Khaleeq, Muhammad Saeed, and Reny George. "A Contribution to the Theory of Soft Sets via Generalized Relaxed Operations." *Mathematics* 10, no. 15 (2022): 2636.
50. Alshammari, Fahad Sameer, Naif R. Alrashedi, and Reny George. "-Hausdorff Functions and Common Fixed Points of Multivalued Operators in a-Metric Space and Their Applications." *Journal of Function Spaces* 2022 (2022).
51. Alam, Aftab, Reny George, and Mohammad Imdad. "Refinements to Relation-Theoretic Contraction Principle." *Axioms* 11, no. 7 (2022): 316.
52. George, Reny, Nadia Gul, Anwar Zeb, Zakieh Avazzadeh, Salih Djilali, and Shahram Rezapour. "Bifurcations analysis of a discrete time SIR epidemic model with nonlinear incidence function." *Results in Physics* (2022): 105580.
53. Li, Xiangling, Azmat Ullah Khan Niazi, Farva Hafeez, Reny George, and Azhar Hussain. "Analytical Approaches on the Attractivity of Solutions for Multiterm Fractional Functional Evolution Equations." *Journal of Function Spaces* 2022 (2022).
54. Uthirasamy, N., K. Tamilvanan, Hemant Kumar Nashine, and Reny George. "Solution and stability of quartic functional equations in modular spaces by using Fatou property." *Journal of Function Spaces* 2022 (2022).
55. George, Reny, Zoran D. Mitrović, Ali Turab, Ana Savić, and Wajahat Ali. "On a Unique Solution of a Class of Stochastic Predator–Prey Models with Two-Choice Behavior of Predator Animals." *Symmetry* 14, no. 5 (2022): 846.
56. Heydarpour, Zohreh, Javad Izadi, Reny George, Mehran Ghaderi, and Shahram Rezapour. "On a Partial Fractional Hybrid Version of Generalized Sturm–Liouville–Langevin Equation." *Fractal and Fractional* 6, no. 5 (2022): 269.

57. George, Reny, Muhammad Yaseen, and Sana Khan. "Collocation Approach Based on an Extended Cubic-Spline for a Second-Order Volterra Partial Integrodifferential Equation." *Journal of Function Spaces* 2022 (2022).
58. Ahmad, Manzoor, Akbar Zada, Mehran Ghaderi, Reny George, and Shahram Rezapour. "On the existence and stability of a neutral stochastic fractional differential system." *Fractal and Fractional* 6, no. 4 (2022): 203.
59. Lael, Fatemeh, Naeem Saleem, and Reny George. "Caristi's Fixed Point Theorem in Cone Metric Space." *Journal of Function Spaces* 2022 (2022).
60. Hosseinzadeh, Hasan, Hüseyin Işık, Samira Hadi Bonab, and Reny George. "Coupled measure of noncompactness and functional integral equations." *Open Mathematics* 20, no. 1 (2022): 38-49.
61. Rezapour, Shahram, Ali Boulfoul, Brahim Tellab, Mohammad Esmael Samei, Sina Etemad, and Reny George. "Fixed Point Theory and the Liouville–Caputo Integro-Differential FBVP with Multiple Nonlinear Terms." *Journal of Function Spaces* 2022 (2022).
62. Rezapour, Shahram, Chernet Tuge Deressa, Azhar Hussain, Sina Etemad, Reny George, and Bashir Ahmad. "A theoretical analysis of a fractional multi-dimensional system of boundary value problems on the methylpropane graph via fixed point technique." *Mathematics* 10, no. 4 (2022): 568.
63. Yaseen, Muhammad, Qamar Un Nisa Arif, Reny George, and Sana Khan. "Comparative Numerical Study of Spline-Based Numerical Techniques for Time Fractional Cattaneo Equation in the Sense of Caputo–Fabrizio." *Fractal and Fractional* 6, no. 2 (2022): 50.
64. George, Reny, Ivan D. Arandelović, Vesna Mišić, and Zoran D. Mitrović. "Some Fixed Points Results in-Metric and Quasi-Metric Spaces." *Journal of Function Spaces* 2022 (2022).
65. Yaseen, Muhammad, Sadia Mumtaz, Reny George, and Azhar Hussain. "Existence Results for the Solution of the Hybrid Caputo–Hadamard Fractional Differential Problems Using Dhage's Approach." *Fractal and Fractional* 6, no. 1 (2021): 17.
66. Ali, Basit, Muzammil Ali, Azhar Hussain, Reny George, and Talat Nazir. "Best proximity points in non-Archimedean fuzzy metric spaces with application to domain of words." *AIMS Mathematics* 7, no. 9 (2022): 16590-16611.
67. Nashine, Hemant Kumar, Rajendra Pant, and Reny George. "Common positive solution of two nonlinear matrix equations using fixed point Results." *Mathematics* 9, no. 18 (2021): 2199.
68. Alam, Aftab, Reny George, Mohammad Imdad, and Md Hasanuzzaman. "Fixed Point Theorems for Nonexpansive Mappings under Binary Relations." *Mathematics* 9, no. 17 (2021): 2059.
69. Alrashedi, Naif R., Fahad S. Alshammari, and Reny George. "Common fixed points of a pair of H^β -Hausdorff multivalued operators in b-metric space and application to integral equations." *JOURNAL OF MATHEMATICAL EXTENSION* 16 (2022).

70. Roy, Kushal, Mantu Saha, Reny George, Liliana Guran, and Zoran D. Mitrović. "Some covariant and contravariant fixed point theorems over bipolar p-metric spaces and applications." *Filomat* 36, no. 5 (2022): 1755-1767.
71. Wang, Fuzhang, RS Varun Kumar, G. Sowmya, Essam Roshdy El-Zahar, B. C. Prasannakumara, M. Ijaz Khan, Sami Ullah Khan, M. Y. Malik, and Wei-Feng Xia. "LSM and DTM-Pade approximation for the combined impacts of convective and radiative heat transfer on an inclined porous longitudinal fin." *Case Studies in Thermal Engineering* (2022): 101846.
72. Shah, Nehad Ali, Abderrahim Wakif, Essam R. El-Zahar, Sohail Ahmad, and Se-Jin Yook. "Numerical simulation of a thermally enhanced EMHD flow of a heterogeneous micropolar mixture comprising (60%)-ethylene glycol (EG),(40%)-water (W), and copper oxide nanomaterials (CuO)." *Case Studies in Thermal Engineering* (2022): 102046.
73. Khan, Zar Ali, Nehad Ali Shah, Nadeem Haider, Essam R. El-Zahar, and Se-Jin Yook. "Analysis of natural convection flows of Jeffrey fluid with Prabhakar-like thermal transport." *Case Studies in Thermal Engineering* 35 (2022): 102079.
74. Sohail, Muhammad, Umar Nazir, Essam R. El-Zahar, Hussam Alrabaiah, Poom Kumam, Abd Allah A. Mousa, Kanokwan Sitthithakerngkiet, and Choonkil Park. "A study of triple-mass diffusion species and energy transfer in Carreau–Yasuda material influenced by activation energy and heat source." *Scientific Reports* 12, no. 1 (2022): 1-17.
75. Shah, Nehad Ali, Essam R. El-Zahar, Ali Akgül, Adnan Khan, and Jeevan Kafle. "Analysis of Fractional-Order Regularized Long-Wave Models via a Novel Transform." *Journal of Function Spaces* 2022 (2022).
76. Sohail, Muhammad, Essam R. El-Zahar, Abd Allah A. Mousa, Umar Nazir, Saad Althobaiti, Ali Althobaiti, Nehad Ali Shah, and Jae Dong Chung. "Finite element analysis for ternary hybrid nanoparticles on thermal enhancement in pseudo-plastic liquid through porous stretching sheet." *Scientific Reports* 12, no. 1 (2022): 1-13.
77. Hua, Bian, Faisal Shah, M. Ijaz Khan, Essam Roshdy El-Zahar, Shahid Farooq, Sami Ullah Khan, Kamel Guedri, and Wen-jing Wu. "Analysis of fourth-grade fluid model over a stretchable surface with Riga plate subject to permeable medium." *Journal of Computational Design and Engineering* 9, no. 3 (2022): 1064-1075.
78. Haq, Fazal, M. Ijaz Khan, ER Moustafa El-Zahar, Sami Ullah Khan, Shahid Farooq, and Kamel Guedri. "Theoretical investigation of radiative viscous hybrid nanofluid towards a permeable surface of cylinder." *Chinese Journal of Physics* (2022).
79. Ahmad, Manzoor, Essam Rashdy El-Zahar, Kamel Al-Khaled, Mehwish Rasheed, Sami Ullah Khan, Muhammad Taj, M. Ijaz Khan, and Samia Elattar. "Forced convection three-dimensional Maxwell nanofluid flow due to bidirectional movement of sheet with zero mass flux." *International Communications in Heat and Mass Transfer* 135 (2022): 106050.
80. Rasool, Ghulam, Nehad Ali Shah, Essam R. El-Zahar, and Abderrahim Wakif. "Numerical investigation of EMHD nanofluid flows over a convectively heated riga pattern positioned horizontally in a Darcy-Forchheimer porous medium: application of passive control

- strategy and generalized transfer laws." *Waves in Random and Complex Media* (2022): 1-20.
81. Nazeer, Mubbashar, Farooq Hussain, M. Ijaz Khan, Essam Roshdy El-Zahar, Yu-Ming Chu, and M. Y. Malik. "Theoretical study of MHD electro-osmotically flow of third-grade fluid in micro channel." *Applied Mathematics and Computation* 420 (2022): 126868.
 82. Kumar, M. Dinesh, C. S. K. Raju, Kiran Sajjan, Essam R. El-Zahar, and Nehad Ali Shah. "Linear and quadratic convection on 3D flow with transpiration and hybrid nanoparticles." *International Communications in Heat and Mass Transfer* 134 (2022): 105995.
 83. Shah, Rasool, Waris Khan, Essam R. El-Zahar, Se-Jin Yook, and Nehad Ali Shah. "Mathematical Simulation of Heat Transfer in Thermally Magnetised Oldroyd-B Fluid in Sakiadis Rheology with a Heat Reservoir." *Mathematics* 10, no. 10 (2022): 1775.
 84. Wang, Yinyin, R. Naveen Kumar, Soumaya Gouadria, Maha M. Helmi, RJ Punith Gowda, Essam Roshdy El-Zahar, B. C. Prasannakumara, and M. Ijaz Khan. "A three-dimensional flow of an Oldroyd-B liquid with magnetic field and radiation effects: An application of thermophoretic particle deposition." *International Communications in Heat and Mass Transfer* 134 (2022): 106007.
 85. Jan, Aasim Ullah, Essam R. El-Zahar, Nehad Ali Shah, and Rasool Shah. "Computation of magnetized Couette–Poiseuille thermal flow of couple stress between two analogous plate with variable viscosity suspending the hafnium particles." *International Communications in Heat and Mass Transfer* 134 (2022): 106042.
 86. Shah, Nehad Ali, Essam R. El-Zahar, Hina M. Dutt, and Mohammad Asif Arefin. "Novel Evaluation of Fuzzy Fractional Cauchy Reaction-Diffusion Equation." *Journal of Function Spaces* 2022 (2022).
 87. Alhejaili, Weaam, RS Varun Kumar, Essam Roshdy El-Zahar, G. Sowmya, B. C. Prasannakumara, M. Ijaz Khan, K. M. Yogeesh, and Sumaira Qayyum. "Analytical solution for temperature equation of a fin problem with variable temperature-dependent thermal properties: Application of LSM and DTM-Pade approximant." *Chemical Physics Letters* 793 (2022): 139409.
 88. Wang, Fuzhang, Muhammad Sohail, Umar Nazir, Essam R. El-Zahar, Choonkil Park, and Noman Jabbar. "An implication of magnetic dipole in Carreau Yasuda liquid influenced by engine oil using ternary hybrid nanomaterial." *Nanotechnology Reviews* 11, no. 1 (2022): 1620-1632.
 89. Wang, Fuzhang, Sohail A. Khan, Soumaya Gouadria, Essam Roshdy El-Zahar, M. Ijaz Khan, Sami Ullah Khan, M. Yasir, and Yong-Min Li. "Entropy optimized flow of Darcy-Forchheimer viscous fluid with cubic autocatalysis chemical reactions." *International Journal of Hydrogen Energy* 47, no. 29 (2022): 13911-13920.
 90. Hua, Bian, M. Ijaz Khan, Sami Ullah Khan, Essam Roshdy El-Zahar, Wei-Feng Xia, M. Y. Malik, and Zhang Zhongkai. "Heat transfer enhancement for Marangoni Darcy-

- Forchheimer convective flow of hybrid nanofluid with magnetic force and dissipation features." *Waves in Random and Complex Media* (2022): 1-16.
91. Shakeel, Muhammad, Essam Roshdy El-Zahar, Nehad Ali Shah, and Jae Dong Chung. "Generalized Exp-Function Method to Find Closed Form Solutions of Nonlinear Dispersive Modified Benjamin–Bona–Mahony Equation Defined by Seismic Sea Waves." *Mathematics* 10, no. 7 (2022): 1026.
 92. El-Zahar, Essam R., Ahmed M. Rashad, and Haifa S. Al-Juaydi. "Studying Massive Suction Impact on Magneto-Flow of a Hybridized Casson Nanofluid on a Porous Continuous Moving or Fixed Surface." *Symmetry* 14, no. 3 (2022): 627.
 93. Jie, Zhang, M. Ijaz Khan, Kamel Al-Khaled, Essam Roshdy El-Zahar, Nilankush Acharya, Ali Raza, Sami Ullah Khan, Wei-Feng Xia, and Nai-xin Tao. "Thermal transport model for Brinkman type nanofluid containing carbon nanotubes with sinusoidal oscillations conditions: A fractional derivative concept." *Waves in Random and Complex Media* (2022): 1-20.
 94. Shah, Nehad Ali, Essam R. El-Zahar, and Jae Dong Chung. "Fractional analysis of coupled burgers equations within yang caputo-fabrizio operator." *Journal of Function Spaces* 2022 (2022).
 95. Raja, Muhammad Asif Zahoor, Rafia Tabassum, Essam Roshdy El-Zahar, Muhammad Shoaib, M. Ijaz Khan, M. Y. Malik, Sami Ullah Khan, and Sumaira Qayyum. "Intelligent computing through neural networks for entropy generation in MHD third-grade nanofluid under chemical reaction and viscous dissipation." *Waves in Random and Complex Media* (2022): 1-25.
 96. Shah, Nehad Ali, Ioannis Dassios, Essam R. El-Zahar, and Jae Dong Chung. "An efficient technique of fractional-order physical models involving ρ -Laplace transform." *Mathematics* 10, no. 5 (2022): 816.
 97. Li, Piyu, A. Abbasi, Essam Roshdy El-Zahar, Waseh Farooq, Zahid Hussain, Sami Ullah Khan, M. Ijaz Khan, Shahid Farooq, M. Y. Malik, and Fuzhang Wang. "Hall effects and viscous dissipation applications in peristaltic transport of Jeffrey nanofluid due to wave frame." *Colloid and Interface Science Communications* 47 (2022): 100593.
 98. Li, Piyu, Ali Raza, Essam Roshdy El-Zahar, Kamel Al-Khaled, Sami Ullah Khan, M. Ijaz Khan, M. Riaz Khan, and Fuzhang Wang. "Applications of fractional derivatives in MHD free-convective oscillating flow of a blood based CNTs nanofluid across a porous medium." *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* (2022): 09544089221082489.
 99. Qayyum, Mubashir, Farnaz Ismail, Syed Inayat Ali Shah, Muhammad Sohail, Essam R. El-Zahar, and K. C. Gokul. "An Application of Homotopy Perturbation Method to Fractional-Order Thin Film Flow of the Johnson–Segalman Fluid Model." *Mathematical Problems in Engineering* 2022 (2022).
 100. He, Zai-Yin, M. Ijaz Khan, Essam Roshdy El-Zahar, Soumaya Gouadria, M. Riaz Khan, and Abd Allah A. Mousa. "Dynamics of mixed convection and Hall current in radiative

