



CURRICULUM VITAE

PERSONAL DATA

Name	Ramy Mahmoud Mohamed hafez
Nationality	Egyptian
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EDUCATION

Year	Academic Degree	Institution
2014	PH.D.	Faculty of Science, Beni-Suef University, Egypt
2011	M.SC.	Faculty of Science, Beni-Suef University, Egypt
2005	B.Sc.	Faculty of Science, Beni-Suef University, Egypt

WORK EXPERIENCE

Period	Position	Address
10-2025 until Now	Associate Professor	Imam Mohammad Ibn Saud Islamic University
2022-2025	Associate Professor	Matrouh University, Egypt
2019-2022	Assistant Professor	Matrouh University, Egypt
2014-2019	Assistant Professor	Modern Academy For Computer Science and Management Technology in Maadi, Egypt
2011-2014	Lecturer	Modern Academy For Computer Science and Management Technology in Maadi, Egypt
2007-2011	Demonstrator	Modern Academy For Computer Science and Management Technology in Maadi, Egypt

RESEARCH INTERESTS

Numerical analysis and scientific computing; Spectral methods and their applications in linear and nonlinear



ordinary differential equations, system of ordinary differential equations, nonlinear partial differential equations. System of nonlinear partial differential equations

Developing spectral methods for solving ordinary/partial functional Differential equations, system of functional Differential equations, nonlinear ordinary/partial fractional differential equations and functional Differential equations

Constructing new orthogonal polynomials based on classical orthogonal polynomials like Legendre, Chebyshev, Ultraspherical and Jacobi polynomial.

PUBLICATIONS

1. H. M. Ahmed, **R. M. Hafez**, [A spectral collocation approach based on shifted Viet Lucas polynomials for microscale heat transfer modeling in thin metal films](#), International Journal of Modern Physics C, 38 (2027) 2750006.
2. Khuram Ali Khan, **Ramy M Hafez**, Kashif Ali, Ndolane Sene, [Graphical and Analytic Study of New Inequalities Involving Strongly n-Polynomial Exponential-Type s-Convex Functions](#), Journal of Mathematics, 2026 (2026) 4577511.
3. Noura Alharthi, **Ramy M Hafez**, Fatemah Mofarrah, Adnan Khan, [Fractional dynamics of nonlinear fifth-order Korteweg-de Vries equations under Caputo derivative](#), Frontiers in Physics, 14 (2026) 1793691.
4. Md Mamunur Roshid, **Ramy M Hafez**, Mohammad Safi Ullah, Yakup Yildirim, [Exploring the Variable Base Soliton Solutions and Stability Analysis for a Nonlinear Model With Dual-Power Nonlinearity](#), Journal of Mathematics, 2026 (2026) 7970577.
5. Adnan Malik, M Waqas Aslam, Wenbin Lin, Muhammad Kashif Shafiq, Fatema Mofarreh, **Ramy M Hafez**, [Impact of charge on traversable wormhole solutions and modified \$f\(R, \phi\)\$ gravity](#), Nuclear Physics B, (2026) 2650179.
6. Hazzaa F Alqurashi, **Ramy M Hafez**, Nabil Talbi, Mohamed Kezzar, Farhan Lafta Rashid, Mushtaq K Abdalrahman, Mohamed Rafik Sari, Ilyas Khan, Ibrahim Mahariq, [Elaboration and characterization of composite material based on epoxy resin and Cynara scolymus fibers: Weibull statistics analysis](#), Journal of Materials Research and Technology, 333 (2026) 119722.
7. **RM Hafez**, A Naeem, Z Abbas, MY Rafiq, [Optimization and nonlinear thermal sensitivity analysis of Jeffrey fluid flow between permeable disks with modified Darcy law: Implications for energy and cooling systems](#), Case Studies in Thermal Engineering, (2026) 107975.
8. Yasir Nawaz, **Ramy M Hafez**, Muavia Mansoor, [Hybrid Numerical–Machine Learning Framework for Time-Fractal Carreau–Yasuda Flow: Stability, Convergence, and Sensitivity Analysis](#), Fractal and Fractional, 10 (2026) 221.
9. Muhammad Imran Liaqat, **Ramy M Hafez**, [Averaging Principle for Itô–Doob Fractional Stochastic Systems in \$m\$ th Moment](#), Axioms, 15 (2026) 262.
10. Hany Mostafa Ahmed, **Ramy M Hafez**, Mohammad Izadi, Yogeshwari F Patel, [Efficient solutions for multidimensional time-fractional telegraph equations via spectral methods with generalized Jacobi Galerkin operational matrices](#), Ricerche di Matematica, (2026) 1-21.
11. Muhammad Imran Liaqat, **Ramy M Hafez**, [Qualitative Analysis and Numerical Simulations of \$\gamma\$ -Hilfer Fractional Stochastic Dynamical Systems](#), Axioms, 15 (2026) 305.
12. Mair Khan, T Salahuddin, Muhammad Awais, **Ramy M Hafez**, Jomana A Bashatah, Gafur Abdulakimov, [Effects on high Reynolds number Blasius boundary layer flow over a heated flat plate](#), Materials Today Communications, (2026) 115270.
13. **Ramy M Hafez**, Hany Mostafa Ahmed, Alhanouf Alburaikan, Moodi Abdulrhman Abdullah Alrajeh, Hamiden Abd El-Wahed Khalifa, [A novel shifted Vieta–Lucas spectral collocation approach for multidimensional generalized Benjamin–Bona–Mahony–Burgers equations](#), Scientific Reports, 16 (2026) 14671.
14. **Ramy M Hafez**, Sumati Kumari Panda, Hijaz Ahmad, Waleed Mohammed Abdelfattah, [Contraction-Theoretic Approaches to Robust Synchronization and Control of Chaotic Systems](#), IEEE Access, 14 (2026) 3691503.



