

Name of Faculty Dr. B CHANDRA SHEKAR  
 Designation Assistant Professor  
 Nature of Job/Appointment Contract  
 Date of Joining 04 – 02 - 2021  
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Education Qualifications	Name of the Degree	Class
Ph. D	Computational Fluid Dynamics	
PG	M. Sc. (Mathematics)	First /Distinction
UG	B. Sc.	First /Distinction

Work Experience

Teaching	18 Years
Research	4.5 Years
Industry	--
Others	NA

Area of Specialization Computational Fluid Dynamics, Numerical methods, Finite Element Method, Bioconvection, Heat transfer in porous media

Professional Memberships ISTAM, APTSMS

Responsibilities held at Institution Level

Responsibilities held at Department Level

Research Guidance Guiding 1 Scholar

Awards Received Awarded JRF and SRF

Courses Handled at Under Graduate / Post Graduate Level. Mathematics- I, II, III; Probability & Statistics, Discrete Mathematics, Operations Research, Mathematical Programming, Multivariate Calculus, Mathematics for Computing, Mathematics for Engineering

No. of Papers Published National Journals – 0 International Journals – 25  
 National Conference – 3 International Conference – 5

Projects Carried out --

Patents Published a patent on “**CFD based model for thermal monitoring and control of data centres**” in 2020.

Technology Transfer

Invited Speaker

- I was an invited speaker on **Mathematics with MATLAB** in the Faculty Development Programme conducted by Department of Mathematics, Vignana Bharathi Institute of Technology Hyderabad, on 2 – 6, Jul 2018.
- I was a resource person for Five days National Webinar on Mathematical and Statistical Tools at Applied Level organized by Department Mathematics, YIMS, Palakkad, Kerala on 21 July to 25 July 2020.

- I was a resource person for Webinar on Applications of Calculus organized by Telangana Social Welfare Residential Degree College for Women, LB Nagar, Telangana on 03 May 2021.

No. of Books/Chapter Published with details

Details of Short-Term Training Programs/Faculty Development Programs/Seminars/Workshops. Other Trainings (**Attended and/or Organized**).

1. Participated AICTE - Sponsored n One-week Online STTP on "Role of Statistics in Machine Learning and Data Science", Jointly organized by AICTE, New Delhi and Human Resource Development Centre, Jawaharlal Nehru Technological University Hyderabad, Kukatpally, Hyderabad, T.S., India from 29 Nov - 04 Dec 2021.
2. Participated one week FDP on Software Tools for Mathematical Education organised by Department of Mathematics, Bannari Amman Institute of Technology, Sathyamangalam and Providence College for Women, Coonoor, Tamil Nadu, India from 30th Aug to 05 Sep 2021.
3. Participated One week FDP on Recent Trends in Applications of Mathematics, organised by Department of Freshman Engineering, CREC(A), Tirupati from 12-17 Jul 2021.
4. Participated One-week online FDP on Latex, Auxilium College of Arts & Science for Women, Regunathapuram, from 7 - 12 Jul 2021.
5. Coordinator for a Faculty Development Programme on Applications and Mathematical Methods for Engineering Studies conducted by Department of Mathematics, Vignana Bharathi Institute of Technology Hyderabad, on 2 – 6, Jul 2018.

Details of Journal Publications/Conferences (**National and International**)