- power-law velocity slip flow of non-Newtonian fluid." *Waves in Random and Complex Media* (2022): 1-18.
101. Algehyne, Ebrahim A., Essam R. El-Zahar, S. H. Elhag, Fatimah S. Bayones, Umar Nazir, Muhammad Sohail, and Poom Kumam. "Investigation of thermal performance of Maxwell hybrid nanofluid boundary value problem in vertical porous surface via finite element approach." *Scientific Reports* 12, no. 1 (2022): 1-12.
 102. Zahoor Raja, M. Asif, M. Shoaib, Essam Roshdy El-Zahar, Saddiqa Hussain, Yong-Min Li, M. Ijaz Khan, Saeed Islam, and M. Y. Malik. "Heat transport in entropy-optimized flow of viscoelastic fluid due to Riga plate: analysis of artificial neural network." *Waves in Random and Complex Media* (2022): 1-20.
 103. Wang, Fuzhang, Umar Nazir, Muhammad Sohail, Essam R. El-Zahar, Choonkil Park, and Phatiphat Thounthong. "A Galerkin strategy for tri-hybridized mixture in ethylene glycol comprising variable diffusion and thermal conductivity using non-Fourier's theory." *Nanotechnology Reviews* 11, no. 1 (2022): 834-845.
 104. Li, Yong-Min, Kamel Al-Khaled, Soumaya Gouadria, Essam Roshdy El-Zahar, Usman, Sami Ullah Khan, M. Ijaz Khan, and M. Y. Malik. "Numerical simulations for three-dimensional rotating porous disk flow of viscoelastic nanomaterial with activation energy, heat generation and Nield boundary conditions." *Waves in Random and Complex Media* (2022): 1-20.
 105. Farooq, Umer, Wafa Khan, M. Ijaz Khan, Fozia Bashir Farooq, DianChen Lu, M. Y. Malik, and Essam Roshdy El-Zahar. "Implication of forced convective flow of nanofluid towards an exponentially stretched surface: Non-similar transformations." *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* (2022): 09544089221076694.
 106. Ahmad, Latif, Muhammad Irfan, Saleem Javed, M. Ijaz Khan, M. Riaz Khan, Usama Muhammad Niazi, Ali O. Alqarni, and Essam Roshdy El-Zahar. "Influential study of novel microorganism and nanoparticles during heat and mass transport in Homann flow of viscoelastic materials." *International Communications in Heat and Mass Transfer* 131 (2022): 105871.
 107. Javid, Khurram, Mazhar Ellahi, Kamel Al-Khaled, Mohsin Raza, Sami Ullah Khan, M. Ijaz Khan, Essam Roshdy El-Zahar, Soumaya Gouadria, Muhammad Afzaal, and M. Imran Khan. "EMHD creeping rheology of nanofluid through a micro-channel via ciliated propulsion under porosity and thermal effects." *Case Studies in Thermal Engineering* 30 (2022): 101746.
 108. Puneeth, V., Muhammad Ijaz Khan, Shankar S. Narayan, Essam Roshdy El-Zahar, and Kamel Guedri. "The impact of the movement of the gyrotactic microorganisms on the heat and mass transfer characteristics of Casson nanofluid." *Waves in Random and Complex Media* (2022): 1-24.
 109. Liu, Chein-Shan, Essam R. El-Zahar, and Chih-Wen Chang. "Solving nonlinear boundary value problems by a boundary shape function method and a splitting and linearizing method." *International Journal of Nonlinear Sciences and Numerical Simulation* (2022).
 110. Sreelakshmi, T. K., Annamma Abraham, A. S. Chethan, Essam R. El-Zahar, C. S. K. Raju, B. T. Raju, and Nehad Ali Shah. "Dynamics of ferromagnetic due to nonlinear thermal buoyancy when Cattaneo–Christov heat flux and magnetic dipole whose magnetic scalars are significant." *Waves in Random and Complex Media* (2022): 1-20.

111. Haq, Fazal, Muzher Saleem, Essam Roshdy El-Zahar, Soumaya Gouadria, and M. Ijaz Khan. "Darcy-Forchheimer Flow of Magnetized Bioconvective Williamson Nanofluid with Variable Thermal Conductivity." *Journal of Magnetism* 26, no. 4 (2021): 378-388.
112. Ahmad, Latif, Saleem Javed, Muhammad Ijaz Khan, M. Riaz Khan, Essam Roshdy El-Zahar, and Abd Allah A. Mousa. "Non-axisymmetric Homann stagnation-point flow of unsteady Walter's B nanofluid over a vertical cylindrical disk." *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* (2021): 09544089211064480.
113. Khan, M. Ijaz, Ali Raza, Maria Naseem, Kamel Al-Khaled, Sami Ullah Khan, M. Imran Khan, Essam Roshdy El-Zahar, and M. Y. Malik. "Comparative analysis for radiative slip flow of magnetized viscous fluid with mixed convection features: Atangana-Baleanu and Caputo-Fabrizio fractional simulations." *Case Studies in Thermal Engineering* 28 (2021): 101682.
114. Khan, Mohsin Ali, M. Izhar Shah, Muhammad Faisal Javed, M. Ijaz Khan, Saim Rasheed, M. A. El-Shorbagy, Essam Roshdy El-Zahar, and M. Y. Malik. "Application of random forest for modelling of surface water salinity." *Ain Shams Engineering Journal* 13, no. 4 (2022): 101635
115. Cao, Yan, Hayder A. Dhahad, Sameer Alsharif, M. A. El-Shorbagy, Kamal Sharma, Ali E. Anqi, Shima Rashidi, Mohamed A. Shamseldin, and Amel S. Shafay. "Predication of the sensitivity of a novel daily triple-periodic solar-based electricity/hydrogen cogeneration system with storage units: Dual parametric analysis and NSGA-II optimization." *Renewable Energy* 192 (2022): 340-360.
116. Ibrahim, Muhammad, Tareq Saeed, M. A. El-Shorbagy, Taher A. Nofal, and Nudrat Aamir. "Study of pressure drop and heat transfer in cooling of lithium-ion battery with rhombic arrangement with two different outlets and different inlet dimensions." *Journal of Energy Storage* 50 (2022): 104255.
117. Yang, Zhengqiang, S. M. Bouzgarrou, Riadh Marzouki, Fatma Aouaini, M. A. El-Shorbagy, Mahidzal Dahari, Said Anwar Shah, and D. L. Suthar. "Cooling a Hot Semiannulus with Constant Heat Flux by Using-Water Nanofluid and a Magnetic Field: Natural Convection Mechanism." *Journal of Nanomaterials* 2022 (2022).
118. Alsallami, SHAMI AM, Sami Ullah Khan, Abuzar Ghaffari, M. Ijaz Khan, M. A. El-Shorbagy, and M. Riaz Khan. "Numerical simulations for optimised flow of second-grade nanofluid due to rotating disk with nonlinear thermal radiation: Chebyshev spectral collocation method analysis." *Pramana* 96, no. 2 (2022): 1-10.
119. Ibrahim, Muhammad, Tareq Saeed, M. A. El-Shorbagy, Taher A. Nofal, and Nudrat Aamir. "Implementation of the artificial neural network to predict the effectiveness of the solar system using Cu/water-ethylene nanofluid to save energy." *Engineering Analysis with Boundary Elements* 138 (2022): 30-41.
120. Wang, Yinyin, Ali Raza, Sami Ullah Khan, M. Ijaz Khan, Mohamed Ayadi, M. A. El-Shorbagy, Nawal A. Alshehri, Fuzhang Wang, and M. Y. Malik. "Prabhakar fractional simulations for hybrid nanofluid with aluminum oxide, titanium oxide and copper nanoparticles along with blood base fluid." *Waves in Random and Complex Media* (2022): 1-20.
121. El-Shorbagy, M. A. "Chaotic Fruit Fly Algorithm for Solving Engineering Design Problems." *Complexity* 2022 (2022).
122. Algelany, A. M., and M. A. El-Shorbagy. "Chaotic Enhanced Genetic Algorithm for Solving the Nonlinear System of Equations." *Computational Intelligence and Neuroscience* 2022 (2022).

123. El-Shorbagy, Mohammed A., and Adel M. El-Refaey. "A hybrid genetic–firefly algorithm for engineering design problems." *Journal of Computational Design and Engineering* 9, no. 2 (2022): 706-730.
124. Cao, Yan, M. A. El-Shorbagy, Kamal Sharma, Ayman A. Aly, and Bassem F. Felemban. "Role of beryllium oxide on the thermal efficiency of microchannel heat exchanger with an optimum fin structure." *Ceramics International* 48, no. 7 (2022): 9973-9986.
125. Mahmood, Raja Tahir, Muhammad Javaid Asad, Saqib Hussain Hadri, M. A. El-Shorbagy, Abd Allah A. Mousa, Rebwar Nasir Dara, Muhammad Awais, and Iskander Tlili. "Bioremediation of textile industrial effluents by *Fomitopsis pinicola* IEBL-4 for environmental sustainability." *Human and Ecological Risk Assessment: An International Journal* (2022): 1-18.
126. Ibrahim, Muhammaad, Syed Inayat Ali Shah, M. A. El-Shorbagy, A. M. Algelany, Vakkar Ali, Ayman A. Aly, and Bassem F. Felemban. "Investigation of the effect of wall geometry change on thermal resistance, temperature uniformity and FOM of a micro-heat sink containing nanofluid flow." *The European Physical Journal Plus* 137, no. 3 (2022): 1-15.
127. Cao, Yan, Mostafa Delpisheh, Saeed Yousefiasl, Hassan Athari, M. A. El-Shorbagy, Fahd Jarad, Mahidzal Dahari, and Makatar Wae-hayee. "Examination and optimization of a novel auxiliary trigeneration system for a ship through waste-to-energy from its engine." *Case Studies in Thermal Engineering* 31 (2022): 101860.
128. El-Shorbagy, Mohammed A., Islam M. Eldesoky, Mohamady M. Basyouni, Islam Nassar, and Adel M. El-Refaey. "Chaotic Search-Based Salp Swarm Algorithm for Dealing with System of Nonlinear Equations and Power System Applications." *Mathematics* 10, no. 9 (2022): 1368.
129. Omar, Hala A., and M. A. El-Shorbagy. "Modified grasshopper optimization algorithm-based genetic algorithm for global optimization problems: the system of nonlinear equations case study." *Soft Computing* 26, no. 18 (2022): 9229-9245.
130. Chasreechai, Saowaluck, Thanin Sitthiwiratham, M. A. El-Shorbagy, Muhammad Sohail, Ubaid Ullah, and Mati ur Rahman. "Qualitative theory and approximate solution to a dynamical system under modified type Caputo-Fabrizio derivative." *AIMS Mathematics* 7, no. 8 (2022): 14376-14393.
131. El-Shorbagy, Mohammed A., Hala A. Omar, and Tamer Fetouh. "Hybridization of Manta-Ray Foraging Optimization Algorithm with Pseudo Parameter-Based Genetic Algorithm for Dealing Optimization Problems and Unit Commitment Problem." *Mathematics* 10, no. 13 (2022): 2179.
132. Cao, Yan, M. A. El-Shorbagy, Kamal Sharma, Sagr Alamri, Ali A. Rajhi, Ali E. Anqi, and A. S. El-Shafay. "Amino acid functionalized boron nitride nanotubes as an effective nanocarriers for Thiotepa anti-cancer drug delivery." *Journal of Molecular Liquids* 344 (2021): 117967.
133. Khater, Mostafa MA, S. K. Elagan, M. A. El-Shorbagy, S. H. Alfalqi, J. F. Alzaidi, and Nawal A. Alshehri. "Folded novel accurate analytical and semi-analytical solutions of a generalized Calogero–Bogoyavlenskii–Schiff equation." *Communications in Theoretical Physics* 73, no. 9 (2021): 095003.
134. Zhang, Xiao-Hong, Tareq Saeed, Ebrahim A. Algehyne, M. A. El-Shorbagy, Adel M. El-Refaey, and Muhammad Ibrahim. "Effect of L-shaped heat source and magnetic field on heat transfer and irreversibilities in nanofluid-filled oblique complex enclosure." *Scientific Reports* 11, no. 1 (2021): 1-19.
135. Alqarni, M. M., Emad E. Mahmoud, Ebrahim A. Algehyne, Adel M. El-Refaey, M. A. El-Shorbagy, and Muhammad Ibrahim. "Improvement of the thermal and hydraulic performance of parabolic trough collectors using hybrid nanofluids and novel turbulators with holes and ribs." *Sustainable Energy Technologies and Assessments* 47 (2021): 101480.