15. Ghulam Abbas, Saima Riaz, Tamador Alihia, Khuram Ali Khan, Saba Yasmin, **Ramy M Hafez**, [Computational Analysis of Newton-Type Inequalities for Differentiable Strongly Convex Functions via RL-Integrals](#), Fractal and Fractional, 10 (2026) 341.
16. Muhammad Yousuf Rafiq, **Ramy M Hafez**, Aqsa Fayyaz, Zaheer Abbas, [Non-isothermal unsteady pressure-driven flow of Jeffery fluid over a flat surface bounded by two side walls under an inclined magnetic field](#), Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, (2026) 09544089261454396.
17. Muhammad Awais, T Salahuddin, **Ramy M Hafez**, Zuhair Jastanayah, Hakim AL Garalleh, Maawiya Ould Sidi, [Mixed convection Carreau-Yasuda nanofluid flow with heat transfer analysis by Cattaneo-Christov heat and mass transfer models](#), Computers in Biology and Medicine, 209 (2026) 111705.
18. T Salahuddin, Madiha Nazir, Muhammad Awais, Mair Khan, Maawiya Ould Sidi, **Ramy M Hafez**, Ali Ercetin, [Mixed Convection Blood Flow Analysis in Stenotic Arteries: A Heat and Mass Transfer Study by Using the Crank–Nicolson Study](#), ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik, 106 (2026) 70478.
19. MY Rafiq, **Ramy Mahmoud Hafez**, Z Abbas, Kamal Barghout, Nidal Abu-Libdeh, [Slip-driven thermal transport in axisymmetric pipe flow of Sisko fluid with internal heat generation](#), Journal of the Korean Physical Society, (2026) 1-13.
20. Ifrah Iqbal, Hamood Ur Rehman, **Ramy M Hafez**, Saad Althobaiti, Ali Althobaiti, Yakup Yildirim, [Fractional Modeling and Numerical Investigation of Nonlinear Wave Dynamics in Viscoelastic Media with Applications to Polymers, Gels, and Biological Tissues](#), Journal of Computational and Applied Mathematics, (2026) 117909.
21. HM Ahmed, **RM Hafez**, [A unified spectral strategy for 1D and 2D nonlinear hyperbolic telegraph equations using shifted Vieta–Lucas operational matrices](#), International Journal of Modern Physics C, (2026) 2750113.
22. Boukabcha Brahim, Kaushik Dehingia, Purnendu Sardar, **Ramy M Hafez**, [On the stability analysis of a fractional-order predator–prey model with adaptive refuge and harvesting](#), The European Physical Journal Plus, 141 (2026) 753.
23. Aamna Amer, Emad K Jaradat, Hamood Ur Rehman, SM Abo-Dahab, **Ramy M Hafez**, Yakup Yildirim, [Deciphering nonlinear wave phenomena in Einstein’s vacuum field equation using analytical and numerical approaches](#), Chaos, Solitons & Fractals, 208 (2026) 118371.
24. Md Mamunur Roshid, **Ramy M Hafez**, Yakup Yildirim, MS Osman, [Bifurcation analysis, and solution of homoclinic and heteroclinic orbit solution for the paraxial wave model through bifurcation theory](#), Chaos, Solitons & Fractals, 208 (2026) 118366.
25. Muhammad Awais, Iqra Kousar, T Salahuddin, **Ramy M Hafez**, Hakim AL Garalleh, Afnan Al Agha, [Numerical investigation of bioconvective cross nanofluid flow over a stretching cylinder using Buongiorno’s model](#), Computers in Biology and Medicine, 210 (2026) 111692.
26. Mair Khan, T Salahuddin, Muhammad Awais, **Ramy M Hafez**, Ali Ercetin, Gafur Abdulakimov, [Analysis of double stratification on heat and mass diffusion in Maxwell fluid along with temperature-dependent viscosity and activation energy](#), Computers in Biology and Medicine, 210 (2026) 111727.
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32. Muhsin Hayat, **Ramy M Hafez**, Muhammad Asif, M Saif Aldien, [Chaos-driven stability and decay of dark solitons in gain-assisted nonlinear systems](#), *Chaos, Solitons & Fractals*, 209 (2026) 118469.
33. Md Mamunur Roshid, Younis A Sabawi, **Ramy M Hafez**, Hijaz Ahmad, Yakup Yildirim, Hadi Rezazadeh, [Computational study on fractional nonlinear model in long-wave and short-wave: Modulation instability, chaotic nature with defect tool, and novel optical soliton solutions](#), *Chaos, Solitons & Fractals*, 209 (2026) 118427.