1. R Alluguvelli, CS Balla, K Naikoti, OD Makinde, Nanofluid Bioconvection in Porous Enclosure with Viscous Dissipation, Indian Journal of Pure & Applied Physics, Volume 60(1), 78 – 89, 2022 (SCOPUS, SCI, WoS)
2. CS Balla, Jamuna B, SK Kumari and AM Rashad, Effect of inclination angle on bioconvection in porous square cavity containing gyrotactic microorganisms and nanofluid, Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2021 (SCOPUS, SCI, WoS) <https://doi.org/10.1177/09544062211055619>.
3. K Ali, Y Rajashekar Reddy, and CS Balla, Numerical solution of transient Fe<sub>3</sub>O<sub>4</sub>-EG nanofluid flow past the Couette channel associated with radiation. International Journal of Ambient Energy, (SCOPUS, WoS), 2021 <https://doi.org/10.1080/01430750.2021.1970623>
4. CS Balla, A Ramesh, N Kishan, AM Rashad, Impact of Soret and Dufour on bioconvective flow of nanofluid in porous square cavity. Heat Transfer. Volume 50(5), 5123 – 5147, 2021, (SCOPUS, WoS), <https://doi.org/10.1002/htj.22118>
5. B Jamuna, CS Balla, Bioconvection in a porous square cavity containing gyrotactic microorganisms under the effects of heat generation/absorption. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering. Volume 235(5), 1534-1544, 2021, (SCI, WoS, SCOPUS) <https://doi.org/10.1177/09544089211007326>.
6. R Alluguvelli, CS Balla, L Bandari, K Naikoti, Investigation on natural convective flow of ethylene glycol nanofluid containing nanoparticles Fe<sub>3</sub>O<sub>4</sub> in a porous cavity with radiation, AIP Conference Proceedings 2269 (1), 060004, 2020 (SCOPUS )
7. CS Balla, A Ramesh, N Kishan, AM Rashad, ZMA Abdelrahman, Bioconvection in

- oxytactic microorganism-saturated porous square enclosure with thermal radiation impact *Journal of Thermal Analysis and Calorimetry*, 140, 2387–2395 (2020). (SCI, 1588-2926)
8. CS Balla, R Alluguvelli, K Naikoti, OD Makinde, Effect of chemical reaction on bioconvective flow in oxytactic microorganisms suspended porous cavity. *Journal of Applied and Computational Mechanics* 6 (3), 653-664 2020 (SCOPUS, 2383-4536).
  9. Chandra Shekar Balla and Kishan Naikoti, Numerical Solution of MHD Bioconvection in a Porous Square Cavity due to Oxytactic Microorganisms, *Applications and Applied Mathematics*, pp. 69-81 Special Issue 4 March 2019. (SCOPUS).
  10. CS Balla, C Haritha, N Kishan, AM Rashad, Magnetohydrodynamic Nanofluid Flow and Heat Transfer in a Porous Cavity Containing Heated Surface, *Journal of Nanofluids*, 8 (3), 577-588, (2019) (SCOPUS).
  11. Chandra Shekar Balla, C Haritha, Kishan Naikoti, AM Rashad, Bioconvection in nanofluid-saturated porous square cavity containing oxytactic microorganisms, *International Journal of Numerical Methods for Heat & Fluid Flow*, 2019, Vol. 29(4), 1448-1465. (SCI, DOI <https://doi.org/10.1108/HFF-05-2018-0238>)
  12. Chandra Shekar Balla, C. Haritha, Kishan Naikoti, MHD Natural Convection Heat Transfer in a Porous Square Cavity Filled by Nanofluids with Viscous Dissipation, *Journal of Nanofluids*, American Scientific Publishers, 7, 928–938 (2018). (SCOPUS, ISSN 2169-432X)
  13. Chandra Shekar Balla, C. Haritha, Kishan Naikoti, MHD double-diffusive convection in fluid saturated inclined porous cavity with thermal radiation and chemical reaction, *Journal of Chemical Technology and Metallurgy*, Vol. 53, No. 3, pp. 518-536 (2018). (SCOPUS, ISSN: 1314-7471)
  14. Chandra Shekar Balla, C. Haritha, Kishan Naikoti, MHD convection in a porous square cavity filled by a nanofluid with viscous dissipation effects. *Proceedings of the Institution of Mechanical Engineers, Part E: J Process Mechanical Engineering*, SAGE Publications, In press, (2018). <https://doi.org/10.1177/0954408918765314> (SCI, ISSN: 0954-4089)
  15. C Srinivas Reddy, N Kishan, B Chandra Shekar, MHD boundary layer flow and heat transfer of a nanofluid over a shrinking sheet with mass suction and chemical reaction, *Journal of Nanofluids*, American Scientific Publishers, Vol. 4, pp. 518-527 (2015). <https://doi.org/10.1166/jon.2015.1182> (SCOPUS , ISSN 2169-432X)
  16. Chandra Shekar Balla, Kishan Naikoti, Finite element analysis of natural convective heat transfer in a porous square cavity filled with nanofluids in the presence of thermal radiation, *Journal of Physics: Conference Series* 662 (2015) 012017. IOP Publishing. <https://doi.org/10.1088/1742-6596/662/1/012017> (SCOPUS, ISSN 1742-6588)
  17. Chandra Shekar Balla, Kishan Naikoti, MHD free convective heat transfer in a porous square cavity filled with nanofluids in the presence of thermal radiation. *Journal of Energy, Heat and Mass Transfer*, 36(4), 311-330 (2014). (SCOPUS, ISSN 0970-9991, UGC Approved list no. 20334)
  18. Chandra Shekar Balla, Kishan Naikoti, Finite element analysis of fully developed unsteady MHD convection flow in a vertical rectangular duct with viscous dissipation and heat source/sink. *Journal of Applied Science and Engineering*, Tamkang University, Vol. 18, No. 2, pp. 143-152 (2015). DOI : 10.6180/jase.2015.18.2.06 (SCOPUS, ISSN 1560-6686)
  19. Chandra Shekar Balla, Kishan Naikoti, Radiation effects on unsteady MHD convective heat and mass transfer past a vertical plate with chemical reaction and viscous dissipation. *Alexandria Engineering Journal*, Elsevier, Vol. 54, pp. 661-671 (2015). <https://doi.org/10.1016/j.aej.2015.04.013> (SCOPUS, ISSN 1110-0168)
  20. Chandra Shekar Balla, Kishan Naikoti, Soret and Dufour effects on free convective heat and solute transfer in fluid saturated inclined porous cavity. *Engineering Science and Technology*, an International Journal, Elsevier, Vol. 18, pp. 543-554 (2015). <https://doi.org/10.1016/j.jestch.2015.04.001> (SCOPUS, ISSN 2215-0986)
  21. Chandra Shekar Balla, Kishan Naikoti, Gorla RSR, Gireesha BJ, MHD boundary layer