136. Zhang, Xiao-Hong, Awatef Abidi, A. El-Sayed Ahmed, M. Riaz Khan, M. A. El-Shorbagy, Meshal Shutaywi, Alibek Issakhov, and Ahmed M. Galal. "MHD stagnation point flow of nanofluid over a curved stretching/shrinking surface subject to the influence of Joule heating and convective condition." *Case Studies in Thermal Engineering* 26 (2021): 101184
137. Yang, Zhao, W. U. JingChun, Yasser Elmasry, Abdulaziz Alanazi, Ammar Armghan, Mohana Alanazi, A. M. Algelany, and Makatar Wae-hayee. "Techno-economic and multi objective optimization of zero carbon emission biomass based supercritical carbon dioxide oxy combustion system integrated with carbon dioxide liquefaction system and solid oxide electrolyzer." *Journal of CO2 Utilization* 64 (2022): 102169.
138. He, Xinlin, Maawiya Ould Sidi, N. Ameer Ahammad, Mohamed Abdelghany Elkotb, Samia Elattar, and A. M. Algelany. "Artificial neural network joined with lattice Boltzmann method to study the effects of MHD on the slip velocity of FMWNT/water nanofluid flow inside a microchannel." *Engineering Analysis with Boundary Elements* 143 (2022): 95-108.
139. Alharbi, Khalid Abdulkhalik M., M. Riaz Khan, Maawiya Ould Sidi, A. M. Algelany, Samia Elattar, and N. Ameer Ahammad. "Investigation of hydromagnetic bioconvection flow of Oldroyd-B nanofluid past a porous stretching surface." *Biomass Conversion and Biorefinery* (2022): 1-12.
140. Cao, Yan, Hamdi Ayed, A. M. Algelany, Mahidzal Dahari, Phuoc Quy Phong Nguyen, Khaled A. Gepreel, Mohamed Ehab, and Makatar Wae-hayee. "Receiving heat from a PCM tank by using natural convection of water and NEPCM: A simulation for LHTES application." *Case Studies in Thermal Engineering* (2022): 102123.
141. Derdour, Abdessamed, Abderrazak Bouanani, Nouredine Kaid, Kanit Mukdasai, A. M. Algelany, Hijaz Ahmad, Younes Menni, and Houari Ameer. "Groundwater Potentiality Assessment of Ain Sefra Region in Upper Wadi Namous Basin, Algeria Using Integrated Geospatial Approaches." *Sustainability* 14, no. 8 (2022): 4450.
142. Naseem, Tahir, Umar Nazir, Essam R. El-Zahar, Ahmed M. Algelany, and Muhammad Sohail. "Numerical Computation of Dufour and Soret Effects on Radiated Material on a Porous Stretching Surface with Temperature-Dependent Thermal Conductivity." *Fluids* 6, no. 6 (2021): 196.
143. Attia, Emad R., and George E. Chatzarakis. "Oscillation tests for difference equations with non-monotone retarded arguments." *Applied Mathematics Letters* 123 (2022): 107551..
144. Attia, Emad R., and George E. Chatzarakis. "Iterative oscillation criteria for first-order difference equations with non-monotone advanced arguments." *Journal of Applied Mathematics and Computing* (2021): 1-17.
145. Attia, Emad R., and Hassan A. El-Morshedy. "NEW OSCILLATION CRITERIA FOR FIRST ORDER LINEAR DIFFERENTIAL EQUATIONS WITH NON-MONOTONE DELAYS." *Journal of Applied Analysis & Computation* 12, no. 4 (2022): 1579-1594..
146. Attia, Emad R., and George E. Chatzarakis. "Upper Bounds for the Distance between Adjacent Zeros of First-Order Linear Differential Equations with Several Delays." *Mathematics* 10, no. 4 (2022): 648.

147. Attia, Emad R., and Bassant M. El-Matary. "New aspects for the oscillation of first-order difference equations with deviating arguments." *Opuscula Mathematica* 42, no. 3 (2022): 393-413.
148. Al-Askar, Farah M., Wael W. Mohammed, Clemente Cesarano, and M. El-Morshedy. "The Influence of Multiplicative Noise and Fractional Derivative on the Solutions of the Stochastic Fractional Hirota–Maccari System." *Axioms* 11, no. 8 (2022): 357.
149. Rafique, Aqsa, Naz Saud, Naila Amjad, Muhammad Ijaz, Fastel Chipepa, and Mahmoud El-Morshedy. "Statistical Analysis of Water Purification (Using Vinyl Chloride) Data." *Mathematical Problems in Engineering* 2022.
150. Ali, Muhammad, Alamgir Khalil, Zahra Almaspoor, Sundus Hussain, Umair Khalil, and M. El-Morshedy. "Alpha Power Generalized Inverse Rayleigh Distribution: Its Properties and Applications." *Mathematical Problems in Engineering* 2022 (2022).
151. Ahmad, Zubair, Zahra Almaspoor, Faridoon Khan, and Mahmoud El-Morshedy. "On Predictive Modeling Using a New Flexible Weibull Distribution and Machine Learning Approach: Analyzing the COVID-19 Data." *Mathematics* 10, no. 11 (2022): 1792.
152. Mohammed, Wael W., Farah M. Al-Askar, Clemente Cesarano, Thongchai Botmart, and M. El-Morshedy. "Wiener Process Effects on the Solutions of the Fractional $(2+ 1)$ -Dimensional Heisenberg Ferromagnetic Spin Chain Equation." *Mathematics* 10, no. 12 (2022): 2043.
153. El-Morshedy, Mahmoud, Rashad M. El-Sagheer, Samah H. El-Essawy, Khaled M. Alqahtani, Mohamed El-Dawoody, and Mohamed S. Eliwa. "One-and Two-Sample Predictions Based on Progressively Type-II Censored Carbon Fibres Data Utilizing a Probability Model." *Computational Intelligence and Neuroscience* 2022 (2022).
154. El-Morshedy, Mahmoud, Muhammad H. Tahir, Muhammad Adnan Hussain, Afrah Al-Bossly, and Mohamed S. Eliwa. "A New Flexible Univariate and Bivariate Family of Distributions for Unit Interval $(0, 1)$." *Symmetry* 14, no. 5 (2022): 1040.
155. El-Sagheer, Rashad M., Muqrin A. Almuqrin, Mahmoud El-Morshedy, Mohamed S. Eliwa, Fathy H. Eissa, and Doaa A. Abdo. "Bayesian Inferential Approaches and Bootstrap for the Reliability and Hazard Rate Functions under Progressive First-Failure Censoring for Coronavirus Data from Asymmetric Model." *Symmetry* 14, no. 5 (2022): 956.
156. Kilai, Mutua, Gichuhi A. Waititu, Wanjoya A. Kibira, Huda M. Alshanbari, and M. El-Morshedy. "A new generalization of Gull Alpha Power Family of distributions with application to modeling COVID-19 mortality rates." *Results in Physics* 36 (2022): 105339.
157. Mohammed, Wael W., Farah M. Al-Askar, Clemente Cesarano, and M. El-Morshedy. "The Optical Solutions of the Stochastic Fractional Kundu–Mukherjee–Naskar Model by Two Different Methods." *Mathematics* 10, no. 9 (2022): 1465.
158. Mohammed, Wael W., Mohammed Alshammari, Clemente Cesarano, Sultan Albadrani, and M. El-Morshedy. "Brownian Motion Effects on the Stabilization of Stochastic Solutions to Fractional Diffusion Equations with Polynomials." *Mathematics* 10, no. 9 (2022): 1458.

159. Saeed Shah, Syed Muhammad, M. El-Morshedy, and Wahidullah Mansoor. "Spatial-Temporal Interpolation of Reference Evapotranspiration for Pakistan." *Mathematical Problems in Engineering* 2022 (2022).
160. El-Morshedy, Mahmoud, Rashad M. El-Sagheer, Mohamed S. Eliwa, and Khaled M. Alqahtani. "Asymmetric Power Hazard Distribution for COVID-19 Mortality Rate under Adaptive Type-II Progressive Censoring: Theory and Inferences." *Computational Intelligence and Neuroscience* 2022 (2022).
161. Ahsan-ul-Haq, Muhammad, Afrah Al-Bossly, Mahmoud El-Morshedy, and Mohamed S. Eliwa. "Poisson XLindley Distribution for Count Data: Statistical and Reliability Properties with Estimation Techniques and Inference." *Computational Intelligence and Neuroscience* 2022 (2022).
162. Al-Askar, Farah M., Wael W. Mohammed, Mohammad Alshammari, and M. El-Morshedy. "Effects of the Wiener Process on the Solutions of the Stochastic Fractional Zakharov System." *Mathematics* 10, no. 7 (2022): 1194.
163. Mohammed, Wael W., Naveed Iqbal, Abeer M. Albalahi, A. E. Abouelregal, D. Atta, Hijaz Ahmad, and M. El-Morshedy. "Brownian motion effects on analytical solutions of a fractional-space long-short-wave interaction with conformable derivative." *Results in Physics* 35 (2022): 105371.
164. EL-Sagheer, Rashad M., Mohamed S. Eliwa, Khaled M. Alqahtani, and Mahmoud EL-Morshedy. "Asymmetric randomly censored mortality distribution: Bayesian framework and parametric bootstrap with application to COVID-19 data." *Journal of Mathematics* 2022 (2022).
165. Albosaily, Sahar, Wael W. Mohammed, Ali Rezaiguia, Mahmoud El-Morshedy, and Elsayed M. Elsayed. "The influence of the noise on the exact solutions of a Kuramoto-Sivashinsky equation." *Open Mathematics* 20, no. 1 (2022): 108-116.
166. Eliwa, Mohamed S., Muhammad Ahsan-ul-Haq, Afrah Al-Bossly, and Mahmoud El-Morshedy. "A Unit Probabilistic Model for Proportion and Asymmetric Data: Properties and Estimation Techniques with Application to Model Data from SC16 and P3 Algorithms." *Mathematical Problems in Engineering* 2022 (2022).
167. Al-Askar, Farah M., Wael W. Mohammed, Abeer M. Albalahi, and Mahmoud El-Morshedy. "The influence of noise on the solutions of fractional stochastic bogoyavlenskii equation." *Fractal and Fractional* 6, no. 3 (2022): 156.
168. Al-Askar, Farah M., Wael W. Mohammed, Abeer M. Albalahi, and Mahmoud El-Morshedy. "The Impact of the Wiener process on the analytical solutions of the stochastic $(2+ 1)$ -dimensional breaking soliton equation by using tanh-coth method." *Mathematics* 10, no. 5 (2022): 817.
169. Arif, Muhammad, Dost Muhammad Khan, Muhammad Aamir, Mahmoud El-Morshedy, Zubair Ahmad, and Zardad Khan. "A New Flexible Exponentiated-X Family of Distributions: Characterizations and Applications to Lifetime Data." *IETE Journal of Research* (2022): 1-13.
170. Albosaily, Sahar, Wael W. Mohammed, Amjad E. Hamza, Mahmoud El-Morshedy, and Hijaz Ahmad. "The exact solutions of the stochastic fractional-space Allen-Cahn equation." *Open Physics* 20, no. 1 (2022): 23-29.

171. Saud, Naz, Aqsa Rafique, Muhammad Ijaz, Naila Amjad, Mahmoud El-Morshedy, and Syed Habib Shah. "Characterizations and Entropy Measures of the Exponentiated Generalized Frechet Geometric Distribution." *Advances in Mathematical Physics* 2022 (2022).
172. Willayat, Farwa, Naz Saud, Muhammad Ijaz, Anita Silvianita, and Mahmoud El-Morshedy. "Marshall–Olkin Extended Gumbel Type-II Distribution: Properties and Applications." *Complexity* 2022 (2022).
173. Ahmad, Sohaib, Sardar Hussain, Javid Shabbir, Muhammad Aamir, M. El-Morshedy, Zubair Ahmad, and Sharifah Alrajhi. "Improved generalized class of estimators in estimating the finite population mean using two auxiliary variables under two-stage sampling." *AIMS Mathematics* 7, no. 6 (2022): 10609-10624.
174. Ahmad, Zubair, Zahra Almaspoor, Faridoon Khan, Sharifah E. Alhazmi, M. El-Morshedy, O. Y. Ababneh, and Amer Ibrahim Al-Omari. "On fitting and forecasting the log-returns of cryptocurrency exchange rates using a new logistic model and machine learning algorithms." *AIMS Mathematics* 7, no. 10 (2022): 18031-18049.
175. EL-Sagheer, Rashad M., Mohamed S. Eliwa, Khaled M. Alqahtani, and Mahmoud El-Morshedy. "Bayesian and non-Bayesian inferential approaches under lower-recorded data with application to model COVID-19 data." *AIMS Mathematics* 7, no. 9 (2022): 15965-15981.
176. Iftikhar, Anum, Hongbo Shi, Saddam Hussain, Ather Qayyum, M. El-Morshedy, and Sanaa Al-Marzouki. "Estimation of finite population mean in presence of maximum and minimum values under systematic sampling scheme." *AIMS Mathematics* 7, no. 6 (2022): 9825-9834.
177. Khalil, Alamgir, Kainat Arshad, Muhammad Ijaz, Sajjad Ahmad Khan, and Sadaf Manzoor. "A novel transmuted lomax exponential distribution: Properties and applications." *Journal of Intelligent & Fuzzy Systems* Preprint: 1-14.
178. Ali, Kashif, Hafsa Hina, Muhammad Ijaz, and Mahmoud El-Morshedy. "Nonlinear Cointegration and Asymmetric Adjustment in Purchasing Power Parity of the USA, Germany, and Pakistan." *Complexity* 2021 (2021).
179. Afify, Ahmed Z., Mahmoud Elmorshedy, and M. S. Eliwa. "A new skewed discrete model: properties, inference, and applications." *Pakistan Journal of Statistics and Operation Research* (2021): 799-816.
180. Altun, Emrah, and Mahmoud El-Morshedy. "SimBetaReg Web-Tool: The Easiest Way to Implement the Beta and Simplex Regression Models." *Symmetry* 13, no. 12 (2021): 2437.
181. Korkmaz, Mustafa Ç., Emrah Altun, Morad Alizadeh, and M. El-Morshedy. "The Log Exponential-Power Distribution: Properties, Estimations and Quantile Regression Model." *Mathematics* 9, no. 21 (2021): 2634.
182. Mohammed, Wael W., Meshari Alesemi, Sahar Albosaily, Naveed Iqbal, and M. El-Morshedy. "The Exact Solutions of Stochastic Fractional-Space Kuramoto-Sivashinsky Equation by Using (G' G)-Expansion Method." *Mathematics* 9, no. 21 (2021): 2712.
183. Mohammed, Wael W., Raed Qahiti, Hijaz Ahmad, Jamel Baili, Fatma Elahraa Mansour, and M. El-Morshedy. "Exact solutions for the system of stochastic equations for the ion sound and Langmuir waves." *Results in Physics* 30 (2021): 104841.

184. El-Morshedy, Mahmoud, Adel A. El-Faheem, Afrah Al-Bossly, and Mohamed El-Dawoody. "Exponentiated Generalized Inverted Gompertz Distribution: Properties and Estimation Methods with Applications to Symmetric and Asymmetric Data." *Symmetry* 13, no. 10 (2021): 1868.
185. El-Morshedy, Mahmoud, Morad Alizadeh, Afrah Al-Bossly, and Mohamed S. Eliwa. "A Probability Mass Function for Various Shapes of the Failure Rates, Asymmetric and Dispersed Data with Applications to Coronavirus and Kidney Dysmorphogenesis." *Symmetry* 13, no. 10 (2021): 1790.
186. Almazah, Mohammed MA, Muqrin A. Almuqrin, Mohamed S. Eliwa, Mahmoud El-Morshedy, and Haitham M. Yousof. "Modeling Extreme Values Utilizing an Asymmetric Probability Function." *Symmetry* 13, no. 9 (2021): 1730.
187. El-Morshedy, Mahmoud, Hassan M. Aljohani, Mohamed S. Eliwa, Mazen Nassar, Mohammed K. Shakhatreh, and Ahmed Z. Afify. "The Exponentiated Burr–Hatke Distribution and Its Discrete Version: Reliability Properties with CSALT Model, Inference and Applications." *Mathematics* 9, no. 18 (2021): 2277.
188. Altun, Emrah, Mustafa Ç. Korkmaz, Mahmoud El-Morshedy, and Mohamed S. Eliwa. "A new flexible family of continuous distributions: the additive odd-G family." *Mathematics* 9, no. 16 (2021): 1837.
189. Mohammed, Wael W., Hijaz Ahmad, Hamid Boulares, Fathi Khelifi, and Mahmoud El-Morshedy. "Exact solutions of Hirota–Maccari system forced by multiplicative noise in the Itô sense." *Journal of Low Frequency Noise, Vibration and Active Control* 41, no. 1 (2022): 74-84.
190. Mohammed, Wael W., and M. El-Morshedy. "The influence of multiplicative noise on the stochastic exact solutions of the Nizhnik–Novikov–Veselov system." *Mathematics and Computers in Simulation* 190 (2021): 192-202.
191. El-Morshedy, M., M. S. Eliwa, and Abhishek Tyagi. "A discrete analogue of odd Weibull-G family of distributions: properties, classical and Bayesian estimation with applications to count data." *Journal of Applied Statistics* 49, no. 11 (2022): 2928-2952.
192. Eliwa, M. S., and M. El-Morshedy. "A one-parameter discrete distribution for over-dispersed data: Statistical and reliability properties with applications." *Journal of Applied Statistics* 49, no. 10 (2022): 2467-2487.
193. El-Morshedy, M., M. S. Eliwa, A. El-Gohary, Ehab M. Almetwally, and R. EL-Desokey. "Exponentiated generalized inverse flexible Weibull distribution: Bayesian and non-Bayesian estimation under complete and type II censored samples with applications." *Communications in mathematics and statistics* (2021): 1-22.
194. El-Morshedy, M., Emrah Altun, and M. S. Eliwa. "A new statistical approach to model the counts of novel coronavirus cases." *Mathematical Sciences* 16, no. 1 (2022): 37-50.
195. Al-Bossly, Afrah. "E-Bayesian and Bayesian Estimation for the Lomax Distribution under Weighted Composite LINEX Loss Function." *Computational Intelligence and Neuroscience* 2021 (2021).