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36. Maroua Moudjari, **Ramy M Hafez**, Omar Ahmed Alhelali, Nabil Talbi, Mohamed Kezzar, Farhan Lafta Rashid, Mohamed Rafik Sari, Aya M Al-Zuheiri, Yazan M Alawaideh, Ioan-Lucian Popa, Ibrahim Mahariq, [Artificial intelligence and statistical analysis-driven prediction and optimization of tensile properties in biomass/resin epoxy composites](#), *Journal of Materials Research and Technology*, 44 (2026) 2615-2636.
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46. CM Mohana, **Ramy M Hafez**, Issam Touil, Farhan Lafta Rashid, Mohamed Kezzar, Rushi Kumar Bangalore, Samia Nasr, Mohamed Rafik Sari, Ibrahim Mahariq, [Thermal performance and flow characteristics of methanol based Fe₃O₄-CoFe₂O₄-Co₃O₄ nanofluid systems: numerical and ANN approaches](#), *Arab Journal of Basic and Applied Sciences*, 33 (2026) 445-465.
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- equations via Bernoulli collocation technique, Journal of Nonlinear Mathematical Physics, 32 (2025) 86.
49. **R M Hafez**, HM Ahmed, High-accuracy solution of pantograph differential equations subject to mixed boundary conditions via shifted Vieta–Lucas polynomials, Boundary Value Problems 2025 (2025) 114.
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51. N. Firouzi, **R. M. Hafez**, K. N. Salloomi, M. A. Abdelkawy, R. R. Hussain, Graph-FEM/ML framework for inverse load identification in thick-walled hyperelastic pressure vessels, Symmetry , 17 (2025) 2021.
52. **R. M. Hafez**, M. A. Abdelkawy, H. M. Ahmed, A Refined Spectral Galerkin Approach Leveraging Romanovski–Jacobi Polynomials for Differential Equations, Mathematics, 13 (2025) 1461.
53. R. I Mohamed, **R. M. Hafez**, A. F. Hashem, M. Abdel-Aty, Fractional Dynamics of Information Entropy in Quantum Wire System Under Rashba Interaction, Fractal and Fractional, 9 (2025) 741.
54. **R.M. Hafez**, M.A. Abdelkawy, A. Biswas, H.M. Ahmed, A Galerkin algorithm leveraging Bernoulli polynomials for accurate solutions of time-fractional diffusion-wave equations, Journal of Computational Science, 90 (2025) 102607.
55. **R. Hafez**, S. Boulaaras, H.Abd El-Wahed Khalifa, Matrix Algorithms Based on Jacobi and Romanovski-Jacobi Polynomials for Solving the FitzHugh-Nagumo Nonlinear Equation, Rev. int. métodos numér. cálc. diseño ing, 41 (2025).
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57. **R. Hafez**, M. Haiour, S. Tantawy, A. Alburaikan, H. Khalifa, A Comprehensive Study on Solving Multitype Differential Equations Using Romanovski-Jacobi Matrix Methods, Fractals, (2025).
58. **R. M. Hafez**, H. M. Ahmed, O. M. Alqubori, A. K. Amin, W. M. Abd-Elhameed, Efficient Spectral Galerkin and Collocation Approaches Using Telephone Polynomials for Solving Some Models of Differential Equations with Convergence Analysis, Mathematics, 13 (2025) 918.
59. A. G. Atta, Y. H. Youssri, **R.M. Hafez**, An innovative pseudo-spectral Galerkin algorithm for the time-fractional Tricomi-type equation, Physica Scripta, 99 (2024) 105238.
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69. **R. M. Hafez**, M. Hammad, E. H. Doha, Fractional Jacobi Galerkin spectral schemes for multi-dimensional time fractional advection–diffusion–reaction equations, Engineering with Computers, 38 (2022) 2769-2769.



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77. H. Magda, **R. M. Hafez**, Y. H. Youssri, E. H. Doha, **Exponential Jacobi-Galerkin method and its applications to multidimensional problems in unbounded domains**, Applied Numerical Mathematics, **157** (2020) 88-109.
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87. **R.M. Hafez**, Y.H. Youssri, **Jacobi collocation scheme for variable-order fractional reaction-subdiffusion equation**, Computational and Applied Mathematics, **37** (2018) 5315-5333 .
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