Macherla Jayachandra Babu

Assistant Professor of Mathematics

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Professional Summary

- 12 years experience in teaching Mathematics as an Assistant Professor.
- Performed research to serve as basis for academic writing for publication.
- Mentored students and communicated internship and employment opportunities.
- Evaluated student progress through analysis of test scores and homework completion.
- Built strong rapport with students through class discussions and academic advisement.

Skills

- Lesson Planning
- Classroom administration
- Student counselling
- Academic Research

Work History

- At present, working as an Assistant Professor of Mathematics in Government Degree College, Rajampeta, Annamayya (Dt) since August 11th,2023.
- Worked as an Assistant Professor of Mathematics in S.V.A Govt. Degree College, Srikalahasti, Tirupati (Dt) from May 27th, 2017 to August 10th, 2023.

- Worked as an Assistant Professor of Mathematics in Govt. Degree College, Puttur, Tirupati (Dt) from December 26th, 2011 to May 27th, 2017.

Educational History

- Ph.D from VIT University, Vellore (2019).
- M.Tech. (Computer Science and Technology) from University of Mysore, Mysore (2007-2009).
- M.Sc. Mathematics from Andhra University, Visakhapatnam, (2000-2002).

Academic Achievements

- Qualified in UGC-CSIR NET (2010).
- Qualified in GATE-2006, All India Rank 260 (Mathematics).

Responsibilities

- Acting as IQAC Co-ordinator in Government Degree College, Rajampeta .

Details of Seminars/Courses

- Participated in 2 international seminars.
- Paper presented/participated in 14 national seminars.
- Completed 3 Refresher courses and 1 Orientation course
- Completed 2 NPTEL courses and 1 ARPIT course

Research Publications (59) (till 09th July, 2024)

- Entropy generation minimization in the Carreau nanofluid flow over a convectively heated inclined plate with quadratic thermal radiation and chemical reaction: A Stefan blowing application. Propulsion and Power Research, 13(2), 233-244, 2024.
- Impact of Exponential Heat Source and Thermal Radiation on the flow of Hybrid Nanofluid across a Bi-Directional Stretching Surface with Activation Energy. In Journal of Physics: Conference Series, 2765 (1), 012003, 2024.
- Influence of thermal radiation and shape factor on a hybrid nanofluid flow over a permeable flat plate with cross-diffusion effects: An irreversibility analysis, Numerical Heat Transfer, Part A: Applications, 1–26. 2024.
- Dynamics of different heat sources and activation energy on the hybrid nanofluid (EG + MgO + MWCNT) flow in a microchannel

with thermal radiation: An irreversibility analysis, Numerical Heat Transfer, Part A: Applications, 1–23, 2024.

- Darcy–Forchheimer flow of power-law (Ostwald-de Waele type) nanofluid over an inclined plate with thermal radiation and activation energy: an irreversibility analysis, International Journal of Ambient Energy, 44(1), 1980–1989, 2023.
- Influence of shape factor on a chemically reactive hybrid nanofluid flow via a moving plate when Soret and Dufour effects are significant: An irreversibility analysis with Cattaneo-Christov heat flux model, Numerical Heat Transfer, Part A: Applications. 2023.
- Entropy generation optimization in a radiative hybrid nanofluid (engine oil + NiZnFe2O4+ MnZnFe2O4) flow through a convectively heated microchannel with cross-diffusion effects, Journal of Thermal Analysis and Calorimetry, 148(20), 2023,10907-10916.
- Dynamics of Lorentz force and cross-diffusion effects on ethylene glycol based hybrid nanofluid flow amidst two parallel plates with variable electrical conductivity: A multiple linear regression analysis, Case Studies in Thermal Engineering, 41,2023,102603.
- Entropy generation optimization in an unsteady hybrid nanofluid flow between two rotating disks: a numerical bioconvection model, Waves in Random and Complex Media, 2022,
- A Significant Role of Activation Energy and Fourier Flux on the Quadratically Radiated Sphere in Low and High Conductivity of Hybrid Nanoparticles. Symmetry, 2022, 14, 2335.
- Irreversibility Analysis in the Ethylene Glycol Based Hybrid Nanofluid Flow amongst Expanding/Contracting Walls When Quadratic Thermal Radiation and Arrhenius Activation Energy Are Significant. Mathematics, 2022, 10,2984.
- Significance of non-Fourier flux on a chemically reactive ternary hybrid nanofluid flow (water + Al2O3 + ZnO +Fe3O4) by a quadratically radiated tended elongating surface, Z Angew Math Mech., e202200103,(2022). ttps://doi.org/10.1002/zamm.202200103
- Entropy Generation and Statistical Analysis of MHD Hybrid Nanofluid Unsteady Squeezing Flow between Two Parallel Rotating Plates with Activation Energy, Nanomaterials, 12(14), 2381 (2022).

- Dynamics over an inclined surface when entropy generation, Ohmic Heating, and Lorentz force are significant: Comparative analysis between water-copper nanofluid and water-copper-Iron (II, III) oxide hybrid nanofluid, Waves in Random and Complex Media, 1-23 (2022).
- Squeezed flow of polyethylene glycol and water based hybrid nanofluid over a magnetized sensor surface: A statistical approach, International Communications in Heat and Mass Transfer 135, 106136 (2022).
- Simulation of Dissipative Hybrid Nanofluid (PEG-Water + ZrO2 + MgO) Flow by a Curved Shrinking Sheet with Thermal Radiation and Higher Order Chemical Reaction, Mathematics 10 (10), 1706 (2022).
- Significance of Lorentz Force and Viscous Dissipation on the Dynamics of Propylene Glycol: Water Subject to Joule Heating Conveying Paraffin Wax and Sand Nanoparticles Over an Object with a Variable Thickness, AArabian Journal for Science and Engineering, 1-14 (2022).
- Irreversibility Analysis in the Ethylene Glycol Based Hybrid Nanofluid Flow amongst Expanding/Contracting Walls When Quadratic Thermal Radiation and Arrhenius Activation Energy Are Significant, Mathematics 10 (16), 2984 (2022).
- Significance of adding titanium dioxide nanoparticles to an existing distilled water conveying aluminum oxide and zinc oxide nanoparticles: Scrutinization of chemical reactive ternary-hybrid nanofluid due to bioconvection on a convectively heated surface, Nonlinear Engineering 11 (1), 241-251 (2022)

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