196. Khan, Zahid, Afrah Al-Bossly, Mohammed Almazah, and Fuad S. Alduais. "On Statistical Development of Neutrosophic Gamma Distribution with Applications to Complex Data Analysis." *Complexity* 2021 (2021).
197. Al-Bossly, Afrah, and Mohamed S. Eliwa. "Asymmetric Probability Mass Function for Count Data Based on the Binomial Technique: Synthesis and Analysis with Inference." *Symmetry* 14, no. 4 (2022): 826.
198. Al-Bossly, Afrah. "Inference of competing risks Chen lifetime populations under type-I censoring scheme when causes of failure are partially observed." *Alexandria Engineering Journal* 61, no. 12 (2022): 12991-12999.
199. Batiha, Iqbal M., Abeer A. Al-Nana, Ramzi B. Albadarneh, Adel Ouannas, Ahmad Al-Khasawneh, and Shaher Momani. "Fractional-order coronavirus models with vaccination strategies impacted on Saudi Arabia's infections." *AIMS Mathematics* 7, no. 7 (2022): 12842-12858.
200. AlBaidani, Mashael M. "Statistical Convergence of Δ -Spaces Using Fractional Order." *Symmetry* 14, no. 8 (2022): 1685.
201. Notion of New Structure of Uncertain Sequences Using Δ - spaces Journal of Mathematics
202. AlBaidani, Mashael M., Abdul Hamid Ganie, and Asia Fahd Mohammad Almuteb. "Generalized notion of integral inequalities of variables." *Open Physics* 20, no. 1 (2022): 822-828.
203. Fathima, D., M. M. Albaidani, A. H. Ganie, and A. Akhter. "New structure of Fibonacci numbers using concept of Δ -operator." *J. Math Comput Sci* 26 (2022): 101-112.
204. Singh, Abha, Abdul Hamid Ganie, and Mashael M. Albaidani. "Some New Inequalities Using Nonintegral Notion of Variables." *Advances in Mathematical Physics* 2021 (2021).
205. Albaidani, Mashael M., Hari M. Srivastava, and Abdul Hamid Ganie. "Notion of non-absolute family of spaces." *International Journal of Nonlinear Analysis and Applications* (2022).
206. Ganie, Abdul Hamid, and Mashael M. Albaidani. "Matrix structure of Jacobsthal numbers." *Journal of Function Spaces* 2021 (2021).
207. Swalmeh, Mohammed Z., Feras Shatat, Firas A. Alwawi, Mohd Asrul Hery Ibrahim, Ibrahim Mohammed Sulaiman, Nusayba Yaseen, and Mohammad FM Naser. "Effectiveness of Radiation on Magneto-Combined Convective Boundary Layer Flow in Polar Nanofluid around a Spherical Shape." *Fractal and Fractional* 6, no. 7 (2022): 383.
208. Alwawi, Firas, Mohammed Swalmeh, Ibrahim Sulaiman, Nusayba Yaseen, Hamzeh Alkawasbeh, and Tarik Al Soub. "Numerical investigation of heat transfer characteristics

- for blood/water-based hybrid nanofluids in free convection about a circular cylinder." *Journal of Mechanical Engineering and Sciences* 16, no. 2 (2022): 8931-8942.
209. Alwawi, Firas, Ibrahim M. Sulaiman, Mohammed Z. Swalmeh, and Nusayba Yaseen. "Energy transport boosters of magneto micropolar fluid flowing past a cylinder: A case of laminar combined convection." *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science* (2022): 09544062221111055.
210. Yaseen, Nusayba, Feras Shatat, Firas A. Alwawi, Mohammed Z. Swalmeh, Muhammad Salman Kausar, and Ibrahim Mohammed Sulaiman. "Using Micropolar Nanofluid under a Magnetic Field to Enhance Natural Convective Heat Transfer around a Spherical Body." *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences* 96, no. 1 (2022): 179-193.
211. Alwawi, Firas A., Abdulkareem Saleh Hamarsheh, Hamzeh T. Alkawasbeh, and Ruwaidiah Idris. "Mixed Convection Flow of Magnetized Casson Nanofluid over a Cylindrical Surface." *Coatings* 12, no. 3 (2022): 296.
212. Kamal, Fatma Mohamed, Ahmed Elsaid, and A. Elsonbaty. "Ghost attractor in fractional order blinking system and its application." *Nonlinear Dynamics* 108, no. 4 (2022): 4471-4497.
213. Ghosh, D., P. K. Santra, G. S. Mahapatra, Amr Elsonbaty, and A. A. Elsadany. "A discrete-time epidemic model for the analysis of transmission of COVID19 based upon data of epidemiological parameters." *The European Physical Journal Special Topics* (2022): 1-10.
214. Al-Khedhairi, Abdulrahman, Abdelalim A. Elsadany, and Amr Elsonbaty. "On the Dynamics of a Discrete Fractional-Order Cournot–Bertrand Competition Duopoly Game." *Mathematical Problems in Engineering* 2022 (2022).
215. Elsadany, Abdelalim, Abdulrahman Al-khedhairi, Hamdy Nabih Agiza, Baogui Xin, and Amr Elsonbaty. "Discrete Fractional-Order Systems with Applications in Engineering and Natural Sciences." *Mathematical Problems in Engineering* 2022 (2022).
216. Elsonbaty, Amr, Anis Allagui, and Ahmed S. Elwakil. "Extended Instantaneous Spectral Analysis (E-ISA) for Advanced Signal Processing." *IEEE Transactions on Instrumentation and Measurement* 71 (2022): 1-10.
217. Aldurayhim, A., A. A. Elsadany, and A. Elsonbaty. "On dynamic behavior of a discrete fractional-order nonlinear prey–predator model." *Fractals* 29, no. 08 (2021): 2140037.
218. Elsonbaty, Amr, and A. A. Elsadany. "On discrete fractional-order Lotka-Volterra model based on the Caputo difference discrete operator." *Mathematical Sciences* (2021): 1-13.

219. Ahmed, Nauman, Amr Elsonbaty, Ali Raza, Muhammad Rafiq, and Waleed Adel. "Numerical simulation and stability analysis of a novel reaction–diffusion COVID-19 model." *Nonlinear Dynamics* 106, no. 2 (2021): 1293-1310.
220. Zhou, Wei, Yinxia Cao, Amr Elsonbaty, A. A. Elsadany, and Tong Chu. "Bifurcation analysis of a bounded rational duopoly game with consumer surplus." *International Journal of Bifurcation and Chaos* 31, no. 07 (2021): 2150097.
221. Khan, Naveed Ahmad, Muhammad Sulaiman, and Fahad Sameer Alshammari. "Heat transfer analysis of an inclined longitudinal porous fin of trapezoidal, rectangular and dovetail profiles using cascade neural networks." *Structural and Multidisciplinary Optimization* 65, no. 9 (2022): 1-14.
222. Khan, Muhammad Fawad, Muhammad Sulaiman, and Fahad Sameer Alshammari. "A hybrid heuristic-driven technique to study the dynamics of savanna ecosystem." *Stochastic Environmental Research and Risk Assessment* (2022): 1-25.
223. Nonlaopon, Kamsing, Naveed Ahmad Khan, Muhammad Sulaiman, Fahad Sameer Alshammari, and Ghaylen Laouini. "Heat transfer analysis of nanofluid flow in a rotating system with magnetic field using an intelligent strength stochastic-driven approach." *Nanomaterials* 12, no. 13 (2022): 2273.
224. Ullah, Mohammad Safi, Fahad Sameer Alshammari, and M. Zulfikar Ali. "Collision phenomena among the solitons, periodic and Jacobi elliptic functions to a (3+ 1)-dimensional Sharma-Tasso-Olver-like model." *Results in Physics* 36 (2022): 105412.
225. Sulaiman, Muhammad, Muhammad Umar, Kamsing Nonlaopon, and Fahad Sameer Alshammari. "The Quantitative Features Analysis of the Nonlinear Model of Crop Production by Hybrid Soft Computing Paradigm." *Agronomy* 12, no. 4 (2022): 799.
226. Khan, Naveed Ahmad, Muhammad Sulaiman, Carlos Andrés Tavera Romero, and Fahad Sameer Alshammari. "Analysis of Nanofluid Particles in a Duct with Thermal Radiation by Using an Efficient Metaheuristic-Driven Approach." *Nanomaterials* 12, no. 4 (2022): 637.
227. Khan, Naveed Ahmad, Muhammad Sulaiman, Ebenezer Bonyah, Jamel Seidu, and Fahad Sameer Alshammari. "Investigation of Three-Dimensional Condensation Film Problem over an Inclined Rotating Disk Using a Nonlinear Autoregressive Exogenous Model." *Computational Intelligence and Neuroscience* 2022 (2022).
228. Khan, Naveed Ahmad, Muhammad Sulaiman, Carlos Andrés Tavera Romero, Ghaylen Laouini, and Fahad Sameer Alshammari. "Study of rolling motion of ships in random beam seas with nonlinear restoring moment and damping effects using neuroevolutionary technique." *Materials* 15, no. 2 (2022): 674.
229. Fawad Khan, M., Ebenezer Bonyah, Fahad Sameer Alshammari, Syed Muhammad Ghufuran, and Muhammad Sulaiman. "Modelling and Analysis of Virotherapy of Cancer Using an Efficient Hybrid Soft Computing Procedure." *Complexity* 2022 (2022).
230. Khan, Muhammad Fawad, Muhammad Sulaiman, Carlos Andrés Tavera Romero, and Fahad Sameer Alshammari. "A Quantitative Study of Non-Linear Convective Heat Transfer Model by Novel Hybrid Heuristic Driven Neural Soft Computing." *IEEE Access* 10 (2022): 34133-34153.
231. Khan, Naveed Ahmad, Fahad Sameer Alshammari, Carlos Andrés Tavera Romero, Muhammad Sulaiman, and Seyedali Mirjalili. "An Optimistic Solver for the Mathematical Model of the Flow

- of Johnson Segalman Fluid on the Surface of an Infinitely Long Vertical Cylinder." *Materials* 14, no. 24 (2021): 7798.
232. Khan, Naveed Ahmad, Fahad Sameer Alshammari, Carlos Andrés Tavera Romero, and Muhammad Sulaiman. "Study of Nonlinear Models of Oscillatory Systems by Applying an Intelligent Computational Technique." *Entropy* 23, no. 12 (2021): 1685.
233. Khan, Naveed Ahmad, Fahad Sameer Alshammari, Carlos Andrés Tavera Romero, Muhammad Sulaiman, and Ghaylen Laouini. "Mathematical Analysis of Reaction–Diffusion Equations Modeling the Michaelis–Menten Kinetics in a Micro-Disk Biosensor." *Molecules* 26, no. 23 (2021): 7310.
234. Kedim, Imed, and Maher Berzig. "Fixed point theorems for Maia α - ψ contractive type mappings with applications." *Journal of Mathematical Analysis and Applications* 504, no. 1 (2021): 125381.

List of Publications 2020-2021

1. R. George, F. Alshammari, K.P. Reshma, R. Rajagopalan "Generalised Presic Type Operators in Modular Metric Space and an Application to Integral Equations of Caratheodary Type Functions", *Journal of Mathematics* (2021), 2021, Article ID 7915448, DoI:10.1155/20217915448
2. M. El-Morshedy, F.S. Alshammari, Y.S. Hamed, M.S. Eliwa, "A new family of continuous probability distributions", *Entropy*, 23(2021), 194.
3. M. El-Morshedy, F.S. Alshammari, A. Tyagi, I. Elbatal, "Bayesian and frequentist inferences on a type I half-logistic odd Weibull generator with applications in engineering", *Entropy*, 23(2021), 446.
4. G.A.A. Alashaari, F.S. Alshammari, "The Role of Probability Distributions in Establishing Acceptance Sampling Plans and Quality Control Charts", *Turkish Journal of Computer and Mathematics Education*, 12(2021): 1989-2000.
5. M.S. Eliwa, F.S.S. Alshammari, K.M.M. Abualnaja, "A Flexible Extension to an Extreme Distribution", *Symmetry*, 13(2021), 745.

6. F.S. Alshammari, M.F. Hoque, "Dynamical solitary interactions between lump waves and different forms of n-solitons ($n \rightarrow \infty$) for the $(2+ 1)$ -dimensional shallow water wave equation", *Partial Differential Equations in Applied Mathematics* 3 (2021): 100026.
7. E.R. Attia, "Improved Oscillation Criteria for First Order Differential Equations with Several Non-monotone Delays", *Advances in Difference Equations* 2021(2021), 1-12.
8. O. Ashour, "Basic steffensen's method of higher-order convergence", *Mediterranean Journal of Mathematics* 18 (2021), 1-16.
9. M.M. Awad, W. Koepf, A.O. Mohammed, M.A. Rakha, A.K. Rathie, "A Study of Extensions of Classical Summation Theorems for the Series ${}_3F_2$ and ${}_4F_3$ with Applications", *Results in Mathematics* 76 (2021), 1-19.
10. M.M. Awad, "On a Generalization of Kummer's Second-Type ${}_1F_1$ and ${}_2F_2$ ", *Mathematical Problems in Engineering*, 2021(2021).
11. M.M. Awad, A.O. Mohammed, M.A. Rakha, A.K. Rathie, "On an interesting extension of Kummer's second theorem with applications", *Communications of the Korean Mathematical Society* 36 (2021), 63-101.
12. M.M. Awad, A.O. Mohammed, M.A. Rakha, A.K. Rathie, "On Several New Laplace Transforms of Generalized Hypergeometric Functions ${}_2F_2(x)$ ", *Boletim da Sociedade Paranaense de Matemática* 39 (2021), 97-109.
13. H. Abdelli, G. Askri, I. Kedim, "Equicontinuity of Maps on Local Dendrites", *Qualitative Theory of Dynamical Systems* 20 (2021), 1-12.
14. I. Kedim, M. Berzig, "Fixed point theorems for Maia α - ψ contractive type mappings with applications", *Journal of Mathematical Analysis and Applications*, 504(2021) 125381.
15. M. Berzig, I. Kedim, "Eilenberg–Jachymski collections and its first consequences for the fixed point theory", *Journal of Fixed Point Theory and Applications* 23 (2021), 1-13.
16. A. Gupta, S. Kumar, R.D. Sarma, P.K. Garg, R. George, "A Note on the Generalized Nonlinear Vector Variational-Like Inequality Problem", *Journal of Function Spaces* 2021(2021).
17. M. Rashid, R. Bibi, R. George, Z.D. Mitrovic, "The coincidence point results and rational contractions in E (s)-distance spaces", *Mathematical Analysis and its Contemporary Applications* 3 (2021), 55-67.
18. R. Jain, H.K. Nashine, R. George, Z.D. Mitrović, "On Extended Branciari-Distance Spaces and Applications to Fractional Differential Equations", *Journal of Function Spaces* 2021(2021).