- flow and heat transfer in an inclined porous square cavity filled with nanofluids, *Ain Shams Engineering Journal*, Elsevier, Vol. 8(2), pp. 237–254 (2017) <http://dx.doi.org/10.1016/j.asej.2016.02.010> (SCOPUS, ISSN 2090-4479)
22. Chandra Shekar Balla, Kishan Naikoti, Finite element analysis of magnetohydrodynamic transient free convection flow of nanofluid over a vertical cone with thermal radiation. *Proceedings of the Institution of Mechanical Engineers, Part N: Journal of Nanomaterials, Nanoengineering and Nanosystems*. SAGE Publications, Vol 230(3), pp. 161-173 (2016). <https://doi.org/10.1177/1740349914552879> (SCOPUS, ISSN 1740-3499)
  23. Balla Chandra Shekar, Alluguvelli Ramesh, Naikoti Kishan, Effects of Variable Viscosity and Thermal Conductivity on MHD Boundary Layer Flow of Nanofluid with Thermal Radiation. *Journal of Nanofluids*. American Scientific Publishers. Vol. 6(1), pp. 59-70 (2017). <https://doi.org/10.1166/jon.2017.1288> (SCOPUS, ISSN 2169-432X)
  24. Chandra Shekar Balla, Kishan Naikoti, Ali J Chamkha, Soret and Dufour effects on MHD natural convective heat and solute transfer in fluid saturated porous cavity, *Journal of Porous Media*, Begel House Inc., Vol. 19(8), pp. 669-686 (2016). DOI: 10.1615/JPorMedia.v19.i8.20 (SCI, ISSN 1091-028X)
  25. Chandra Shekar Balla, Kishan Naikoti, C. Haritha, Convection in Nanofluid-Filled Porous Cavity with Heat Absorption/Generation and Radiation. *Journal of Thermophysics and Heat Transfer*. American Institute of Aeronautics and Astronautics, Vol. 31(3), pp. 549-562 (2016), <https://doi.org/10.2514/1.T5010> (SCI, ISSN 0887-8722)