19. R. George, Z.D. Mitrović, H. Aydi, “On Best Approximations in Hyperconvex Spaces”, *Journal of Function Spaces* 2021(2021).
20. S. Khatoon, I. Uddin, J. Ali, R. George, “Common Fixed Points of Two-Nonexpansive Mappings via a Faster Iteration Procedure”, *Journal of Function Spaces* 2021(2021).
21. M. Joshi, A. Tomar, H.A. Nabwey, R. George, “On Unique and Nonunique Fixed Points and Fixed Circles in-Metric Space and Application to Cantilever Beam Problem”, *Journal of Function Spaces* 2021(2021).
22. H.K. Nashine, R. Pant, R. George, “Common Positive Solution of Two Nonlinear Matrix Equations Using Fixed Point Results”, *Mathematics*, 9(2021), 2199.
23. A. Alam, R. George, M. Imdad, M. Hasanuzzaman, “Fixed Point Theorems for Nonexpansive Mappings under Binary Relations”, *Mathematics*, 9(2021), 2059.
24. M.B. Zada, M. Sarwar, R. George, Z.D. Mitrović, “Darbo-Type Z_m and L_m contractions and its applications to Caputo fractional integro-differential equations”, *Journal of Computational and Applied Mathematics*, 8(2021), 184-191.
25. B. Carić, T. Došenović, R. George, Z.D. Mitrović, S. Radenović, “On Jungck–Branciari–Wardowski Type Fixed Point Results”, *Mathematics* 9 (2021), 161.
26. R. George, H.K. Pathak, “Some New Extensions of Multivalued Contractions in a b-metric Space and Its Applications”, *Mathematics* 9 (2021), 12.
27. M. Asim, R. George, M. Imdad, “Suzuki type multivalued contractions in C^* -algebra valued metric spaces with an application”, *AIMS Mathematics* 6 (2021), 1126-1139.
28. U. Ahmad, M. Ashraf, A. Abbas, A.M. Rashad, H.A. Nabwey, “Mixed convection flow along a curved surface in the presence of exothermic catalytic chemical reaction”, *Scientific Reports* 11 (2021), 1-10.
29. T. Armaghani, M.S. Sadeghi, A.M. Rashad, M.A. Mansour, A.J. Chamkha, H.A. Nabwey, “MHD mixed convection of localized heat source/sink in an Al_2O_3 -Cu/water hybrid nanofluid in L-shaped cavity”, *Alexandria Engineering Journal* 60 (2021), 2947-2962.
30. H.A. Nabwey, A. Mahdy, “Transient flow of micropolar dusty hybrid nanofluid loaded with Fe_3O_4 -Ag nanoparticles through a porous stretching sheet”, *Results in Physics* 21(2021), 103777.
31. H.A. Nabwey, A. Mahdy, “Numerical approach of micropolar dust-particles natural convection fluid flow due to a permeable cone with nonlinear temperature”, *Alexandria Engineering Journal* 60 (2021), 1739-1749.

32. S.I. Alshber, H.A. Nabwey, "Rough Set Approach for Identifying the Combined Effects of Heat and Mass Transfer Due to MHD Nanofluid Flow over a Vertical Rotating Frame", *Mathematics* 9 (2021), 1798.
33. A. Mahdy, S. Siddiqa, H.A. Nabwey, "Impact of gyrotactic microorganisms on natural nanofluid bioconvection flow by a sphere immersed in porous media", *Journal of Porous Media* 24 (2021).
34. F. Mabood, T.A. Yusuf, A.M. Rashad, W.A. Khan, H.A. Nabwey, "Effects of combined heat and mass transfer on entropy generation due to MHD nanofluid flow over a rotating frame", *CMC-COMPUTERS MATERIALS & CONTINUA* 66 (2021), 575-587.
35. A. Mahdy, F.M. Hady, H.A. Nabwey, "Basic steffensen's method of higher-order convergence", *Thermal Science* 25 (2021), 243-256.
36. M. Hassan, E.R. El-Zahar, S.U. Khan, M. Rahimi-Gorji, A. Ahmad, Boundary layer flow pattern of heat and mass for homogenous shear thinning hybrid-nanofluid: An experimental data base modeling", *Numerical Methods for Partial Differential Equations* 37 (2021), 1234-1249.
37. C.S. Liu, E.R. El-Zahar, Y.W. Chen, "Solving nonlinear elliptic equations in arbitrary plane domains by using a new splitting and linearization technique", *Engineering Analysis with Boundary Elements* 125(2021), 124-134.
38. R.M. Khan, W. Ashraf, E.R. El-Zahar, M. Sohail, A.M. Algelany, P. Thounthong, "Effect of rotational slip on the physical parameter in a micropolar fluid flow past a stretching sheet", *International Journal of Modern Physics B* 35 (2021), 2150169.
39. C.S. Liu, E.R. El-Zahar, C.W. Chang, "A boundary shape function iterative method for solving nonlinear singular boundary value problems", *Mathematics and Computers in Simulation* 187(2021), 614-629.
40. C.S. Liu, E.R. El-Zahar, C.W. Chang, "Three novel fifth-order iterative schemes for solving nonlinear equations", *Mathematics and Computers in Simulation* 187(2021), 282-293.
41. N.A. Shah, E.R. El-Zahar, M.D. Aljoufi, J.D. Chung, "An efficient approach for solution of fractional-order Helmholtz equations", *Advances in Difference Equations* 2021 (2021), 1-15.
42. E.R. EL-Zahar, M.A. Mansour, A.M. Rashad, H.A. EL-Mky, A.M.A EL-Hakiem, "Micropolar nanoliquid flow via mixed convective over an orthogonal cylinder", *Heat Transfer* 50 (2021), 6425-6443.

43. A. Mahdy, E.R. El-Zahar, A.M. Rashad, W. Saad, H.S. Al-Juaydi, "The Magneto-Natural Convection Flow of a Micropolar Hybrid Nanofluid Over a Vertical Plate Saturated in a Porous Medium", *Fluids* 6 (2021), 202.
44. J.C.R. Alcantud, T.M. Al-shami, A. Azzam, "Caliber and Chain Conditions in Soft Topologies.", *Mathematics* 9(2021), 2349.
45. R.A. Hosny, B.A. Asaad, A.A. Azzam, T.M. Al-Shami, "Various Topologies Generated from-Neighbourhoods via Ideals", *Complexity* 2021(2021).
46. M Atef, AA Azzam, "Covering Fuzzy Rough Sets via Variable Precision", *Journal of Mathematics* 2021(2021).
47. A.A. Azzam, "A New Closed Set in Topological Spaces", *Mathematical Problems in Engineering* 2021(2021).
48. M.A. El-Shorbagy, A.Y. Ayoub, "Integrating grasshopper optimization algorithm with local search for solving data clustering problems", *International Journal of Computational Intelligence Systems*, 14(2021), 783-793.
49. M.A. El-Shorbagy, A.A. Mousa, "Constrained multiobjective equilibrium optimizer algorithm for solving combined economic emission dispatch problem", *Complexity*, 2021(2021).
50. AA Mousa, MA El-Shorbagy, I Mustafa, H Alotaibi, "Chaotic Search Based Equilibrium Optimizer for Dealing with Nonlinear Programming and Petrochemical Application", *Processes*, 9(2021), 200.
51. A.E.M. Abd Elazeem, A.A.A. Mousa, M.A. El-Shorbagy, "Detecting All Non-Dominated Points for Multi-Objective Multi-Index Transportation Problems", *Sustainability*, 13(2021), 1372.
52. B. El-Sobky, Y. Abo-Elnaga, A.A.A. Mousa, M.A. El-Shorbagy, "Trust-Region Based Penalty Barrier Algorithm for Constrained Nonlinear Programming Problems: An Application of Design of Minimum Cost Canal Sections", *Mathematics* 3 (2021), 1551.
53. S.M. Zaidi, M.M.A. Sobhi, M. El-Morshedy, A.Z. Afify, "A new generalized family of distributions: Properties and applications", *Aims Math.* 6(2021), 456-4761.
54. E. Altun, M.Ç. Korkmaz, M. El-Morshedy, M.S. Eliwa, "A New Flexible Family of Continuous Distributions: The Additive Odd-G Family", *Mathematics* 9 (2021), 1837.
55. M. El-Morshedy, H.M. Aljohani, M.S. Eliwa, M. Nassar, M.K. Shakhathreh, "The Exponentiated Burr–Hatke Distribution and Its Discrete Version: Reliability Properties with CSALT Model, Inference and Applications", *Mathematics* 9 (2021), 2277.

56. M.M. Salah, E.A. Ahmed, Z.A. Alhussain, H.H. Ahmed, M. El-Morshedy, "Statistical inferences for type-II hybrid censoring data from the alpha power exponential distribution", *Plos one* 16 (2021), e0244316.
57. W.W. Mohammed, N. Iqbal, A. Ali, M. El-Morshedy, "Exact solutions of the stochastic new coupled Konno-Oono equation", *Results in Physics* 21(2021), 103830.
58. W.W. Mohammed, S. Albosaily, N. Iqbal, M. El-Morshedy, "The effect of multiplicative noise on the exact solutions of the stochastic Burgers' equation", *Waves in Random and Complex Media*, 2021(2021), 1-13.
59. M. El-Morshedy, M.S. Eliwa, A. Tyagi, "A discrete analogue of odd Weibull-G family of distributions: properties, classical and Bayesian estimation with applications to count data", *Journal of Applied Statistics*, 2021(2021)1-25.
60. W.W. Mohammed, M. El-Morshedy, "The influence of multiplicative noise on the stochastic exact solutions of the Nizhnik–Novikov–Veselov system", *Mathematics and Computers in Simulation*, 190(2021), 192-202.
61. H.A. Nabwey, S.M.M. El-Kabeir, A.M. Rashad, M.M.M. Abdou, "Effectiveness of Magnetized Flow on Nanofluid Containing Gyrotactic Micro-Organisms over an Inclined Stretching Sheet with Viscous Dissipation and Constant Heat Flux", *Fluids* 6 (2021), 253.
62. A. Elsonbaty, S.M. Salman, A. Aldurayhim, N.F. Abdo, E.A. Hagra, A.A. Elsadany, "Dynamical analysis and encryption key-distribution application of new q-deformed reduced Lorenz system", *SeMA Journal*, 8(2021)1-28.
63. A. Elsonbaty, A.A. Elsadany, "On discrete fractional-order Lotka-Volterra model based on the Caputo difference discrete operator", *Mathematical Sciences*, 8(2021), 1-13.
64. R. Ramaswamy, A.H.A. Kader, A. Elsonbaty, "New Exact Nematicon Solutions of Liquid Crystal Model With Different Types of Nonlinearities", *IEEE Access* 9(2021), 107909-107916.
65. N. Ahmed, A. Elsonbaty, A. Raza, M. Rafiq, W. Adel, "Numerical simulation and stability analysis of a novel reaction–diffusion COVID-19 model", *Nonlinear Dynamics* volume 106(2021), 1293–1310.
66. W. Zhou, Y. Cao, A. Elsonbaty, A.A. Elsadany, T. Chu, "Bifurcation Analysis of a Bounded Rational Duopoly Game with Consumer Surplus", *International Journal of Bifurcation and Chaos* 31 (2021), 2150097.
67. A. Elsonbaty, Z. Sabir, R. Ramaswamy, W. Adel, "Dynamical analysis of a novel discrete fractional SITRS model for COVID-19", *Fractals*, 8(2021) 2140035.

68. A. Aldurayhim, A. Elsonbaty, A.A. Elsadany, "On dynamic behavior of a discrete fractional-order nonlinear prey-predator model", *Fractals*, 8(2021) 2140037.
69. F.M. Kamal, A. Elsonbaty, A. Elsaid, "A novel fractional nonautonomous chaotic circuit model and its application to image encryption", *Chaos, Solitons & Fractals* 144(2021), 110686.
70. S. Askar, A. Al-Khedhairi, A. Elsonbaty, A. Elsadany, "Chaotic Discrete Fractional-Order Food Chain Model and Hybrid Image Encryption Scheme Application", *Symmetry* 13(2)(2021), 161.
71. Q. Din, A.M. Yousef, A.A. Elsadany, "Stability and Bifurcation Analysis of a Discrete Singular Bioeconomic System", *Discrete Dynamics in Nature and Society* (2021) 2021.
72. D. Ghosh, P.K. Santra, A.A. Elsadany, G.S. Mahapatra, "Predator-dependent transmissible disease spreading in prey under Holling type-II functional response", *Zeitschrift für Naturforschung A* 76 (2021), 479-492.
73. Y. Zhu, W. Zhou, T. Chu, A.A. Elsadany, "Complex dynamical behavior and numerical simulation of a Cournot-Bertrand duopoly game with heterogeneous players", *Communications in Nonlinear Science and Numerical Simulation*, 8(2021), 105898.
74. H. Li, W. Zhou, A.A. Elsadany, T. Chu, "Stability, multi-stability and instability in Cournot duopoly game with knowledge spillover effects and relative profit maximization", *Chaos, Solitons & Fractals*, 146(2021), 110936.
75. S.M. Salman, A.M. Yousef, A.A. Elsadany, "Dynamic behavior and bifurcation analysis of a deterministic and stochastic coupled logistic map system", *International Journal of Dynamics and Control*, 8(2021), 1-17.
76. W. Li, A.A. Elsadany, W. Zhou, Y. Zhu, "Global analysis, multi-stability and synchronization in a competition model of public enterprises with consumer surplus", *Chaos, Solitons & Fractals*, 143(2021), 110604.
77. S.S. Askar, A.A. Elsadany, "Nonlinear Dynamics of Cournot Duopoly Game: When One Firm Considers Social Welfare", *Discrete Dynamics in Nature and Society*, 8(2021), 2021.
78. S.S. Askar, A. Ibrahim, A.A. Elsadany, "Dynamics of a Heterogeneous Constraint Profit Maximization Duopoly Model Based on an Isoelastic Demand", *Complexity*, 8(2021) 2021.
79. H.A. Nabwey, S.M.M. EL-Kabeir, A.M. Rashad, M.M.M. Abdou, "Gyrotactic microorganisms mixed convection flow of nanofluid over a vertically surfaced saturated porous media", *Alexandria Engineering Journal* 2021

80. M.F. Hoque, F.S. Alshammari, "Higher-order rogue wave solutions of the Kadomtsev Petviashvili—Benjamin Bona Mahony (KP-BBM) model via the Hirota-bilinear approach", *Physica Scripta*, 95(2020), 115215.
81. E. Bassiouny, "Hyperbolic two temperature fractional order one dimensional thermoelastic model heated by a pluse of laser", *Materials Physics & Mechanics* 44 (220).
82. H.A. Nabwey, S.M.M. El-Kabeir, A.M. Rashad, M.M.M. Abdou, "Viscous Dissipation and Joule Heating Effects on MHD Bioconvection Flow of a Nanofluid Containing Gyrotactic Microorganisms Over a Vertical Isothermal Cone", *Journal of Nanofluids* 9 (2020), 242-255.
83. H.A. Nabwey, W.A. Khan, A.M. Rashad, "Lie group analysis of unsteady flow of kerosene/cobalt ferrofluid past a radiated stretching surface with Navier slip and convective heating", *Mathematics* 8 (2020), 826.
84. A. Mahdy, A.J. Chamkha, H.A. Nabwey, "Entropy analysis and unsteady MHD mixed convection stagnation-point flow of Casson nanofluid around a rotating sphere", *Alexandria Engineering Journal* 59 (2020), 1693-1703.
85. H.A. Nabwey, "A Hybrid Methodology to Extract Decision Rules of Heat and Mass Transfer of the Flow of a Non-Newtonian Nanofluid Towards a Vertical Stretching Surface", *Journal of Nanofluids* 9 (2020), 121-127.
86. R. Ahmed, N. Ali, S.U. Khan, A.M. Rashad, H.A. Nabwey, I. Tlili, "Novel microstructural features on heat and mass transfer in peristaltic flow through a curved channel", *Frontiers in Physics* 8(2020), 178.
87. M.A. Mansour, S. Sivasankaran, A.M. Rashad, T. Salah, H.A. Nabwey, "Impact of Partial Slip and Heat Source on MHD Mixed Convection Flow of Nanofluid in a Double Lid-Driven Cavity Containing Insulated Obstacle", *Journal of Nanofluids* 9 (2020), 230-241.
88. A.J. Chamkha, A.M. Rashad, A.I. Alsabery, Z.M.A. Abdelrahman, H.A. Nabwey, "Impact of partial slip on magneto-ferrofluids mixed convection flow in enclosure", *Journal of Thermal Science and Engineering Applications* 12 (2020), 051002.
89. N. Imran, M. Javed, M. Sohail, P. Thounthong, H.A. Nabwey, I. Tlili, "Utilization of hall current and ions slip effects for the dynamic simulation of peristalsis in a compliant channel", *Alexandria Engineering Journal* 59 (2020), 3609-3622.
90. Z. Abdelmalek, B. Mahanthesh, M.F.M. Basir, M. Imtiaz, J. Mackolil, N.S. Khan, "Mixed radiated magneto Casson fluid flow with Arrhenius activation energy and Newtonian heating effects: Flow and sensitivity analysis", *Alexandria Engineering Journal* 59 (2020), 3991-4011.
91. A. Khan, M. Ashraf, A.M. Rashad, H.A. Nabwey, "Impact of heat generation on magneto-nanofluid free convection flow about sphere in the plume region", *Mathematics* 8 (2020), 2010.
92. I. Tlili, N. Sandeep, M.G. Reddy, H.A. Nabwey, "Effect of radiation on engine oil-TC4/NiCr mixture nanofluid flow over a revolving cone in mutable permeable medium", *Ain Shams Engineering Journal* 11 (2020), 1255-1263.

93. A. Mahdy, H.A. Nabwey, “Microorganisms time-mixed convection nanofluid flow by the stagnation domain of an impulsively rotating sphere due to Newtonian heating”, *Results in Physics* 19(2020) 103347.
94. B. Xin, F. Cao, W. Peng and A.A. Elsadany, “A Bertrand Duopoly game with long-memory effects”, *Complexity*, (2020), ID 2924169, 7 pages.
95. A.M. Yousef, A. Elsonbaty, E.A.A. Hagraas and A.A. Elsadany, “Chaos-Based Gary Image Encryption Using Two Coupled Competition Type Maps”, *Multimedia Security Using Chaotic Maps: Principles and Methodologies*, 884 (2020) 159-185.
96. J. Andaluz, A.A. Elsadany and G. Jarne, “Dynamic Cournot oligopoly game based on general isoelastic demand”, *Nonlinear Dynamics*, 99 (2020) 1053-1063.
97. Y. Lin, Q. Din, M. Razaqat, A.A. Elsadany and Y. Zeng, "Dynamics and Chaos Control for a Discrete-Time Lotka-Volterra Model", *IEEE Access*, 8 (2020) 126760-126775.
98. F.A. Alwawi, H.T. Alkawasbeh, A. Rashad and R. Idris, “A Numerical Approach for the Heat Transfer Flow of Carboxymethyl Cellulose-Water Based Casson Nanofluid from a Solid Sphere Generated by Mixed Convection under the Influence of Lorentz Force”, *Math.*, 87 (2020) 1094.
99. M.A. El-Shorbagy, A.A. Mousa and T. Abo-Kila, “Evolutionary algorithm for multi-objective multi-index transportation problem under fuzziness”, *J. of Applied Research on Industrial Engineering*, 7(2020) 36–56.
100. Y. Abo-Elnaga and M.A. El-Shorbagy, “Multi-Sine Cosine Algorithm for Solving Nonlinear Bilevel Programming Problems”, *Inter. J. of Computational Intelligence Systems*, 13(2020) 421–432.
101. N. Khan, H. A. Nabwey, M. S. Hashmi, S. U. Khan and I. Tlili, “A theoretical analysis for mixed convection flow of Maxwell fluid between two infinite isothermal stretching disks with heat source/sink”, *Symmetry*, 12 (2020) 62.
102. I. Tlili, H.A. Nabwey, S.P. Samrat and N. Sandeep, “3D MHD nonlinear radiative flow of CuO-MgO/methanol hybrid nanofluid beyond an irregular dimension surface with slip effect”, *Scientific Reports*, 10 (2020) 1-4.
103. M. Ferdows, K. Zaimi, A.M. Rashad and H.A. Nabwey “MHD Bioconvection Flow and Heat Transfer of Nanofluid through an Exponentially Stretchable Sheet”, *Symmetry*, 12 (2020) 692.
104. M. Ferdows, H.A. Nabwey, A.M. Rashad, M.J. Uddin and F. Alzahrani, “Boundary layer flow of a nanofluid past a horizontal flat plate in a Darcy porous medium: A Lie group approach. *Proceedings of the Institution of Mechanical Engineers*”, Part C: *J. of Mechanical Engineering Science*, 243(2020) 1545-53.
105. H.A. Nabwey “Feasibility of Rough Sets Theory in Predicting Heat Transfer Performance in Thermally Developed Flow of Third Grade Nanofluid with Gyrotactic Microorganisms”, *J. of Nanofluids*, 9 (2020) 66-74.

106. M.A. Farag, M.A. El-Shorbagy, A.A. Mousa and I.M. El-Desoky, "A New Hybrid Metaheuristic Algorithm for Multiobjective Optimization Problems", *International J. of Computational Intelligence Systems*, 13 (2020) 920-940.
107. M El-Morshedy, ZA Alhussain, D Atta, E.M. Almetwally and MS Eliwa, "Bivariate Burr X generator of distributions: properties and estimation methods with applications to complete and type-II censored samples", *Mathematics*, 8(2) (2020) 264.
108. M.S. Eliwa and M. El-Morshedy, "Bivariate odd Weibull-G family of distributions: Properties, Bayesian and non-Bayesian estimation with bootstrap confidence intervals and application", *J. of Taibah University for Science*, 14 (2020) 331-345.
109. M.S. Eliwa, M. El-Morshedy and S. Ali, "Exponentiated odd Chen-G family of distributions: statistical properties, Bayesian and non-Bayesian estimation with applications", *J. of Applied Statistics*, (2020) 1-27.
110. M.S. Eliwa, E. Altun, M. El-Dawoody and M. El-Morshedy, "A New Three-Parameter Discrete Distribution with Associated INAR (1) Process and Applications", *IEEE Access*, 8 (2020) 91150-91162.
111. M. El-Morshedy, MS. Eliwa and E Altun, "Discrete Burr-Hatke Distribution with Properties, Estimation Methods and Regression Model", *IEEE Access*, 8 (2020) 74359-74370.
112. M.S. Eliwa, Z.A. Alhussain and M. El-Morshedy, "Discrete Gompertz-G family of distributions for over-and under-dispersed data with properties, estimation, and applications", *Mathematics*, 8(3) (2020) 358-XX.
113. Y. Lin, Q. Din, M. Rafaqat, A.A. Elsadany and Y Zeng, "Dynamics and Chaos Control for a Discrete-Time Lotka-Volterra Model", *IEEE Access*, 8 (2020) 126760-126775.
114. A.A. Elsadany, Q. Din and S.M. Salman, "Qualitative properties and bifurcations of discrete-time Bazykin-Berezovskaya predator-prey model", *Inter. J. of Biomathematics*, 13(2020) 2050040.
115. N. Ahmed, A. Elsonbaty, W. Adel, D. Baleanu and M. Rafiq, "Stability analysis and numerical simulations of spatiotemporal HIV CD4+ T cell model with drug therapy", *Chaos*, 30 (2020) 083122.
116. E. R. El-Zahar, A.M. Rashad, L. Seddek, "Impacts of Viscous Dissipation and Brownian Motion on Jeffrey Nanofluid Flow over an Unsteady Stretching Surface with Thermophoresis", *Symmetry*, 12 (2020) 1450.
117. E.R. El-Zahar, "A Piecewise Approximate Analytical Solution For Nonlinear Transient Circuits Using Adaptive Step Size L-Stable Integration Scheme", *Advances in Differential Equations and Control Processes*, 23 (2020) 47-60.
118. Mo Faheem, Arshad Khan and E.R. El-Zahar, "On Some Wavelet Solutions of Singular Differential Equations Arising in the Modelling of Chemical and Biochemical Phenomena", *Advances in Difference Equations*, 2020(2020) 526.
119. H. Demiray and E. R. El-Zahar, "Analytical Approximate Solutions for Nonplanar Burgers Equations by Weighted Residual Method", *Results in Physics*, 18 (2020) 103293.

120. E.R. El-Zahar, A.M. Alotaibi, A. Ebaid, D. Baleanu, J.T. Machado and Y.S. Hamed, "Absolutely Stable Difference Scheme for a General Class of Singular Perturbation Problems", *Advances in Difference Equations*, 2020 (2020) 411.
121. E.R. El-Zahar, A.M. Algelany and A.M. Rashad, "Sinusoidal Natural Convective Flow of Non-Newtonian Nanoliquid Over a Radiative Vertical Plate in a Saturated Porous Medium", *IEEE Access*, 8 (2020) 136131-136140.
122. E.R. El-Zahar, A.A. Gaber, A.F. Aljohani, J. Tenreiro Machado and A. Ebaid, "Generalized Newtonian fractional model for the vertical motion of a particle", *Applied Mathematical Modelling*, 88 (2020) 652–660.
123. YS Hamed, Hammad Alotaibi and E. R. El-Zahar, "Nonlinear Vibrations Analysis and Dynamic Responses of a Vertical Conveyor System Controlled by a Proportional Derivative Controller", *IEEE Access*, 8 (2020) 119082-119093.
124. M. Imdad, B. Ali, W.M. Alfaqih, S. Sessa and A. Aldurayhim, "New Fixed Point Results via (θ, ψ) R-Weak Contractions with an Application", *Symmetry*, 12(6) (2020) 887.
125. E.R. El-Zahar, A.M. Rashad, W. Saad, "Magneto-Hybrid Nanofluids Flow via Mixed Convection past a Radiative Circular Cylinder", *Sci Rep.*, 10 (2020) 101-113.
126. E.R. El-Zahar, "Numerical solution of singularly perturbed BVPs using an optimal fitted one-step integration scheme via initial value method", *Inter. J. of Engineering Research and Technology*, 13(4) (2020) 827-831.
127. E.R. El-Zahar "Approximate analytical solution of singularly perturbed boundary value problems in MAPLE", *AIMS Mathematics*, 5 (2020) 2272-2284.
128. H. Demiray, E. R. El-Zahar and S. A. Sha, "On progressive wave solution for non-planar KdV equation in a plasma with q-nonextensive electrons and two oppositely charged ions", *TWMS Journal of Applied and Engineering Mathematics*, 10 (2020) 532-546.
129. A.M. Algelany and E. R. El-Zahar, "On Fourth Order Centered Difference Scheme for Linear SPBVPs", *Inter. J. of Engineering Research and Technology* 13 (2020) 364-367.
130. E. R. El-Zahar and A .M. Algelany, "On Three-Point Finite Difference Techniques for SPBVPs", *Inter. J. of Engineering Research and Technology*, 13(2) (2020) 229-232.
131. M. Shqair, M. Al-Smadi, S. Momani and E. El-Zahar, "Adaptation of Conformable Residual Power Series Scheme in Solving Nonlinear Fractional Quantum Mechanics Problems", *Applied Sciences*, 10 (2020) 890.
132. W. Alharbi1, A. Aljohani1, E. El-Zahar and A. Ebaid "Exact Solution of Non-Newtonian Blood Flow with Nanoparticles through Porous Arteries: A Comparative Study", *Computers, Materials & Continua*, 63 (2020) 1143-1157.
133. E.R. Attia, H.A. El-Morshedy and I.P. Stavroulakis, "Oscillation criteria for first order differential equations with non-monotone delays", *Symmetry*, 12 (2020) 718.
134. E. Bassiouny, "Hyperbolic two temperature fractional order one dimensional thermoelastic model heated", *Materials Physics and Mechanics*, 44 (2020) 66-76.
135. Z.D. Mitrović, R. George and H.A. Nabwey, "Some remarks on contraction mappings in rectangular b-metric space", *Boletim da Sociedade Paranaense de*, Article in Press (2020).

136. E.R. El-Zahar, A. Ebaid, A.F. Aljohani, J. Tenreiro Machado and D. Baleanu, "Re-Evaluating the Classical Falling Body Problem", *Mathematics*, 8 (2020) 553.
137. M. Atefa, A.M. Khalilb, S.G. Li, A.A. Azzam and A. El Atikf, "Comparison of six types of rough approximations based on j -neighborhood space and j -adhesion neighborhood space", *Journal of Intelligent & Fuzzy System*, 39(2020) 4515-4531.
138. A.M. Khalil, S.G. Li and A. Azzam, "Medical applications via minimal topological structure", *Journal of Intelligent & Fuzzy System*, 39 (2020) 4723-4730.
139. A.A. Nasef and A.A. Azzam, "Some topological notations via maki's Λ -sets", *Complexity*, 2020(2020) 1-8.
140. A.M. Khalil, D. Cao, A.A. Azzam, F. Smarandache and W. Alharbi, "Combination of the Single-Valued Neutrosophic Fuzzy Set and the Soft Set with Applications in Decision-Making", *Symmetry*, 12 (2020) 1361.
141. A. Al-Bossly, "Bayesian Statistics Application on Reliability Prediction and Analysis", *J. Stat. Appl. Pro.* 9(2020) 19-34.

List of Publications 2019-2020

- 1 W.A. Khan, A.M. Rashad, S.M.M. EL-Kabeir, A.M.A EL-Hakiem, "Framing the MHD Micropolar-Nanofluid Flow in Natural Convection Heat Transfer over a Radiative Truncated Cone", *Processes* 8 (2020) 379.
- 2 F.A. Alwawi, H.T. Alkawasbeh, A. Rashad, R. Idris, "MHD natural convection of Sodium Alginate Casson nanofluid over a solid sphere", *Res. Phys.*, 16 (2020) 102818.
- 3 F.A. Alwawi, H.T. Alkawasbeh, A. Rashad, R. Idris, "Heat transfer analysis of ethylene glycol-based Casson nanofluid around a horizontal circular cylinder with MHD effect", *P. I. Mech. Eng. C-j Mec.*, 234(2020) 2569-2580.
- 4 A. Aldurayhim, A. Elsonbaty, A.A. Elsadany, "Dynamics of diffusive modified Previtte-Hoffman food web model", *Mathematical Biosciences and Engineering* 17 (4)(2020) 4225.
- 5 A. Al-Khedhairi, A. Elsonbaty, A.A. Elsadany, E.A.A. Hagra, "Hybrid Cryptosystem Based on Pseudo Chaos of Novel Fractional Order Map and Elliptic Curves", *IEEE Access* 8(2020) 57733-57748.
- 6 A. Atangana, E. Bonyah, A.A. Elsadany, "A fractional order optimal 4D chaotic financial model with Mittag-Leffler law", *Chinese Journal of Physics* 65(2020) 38-53.
- 7 A. Al-khedhairi, S.S. Askar, A. Elsonbaty, A.A. Elsadany, "Zero-Hopf bifurcation in continuous dynamical systems using multiple scale approach", *Ain Shams Engineering Journal*, (2020) article in press.
- 8 B. Xin, F. Cao, W. Peng, A.A. Elsadany, "A Bertrand Duopoly game with long-memory effects", *Complexity* (2020), 0, Article ID 2924169, 7 pages.
- 9 A.M. Yousef, A. Elsonbaty, E.A.A. Hagra, A.A. Elsadany, "Chaos-Based Gary Image Encryption Using Two Coupled Competition Type Maps", *Multimedia Security Using Chaotic Maps: Principles and Methodologies*, (2020) 159-185.
- 10 J. Andaluz, A.A. Elsadany, G. Jarne, "Dynamic Cournot oligopoly game based on general isoelastic demand", *Nonlinear Dynamics* 99 (2020) 1053-1063.
- 11 Y. Lin, Q. Din, M. Rafaqat, A.A. Elsadany, Y. Zeng, "Dynamics and Chaos Control for a Discrete-Time Lotka-Volterra Model", *IEEE Access* 8(2020) 126760-126775.

- 12 F.A. Alwawi, H.T. Alkasasbeh, A. Rashad, R. Idris, "A Numerical Approach for the Heat Transfer Flow of Carboxymethyl Cellulose-Water Based Casson Nanofluid from a Solid Sphere Generated by Mixed Convection under the Influence of Lorentz Force", *Math.*, 87(2020) 1094.
- 13 M.A. El-Shorbagy, A.A. Mousa, T. Abo-Kila, "Evolutionary algorithm for multi-objective multi-index transportation problem under fuzziness", *Journal of Applied Research on Industrial Engineering* 7(2020) 36–56.
- 14 Y. Abo-Elnaga, M.A. El-Shorbagy, "Multi-Sine Cosine Algorithm for Solving Nonlinear Bilevel Programming Problems", *International Journal of Computational Intelligence Systems – Atlantis Press Publisher*, 13(2020) 421–432.
- 15 N Khan, HA Nabwey, MS Hashmi, SU Khan, I Tlili, "A theoretical analysis for mixed convection flow of Maxwell fluid between two infinite isothermal stretching disks with heat source/sink", *Symmetry* 12 (2020) 62.
- 16 R. Ahmed, N. Ali, S.U. Khan, A.M. Rashad, H.A. Nabwey, I. Tlili, "Novel Microstructural Features on Heat and Mass Transfer in Peristaltic Flow Through a Curved Channel", *Front. Phys.* 8(2020) 178.
- 17 I. Tlili, H.A. Nabwey, S.P. Samrat, N. Sandeep, "3D MHD nonlinear radiative flow of CuO-MgO/methanol hybrid nanofluid beyond an irregular dimension surface with slip effect", *Scientific Reports* 10(2020)1-4.
- 18 A. Mahdy, J.A. Chamkha, H.A Nabwey, "Entropy analysis and unsteady MHD mixed convection stagnation-point flow of Casson nanofluid around a rotating sphere", *Alexandria Engineering Journal* (2020) Article in press.
- 19 H.A. Nabwey, W.A. Khan, A.M. Rashad "Lie Group Analysis of Unsteady Flow of Kerosene/Cobalt Ferrofluid Past A Radiated Stretching Surface with Navier Slip and Convective Heating", *Mathematics.* 8(2020) 826.
- 20 M. Ferdows, K. Zaimi, A.M. Rashad, H.A. Nabwey "MHD Bioconvection Flow and Heat Transfer of Nanofluid through an Exponentially Stretchable Sheet", *Symmetry* 12(2020) 692.

- 21 M. Ferdows, H.A. Nabwey, A.M. Rashad, M.J. Uddin, F. Alzahrani, "Boundary layer flow of a nanofluid past a horizontal flat plate in a Darcy porous medium: A Lie group approach. Proceedings of the Institution of Mechanical Engineers", Part C: Journal of Mechanical Engineering Science 243(2020) 1545-53.
- 22 H.A. Nabwey "Feasibility of Rough Sets Theory in Predicting Heat Transfer Performance in Thermally Developed Flow of Third Grade Nanofluid with Gyrotactic Microorganisms", Journal of Nanofluids 9(2020) 66-74.
- 23 M.A. Farag, M.A. El-Shorbagy, A.A. Mousa, I.M. El-Desoky, "A New Hybrid Metaheuristic Algorithm for Multiobjective Optimization Problems", International Journal of Computational Intelligence Systems – Atlantis Press Publisher 13(2020) 920 - 940.
- 24 M El-Morshedy, ZA Alhussain, D Atta, E.M. Almetwally and MS Eliwa, "Bivariate Burr X generator of distributions: properties and estimation methods with applications to complete and type-II censored samples", Mathematics 8(2)(2020) 264.
- 25 M.S. Eliwa and M. El-Morshedy, Bivariate odd Weibull-G family of distributions: Properties, Bayesian and non-Bayesian estimation with bootstrap confidence intervals and application", Journal of Taibah University for Science (14)(2020) 331-345.
- 26 M.S. Eliwa, M. El-Morshedy, S. Ali, "Exponentiated odd Chen-G family of distributions: statistical properties, Bayesian and non-Bayesian estimation with applications", Journal of Applied Statistics (2020)1-27.
- 27 M.S. Eliwa, E. Altun, M. El-Dawoody, M. El-Morshedy, "A New Three-Parameter Discrete Distribution with Associated INAR (1) Process and Applications", IEEE Access, 8, (2020) 91150-91162.
- 28 M. El-Morshedy, MS. Eliwa, E Altun, "Discrete Burr-Hatke Distribution with Properties, Estimation Methods and Regression Model", IEEE Access, 8, (2020) 74359-74370.
- 29 M.S. Eliwa, Z.A. Alhussain, M. El-Morshedy, "Discrete Gompertz-G family of distributions for over-and under-dispersed data with properties, estimation, and applications", Mathematics, 8(3), (2020) 358.
- 30 Y. Lin, Q. Din, M. Razaqat, A.A Elsadany, Y Zeng, Dynamics and Chaos Control for a Discrete-Time Lotka-Volterra Model", IEEE Access 8, (2020) 126760-126775

- 31 A.A. Elsadany, Q. Din, S.M. Salman, “Qualitative properties and bifurcations of discrete-time Bazykin–Berezovskaya predator–prey model”, *International Journal of Biomathematics*, (2020) 2050040.
- 32 N. Ahmed, A. Elsonbaty, W. Adel, D. Baleanu, M. Rafiq, “Stability analysis and numerical simulations of spatiotemporal HIV CD4+ T cell model with drug therapy”, *Chaos* 30 (2020) 083122.
- 33 E.R. El-Zahar. Rashad, A.M. Seddek, “Impacts of Viscous Dissipation and Brownian Motion on Jeffrey Nanofluid Flow over an Unsteady Stretching Surface with Thermophoresis”, *Symmetry*12(2020) 1450.
- 34 E.R. El-Zahar, “A Piecewise Approximate Analytical Solution For Nonlinear Transient Circuits Using Adaptive Step Size L-Stable Integration Scheme”, *Advances in Differential Equations and Control Processes*, 23(2020) 47-60.
- 35 Mo Faheem, Arshad Khan and E.R. El-Zahar, “On Some Wavelet Solutions of Singular Differential Equations Arising in the Modelling of Chemical and Biochemical Phenomena”, *Advances in Difference Equations*, 2020.
- 36 H. Demiray and E. R. El-Zahar, “Analytical Approximate Solutions for Nonplanar Burgers Equations by Weighted Residual Method”, *Results in Physics* 18(2020) 103293.
- 37 E.R. El-Zahar, A.M. Alotaibi, A. Ebaid, D. Baleanu, J.T. Machado, Y.S. Hamed, “Absolutely Stable Difference Scheme for a General Class of Singular Perturbation Problems”, *Advances in Difference Equations*, 2020.
- 38 E.R. El-Zahar, A.M. Algelany, A.M. Rashad, “Sinusoidal Natural Convective Flow of Non-Newtonian Nanoliquid Over a Radiative Vertical Plate in a Saturated Porous Medium”, *IEEE Access* 8(2020) 136131-136140.
- 39 E.R. El-Zahar, A.A. Gaber, A.F. Aljohani, J. Tenreiro Machado, A. Ebaid, “Generalized Newtonian fractional model for the vertical motion of a particle”, *Applied Mathematical Modelling* 88 (2020) 652–660.
- 40 YS Hamed, Hammad Alotaibi and E. R. El-Zahar, “Nonlinear Vibrations Analysis and Dynamic Responses of a Vertical Conveyor System Controlled by a Proportional Derivative Controller”, *IEEE Access* 8(2020) 119082-119093.

- 41 M Imdad, B Ali, WM Alfaqih, S Sessa, A Aldurayhim , “New Fixed Point Results via (θ, ψ) R-Weak Contractions with an Application”, *Symmetry* 12(6)(2020) 887.
- 42 E.R. El-Zahar, Rashad, A.M., Saad, “Magneto-Hybrid Nanofluids Flow via Mixed Convection past a Radiative Circular Cylinder”, *Sci Rep.* 10(2020) 101-113.
- 43 E.R. El-Zahar, “Numerical solution of singularly perturbed BVPs using an optimal fitted one-step integration scheme via initial value method”, *International Journal of Engineering Research and Technology*, 13(4)(2020) 827-831.
- 44 E.R. El-Zahar “Approximate analytical solution of singularly perturbed boundary value problems in MAPLE”, *AIMS Mathematics* 5(2020) 2272-2284.
- 45 H. Demiray, E. R. El-Zahar and S, A. Sha, “On progressive wave solution for non-planar KdV equation in a plasma with q-nonextensive electrons and two oppositely charged ions”, *TWMS Journal of Applied and Engineering Mathematics* 10(2020) 532-546.
- 46 A.M. Algelany and E. R. El-Zahar, “On Fourth Order Centered Difference Scheme for Linear SPBVPs”, *International Journal of Engineering Research and Technology* 13(2020) 364-367.
- 47 E. R. El-Zahar and A .M. Algelany, “On Three-Point Finite Difference Techniques for SPBVPs”, *International Journal of Engineering Research and Technology* 13(2)(2020) 229-232.
- 48 M. Shqair, M. Al-Smadi , S. Momani, E. El-Zahar, “Adaptation of Conformable Residual Power Series Scheme in Solving Nonlinear Fractional Quantum Mechanics Problems”, [Applied Sciences](#). 10(2020) 890.
- 49 W. Alharbi¹, A. Aljohani¹, E. El-Zahar, A. Ebaid “Exact Solution of Non-Newtonian Blood Flow with Nanoparticles through Porous Arteries: A Comparative Study”, *Computers, Materials & Continua* 63(2020) 1143-1157.
- 50 E.R. Attia, H.A. El-Morshedy and I.P. Stavroulakis, “Oscillation criteria for first order differential equations with non-monotone delays”, *Symmetry* 12(2020), 718.
- 51 E. Bassiouny, “Hyperbolic two temperature fractional order one dimensional thermoelastic model heated”, *Materials Physics and Mechanics* 44 (2020) 66-76.
- 52 Z.D. Mitrović, R. George, H.A. Nabwey, “Some remarks on contraction mappings in rectangular b-metric space”, *Boletim da Sociedade Paranaense de*, Article in Press (2020).

- 53 R. George, H.A. Nabwey, R. Rajagopalan, S Radenovic, S Vinayakam, “Dislocated quasi cone b-metric space over Banach algebra and contraction principles with application to functional equations”, *Open Mathematics* 17(2019).
- 54 E. Bassiouny, “State-space approach to generalized thermoelastic half-space subjected to a ramp-type heating and harmonic mechanical loading”, *International Journal of Engineering Research and Technology (IJERT)* 12(2019) 2661-2675.
- 55 R. George, E. Tamrakar, J. Vujakovic, H.K. Pathak, S. Vinayakam, “ (C, Ψ^*, G) class of contractions and fixed Points in a metric space endowed with a graph”, *Mathematics (MDPI)* 7(5) (2019).
- 56 R. George, H.A. Nabwey, R. Rajagopalan, S. Radenovic, “Some generalized contraction classes and common fixed points in b-metric space endowed with a graph”, *Mathematics (MDPI)* 7(8)(2019) 754.
- 57 E.R. El-Zahar, R. Yassen, “Adaptive Step-size Nonlinear Explicit Integration Algorithm for ODEs”, *International Journal of Engineering Research and Technology* (2019) 3151-3155.
- 58 E.R. El-Zahar, “Cubic Spline Solution of Nonlinear Singularly Perturbed Boundary Value Problems via Initial Value Method”, *International Journal of Engineering Research and Technology* 2019 3145-3150.
- 59 E.R. El-Zahar, A. Ebaid, A.F. Aljohani, J. Tenreiro Machado, D. Baleanu, Re-Evaluating the Classical Falling Body Problem”, *Mathematics* 8(2020) 553.
- 60 M. Atefa, A.M. Khalilb, S.G. Li, A.A. Azzam and A. El Atikf, “Comparison of six types of rough approximations based on j-neighborhood space and j-adhesion neighborhood space”, *Journal of Intelligent & Fuzzy System* (2020) pages 17.
- 61 A.M. Khalil, S.G. Li, A. Azzam, “Medical applications via minimal topological structure”, *Journal of Intelligent & Fuzzy System*, (2020) pages 8.
- 62 A.A. Nasef, A.A. Azzam, “Some topological notations via maki’s Λ -sets”, *Complexity* 2020,1-8.
- 63 A.M. Khalil, D. Cao, A.A. Azzam, F. Smarandache, W. Alharbi, “Combination of the Single-Valued Neutrosophic Fuzzy Set and the Soft Set with Applications in Decision-Making”, *Symmetry* 12 (2020), 1361.

- 64 S.M.M. El-Kabeir, E.R. El-Zahar, M. Modather, R.S.R. Gorla, A.M. Rashad, "Unsteady MHD slip flow of a ferrofluid over an impulsively stretched vertical surface", *AIP Advances* 9(2019) 045112.
- 65 A.S. Hamarsheh, R. Rajagopalan, "On the Growth of the Factorial Function", *Applied Mathematical Sciences* 13 (2019) 483-489.
- 66 W.A. Khan, A.M. Rashad, M.M.M. Abdou, I. Tlili, Natural bioconvection flow of a nanofluid containing gyrotactic microorganisms about a truncated cone", *European Journal of Mechanics-B/Fluids*, 75(2019) 133-142.
- 67 A.J. Chamkha, H.A. Nabwey, Z.M.A. Abdelrahman, A.M. Rashad, "Mixed bioconvective flow over a wedge in porous media drenched with a nanofluid", *Journal of Nanofluids* 8 (2019), 1692-1703.
- 68 H.A. Nabwey, H.A. El-Mky, "Lie group analysis of thermophoresis on a vertical surface in a porous medium", *Journal of King Saud University-Science* 31 (2019) 1048-1055
- 69 ER El-Zahar, JT Machado and A Ebaid, "A New Generalized Taylor-Like Explicit Method for Stiff Ordinary Differential Equations", *Mathematics* 7(2019) 1154.
- 70 E.R. El-Zahar, A.R. Rashad, L.F. Seddek, "The impact of sinusoidal surface temperature on the natural convective flow of a ferrofluid along a vertical plate", *Mathematics* 7(2019) 1014.
- 71 E.A. Algehyne, E.R. El-Zahar, F.M. Alharbi, A Ebaid, "Development of analytical solution for a generalized Ambartsumian equation", *AIMS Mathematics*, 5(2019) 249-258.
- 72 S.M. Khaled, E.R. El-Zahar, A. Ebaid, "Solution of Ambartsumian Delay Differential Equation with Conformable Derivative", *Mathematics*, 7(2019) 425.
- 73 A. Ebaid, E.R. El-Zahar, A.F. Aljohani, B. Salah, M. Krid, J.T. Machado, "Exact solutions of the generalized nonlinear Fokas-Lennells equation", *Results in Physics* 14 (2019) 102472.
- 74 A. Ebaid, E.R. El-Zahar, A.F. Aljohani, B. Salah, M. Krid, J.T. Machado, "Analysis of the two-dimensional fractional projectile motion in view of the experimental data", *Nonlinear Dynamics* 97(2019) 1-10.
- 75 S.M.M. EL-Kabeir, E. El-Zahar, M. Modather, Rama S. R. Gorla, and A.M. Rashad., 2019, "Unsteady MHD Slip Flow of a Ferrofluid over an Impulsively Stretched Vertical Surface", *AIP Advances* 9 (2019) 045112.

- 76 E. R. El-Zahar and H. Demiray, 2019, “Analytical solutions of cylindrical and spherical dust ion-acoustic solitary waves”, *Results in Physics* 13(2019) 102154.
- 77 AJ Chamkha, AM Rashad, ER EL-Zahar, HA EL-Mky, “Analytical and Numerical Investigation of Fe₃O₄–Water Nanofluid Flow over a Moveable Plane in a Parallel Stream with High Suction”, *Energies* 12(2019) 1-18.
- 78 A. Al-khedhairi, A.A. Elsadany, A. Elsonbaty, A. Abdel Kader, “Dynamic Analysis and Circuit implementation of a New 4D Lorenz-Type Hyperchaotic System”, *Mathematical Problems in Engineering*, (2019), pages 17.
- 79 S.M.M. EL-Kabeir, E.R. EL-Zahar, M. Modather, R.S.R. Gorla, A.M. Rashd, “Unsteady MHD slip flow of a ferrofluid over an impulsively stretched vertical surface”, *AIP Advances* 9(2019) 045112.
- 80 H.A. Nabwey “An Intelligent Mining Model for Medical Diagnosis of Heart Disease Based on Rough Set Data Analysis”, *International Journal of Engineering Research and Technology* 13 (2019), 355-363.
- 81 A.J. Chamkha, H.A. Nabwey, Z.M.A. Abdelrahman, A.M. Rashad, “Mixed bioconvective flow over a wedge in porous media drenched with a nanofluid”, *Journal of Nanofluids* 8(2019) 1692-1703.
- 82 A.M. Rashad, H.A. Nabwey "Gyrotactic mixed bioconvection flow of a nanofluid past a circular cylinder with convective boundary condition", *Journal of the Taiwan Institute of Chemical Engineers* 99(2019) 9-17.
- 83 AA Elsadany, E Ahmed, AS Elgazzar, “Simple Mathematical Models of Antimicrobial resistance”, *Journal of Fractional Calculus and Applications*, 11, 22-25, (2019)
- 84 AA Elsadany, A Elsonbaty, A Khan, MA Khan, “Modeling and simulation results of a fractional dengue model”, *The European Physical Journal Plus*, (2019) 134.
- 85 AA Elsadany, A Elsonbaty, A Singh, “Complex dynamics of a discrete fractional-order Leslie-Gower predator-prey model”, *Mathematical methods in Applied Sciences*, 42(2019) 3992-4007.

- 86 A.A. Elsadany, A.M Awad, "Dynamics and Chaos control of a duopolistic Bertrand competitions under environmental taxes", *Annals of Operations Research*, 274(2019) 211-240.
- 87 A.A. Elsadany, A.M. Youself, SM Salman, "Stability and Bifurcation Analysis of a Delayed Discrete Predator – Prey Model", *International Journal of Bifurcation and Chaos*, 28 (2019)
- 88 M.A. El-Shorbagy, A.Y. Ayoub, A.A. Mousa, I.M. El-Desoky, "An Enhanced Genetic Algorithm with New Mutation for Cluster Analysis", *Computational Statistics - Springer*, (2019)
- 89 M. A. El-Shorbagy, A. A. Mousa, M. A. Farag, I. M. El-Desoky, "An intelligent computing technique based on a dynamic-size subpopulations for unit commitment problem", *OPSEARCH* 56(2019) 5644-911
- 90 M. A. Awad, A. Orabi, M. A. Rakha, A. K. Rathie, "On Several New Laplace Transforms of Generalized Hypergeometric Functions ${}_2F_2(x)$ ", *J. Bol. Soc. Paran. Mat.*, (2019) pages 13.
- 91 H.A. Nabwey, H.A. El-Mky "Lie group analysis of thermophoresis on a vertical surface in a porous medium", *Journal of King Saud University Science*. 4(2019) 1048-1055.
- 92 Rashad AM, Nabwey HA. Gyrotactic mixed bioconvection flow of a nanofluid past a circular cylinder with convective boundary condition. *Journal of the Taiwan Institute of Chemical Engineers*. 2019 Jun 1;99:9-17.
- 93 Nabwey HA. An approach based on Rough Sets Theory and Grey System for Implementation of Rule-Based Control for Sustainability of Rotary Clinker Kiln", *International Journal of Engineering Research and Technology*. 12(2019) 2604-2610.
- 94 A.E.N. Mahdy, F.M. Hady, H.A. Nabwey, Unsteady homogeneous-heterogeneous reactions in MHD nanofluid mixed convection flow past a stagnation point of an impulsively rotating sphere", *Thermal Science*, 1(2019) 388-388.

List of Publications 2018-2019

- 1 A Al-khedhairi, AA Elsadany, A Elsonbaty, A Abdel Kader, “Dynamic Analysis and Circuit implementation of a New 4D Lorenz-Type Hyperchaotic System”, *Mathematical Problems in Engineering*, (2019).
- 2 S. M. M. EL-Kabeir, E. R. EL-Zahar, M. Modather, R. S. R. Gorla and A. M. Rashd, “Unsteady MHD slip flow of a ferrofluid over an impulsively stretched vertical surface”, *AIP Advances* 9, 045112 (2019).
- 3 Amr Refat Torky Elsonbaty , Dynamic Analysis and Circuit Implementation of a New 4D Lorenz-Type Hyperchaotic System, *Mathematical Problems in Engineering*, 2019, Article ID 6581586, 17 pages (2019).
- 4 Amr Refat Torky Elsonbaty “Complex dynamics of a discrete fractional order Leslie Gower predator prey model”, *Mathematical Methods in the Applied Sciences*, Volume42, Issue11, 3992-4007, (2019)
- 5 Amr Refat Torky Elsonbaty, “Modeling and simulation results of a fractional dengue model”, *Eur. Phys. J. Plus*, 134: 379 (2019)
- 6 Rashad, A. M., and Hossam A. Nabwey. "Gyrotactic mixed bioconvection flow of a nanofluid past a circular cylinder with convective boundary condition." *Journal of the Taiwan Institute of Chemical Engineers* 99, 9-17 (2019)
- 7 AA Elsadany, E Ahmed, AS Elgazzar, “Simple Mathematical Models of Antimicrobial resistance”, *Journal of Fractional Calculus and Applications*, 11, 22-25, (2019)
- 8 AA Elsadany, A Elsonbaty, A Khan, MA Khan, “Modeling and simulation results of a fractional dengue model”, *The European Physical Journal Plus*, 134, (2019)
- 9 AA Elsadany, A Elsonbaty, A Singh, “Complex dynamics of a discrete fractional-order Leslie-Gower predator-prey model”, *Mathematical methods in Applied Sciences*, 42, 3992-4007, (2019),
- 10 AA Elsadany, AM Awad, “Dynamics and Chaos control of a duopolistic Bertrand competitions under environmental taxes”, *Annals of Operations Research*, 274, 211-240,(2019),

- 11 AA Elsadany, A Atangana, E Boyah, “A fractional model for predator-prey with omnivore”, *Chaos: An interdisciplinary Journal of Nonlinear science*, 29, (2019)
- 12 AA Elsadny, AM Youself, SM Salman, “Stability and Bifurcation Analysis of a Delayed Discrete Predator – Prey Model”, *International Journal of Bifurcation and Chaos*, 28 (2019)
- 13 M.A. El-Shorbagy, A.Y. Ayoub, A.A. Mousa, I.M. El-Desoky, “An Enhanced Genetic Algorithm with New Mutation for Cluster Analysis”, *Computational Statistics - Springer*, (2019)
- 14 M. A. El-Shorbagy, A. A. Mousa, M. A. Farag, I. M. El-Desoky, “An intelligent computing technique based on a dynamic-size subpopulations for unit commitment problem”, *OPSEARCH*, (2019)
- 15 Mohamed M. Awad, A. Orabi, M. A. Rakha and A. K. Rathie, “On Several New Laplace Transforms of Generalized Hypergeometric Functions ${}_2F_2(x)$ ”. *J. Bol. Soc. Paran. Mat. To A* (2019)
- 16 M. Modather and S. M. M. EL-Kabeir, “MHD Forced Convective Boundary-Layer Flow of a Micropolar-Nanofluid from a Stretching Sheet”, *Journal of Computational and Theoretical Nanoscience*, 15, 1275–1282 (2018).
- 17 Ali F. Al-Mudhaf , A.M. Rashad , Sameh E. Ahmed , Ali J. Chamkha , S.M.M. EL-Kabeir, Soret and Dufour, “Effects on Unsteady Double Diffusive Natural Convection in Porous Trapezoidal Enclosures”, *International Journal of Mechanical Sciences*, Volume 140, 172-178, (2018).
- 18 E. Bassiouny and Hamdy M. Youssef , “ Sandwich structure panel subjected to thermal loading using fractional order equation of motion and moving heat source”, *Canadian J. of Physics*, 96,174-182 (2018).
- 19 E. Bassiouny, Zeinab Abouelnaga, and A. A. Algelany, “Piezoelectric Materials Subjected to a Moving Heat Source under Fractional Order Equation of Motion Associated With Two Relaxation Times”, *International Journal of Engineering Research and Technology (IJERT)*., Volume 11, Number 11, pp. 1795–1810, (2018).

- 20 E. Bassiouny , Zeinab Abouelnaga and Hamdy M. Youssef Thermoelastic Model of Ceramic Materials with Fractional Order Strain and Variable Thermal Conductivity, International Journal of Engineering Research and Technology (IJERT), Volume 11, Number 12 1873-1889, (2018).
- 21 E. Chafai, M. Boumazgour, "On the essential spectrum of the diagonal of an operator", Linear and Multilinear Algebra (2018).
- 22 Chafai, T. Álvarez, "Finite Rank and Small Perturbations of Linear Relations", Mediterr. J. Math. 15:202 (2018),
- 23 E. Chafai, "On a Rational Function in a Linear Relation", Bull. Malays. Math. Sci. Soc., 1-22, (2018)
- 24 E. Chafai, M Boumazgour, "Some perturbation results for ascent and descent via measure of non-compactness", Filomat 32:10, 3495-3504 (2018).
- 25 Nabwey, Hossam A., and Hamed A. EL-Mky. "Lie group analysis of thermophoresis on a vertical surface in a porous medium." *Journal of King Saud University-Science* (2018).
- 26 Rajagopalan R, Reny George, Hossam A Nabway, Stojan Radenovic, " Some generalised contraction classes and common fixed points in b-metric space endowed with a graph", *Mathematics*, 7(8), 2018.
- 27 Rajagopalan R, George, Reny, Hossam A Nabway, Stojan Radenovic. "Dislocated cone metric space over Banach algebra and α -quasi contraction mappings of Perov type." *Fixed Point Theory and Applications* 1:24 (2018)
- 28 Rajagopalan R, Reny George, Hossam A Nabway, Stojan Radenovic, "On Reich contraction principle in rectangular cone b-metric space over Banach algebra", *J. Adv. Math. Stud.*, 11(1), 2018.
- 29 Reny George; R. Rajagopalan; Hossam Nabwey; Stojan Radenovic Dislocated Cone Metric Space over Banach Algebra and alfaQuasi Contraction Mappings of Perov Type Fixed Point Theory & Applications (2018).
- 30 Reny George, "Some remarks on contraction mappings in a rectangular b-metric space", *Boletín da Soc. Paran. De Mat.*, 22(2), (2018).
- 31 AA Elsadany, AMYousef, A Elsonbaty, "Further analytical bifurcation analysis and applications of coupled logistic maps", *Applied Mathematics and Computation*, 338, (2018), 314-336.

- 32 M.A. El-Shorbagy, M. Elhoseny, Aboul Ella Hassanien, Sayed Hassan Ahmed, “A Novel PSO Algorithm for Dynamic Wireless Sensor Network Multiobjective Optimization Problem”, Transactions on Emerging Telecommunications Technologies, (2018).
- 33 Mohamed M. Awad, M. A. Rakha, A. O. Mohammed and A. K. Rathie, “On a new class of finite integral involving generalized hypergeometric function ${}_3F_2$ ”, J. Interpolat. Approx. Sci. Comput. , Article ID jiasc-00125, 8 Pages, (2018).