

Curriculum Vitae

01. Name: TAPAS RAY MAHAPATRA.
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08. Highest Qualification: Ph.D.
09. Broad Subject Area: Fluid Mechanics.
10. Area of Interest: Computational Fluid Dynamics, Heat and Mass Transfer
in Incompressible Viscous Fluid Flow, Flow Separation,
Stagnation-point Flow, Stability of Fluid Flow.
11. Number of research scholars produced: 5
12. Number of research scholars currently working: 6

13. List of Research Publications:

1. **T.R. Mahapatra** and A.S. Gupta, “Magnetohydrodynamic Stagnation-point flow towards a stretching sheet”, Acta Mechanica, Vol. 152 (2001) pp.191-196.
2. **T.R. Mahapatra**, G.C. Layek and M.K. Maiti, “Unsteady laminar separated flow through constricted channel”, Int. J. Non-linear Mechanics, Vol. 37 (2002) pp.171-186.
3. **T.R. Mahapatra** and A.S. Gupta, “Heat transfer in stagnation-point flow towards a stretching sheet”, Heat and Mass Transfer, Vol. 38 (2002) pp. 517-521.
4. **T.R. Mahapatra** and A.S. Gupta, “Stagnation-point flow towards a stretching surface”, Canadian J. Chemical Engineering, Vol. 81 (2003) pp. 258-263.
5. T.K. Maikap, **T.R. Mahapatra**, G.C. Layek, P. Niyogi and A.K. Ghosh, “Unsteady laminar separated flow through channel with double constriction”, Computational Fluid Dyn. J. Japan, Vol. 12 (2003) pp. 53-64.
6. C. Midya, G.C. Layek, A.S. Gupta and **T.R. Mahapatra**, “Magnetohydrodynamic viscous flow separation in a channel with constrictions”, J. Fluids Engg. (Trans. ASME), Vol. 125 (2003) pp. 952-962.

7. T.K. Maikap, **T.R. Mahapatra**, G.C. Layek, P. Niyogi and A.K. Ghosh, “Unsteady laminar separated flow through channel with asymmetric double constriction”, *Computational Fluid Dyn. J. Japan*, Vol. 12 (2003) pp. 614-621.
8. **T.R. Mahapatra** and A.S. Gupta, “Stagnation-point flow of a viscoelastic fluid towards a stretching surface”, *Int. J. Non-linear Mechanics*, Vol. 39 (2004) pp.811-820.
9. S. Pramanik, G.C. Layek, **T.R. Mahapatra** and H.P. Mazumdar, “Numerical study of viscous flow through a locally expanded-channel”, *J. Applied Mech. Engg.*, Vol. 9 (2004) pp. 557-571.
10. T.K. Maikap, **T.R. Mahapatra**, P. Niyogi and A.K. Ghosh, “Numerical investigation of laminar separated flow through a channel with symmetric double expansion”, *Acta Mechanica*, Vol. 179 (2005) pp. 197-210.
11. **T. Ray Mahapatra**, S. Dholey and A.S. Gupta, “Heat transfer in oblique stagnation-point flow of an incompressible viscous fluid towards a stretching surface”, *Heat and Mass Transfer*, Vol. 43 (2007) pp. 767-773.
12. **T. Ray Mahapatra**, S. Dholey and A.S. Gupta, “Momentum and Heat Transfer in the Magnetohydrodynamic Stagnation-point Flow of a Viscoelastic Fluid towards a Stretching Surface”, *Meccanica*, Vol. 42 (2007) pp.263-272.
13. **T. Ray Mahapatra**, S. Dholey and A.S. Gupta, “Oblique Stagnation-point Flow of an Incompressible Visco-elastic Fluid towards a Stretching Surface”, *Int. J. Non-Linear Mech.* , vol.42 (2007) pp. 484-499.
14. **T. Ray Mahapatra**, S.K. Nandy and A.S. Gupta 'Magnetohydrodynamic Stagnation-point Flow of a Power-law Fluid towards a Stretching Surface', *Int. J. Non-Linear Mechanics* , vol. 44 (2009) pp. 124-129.
15. T. K. Maikap, **T. R. Mahapatra**, P. Niyogi and A. K. Ghosh, “Numerical study of magnetohydrodynamic laminar flow separation in a channel with smooth expansion” *International Journal for Numerical Methods in Fluids*, vol. 59, (2009) 495- 518.
16. **T. Ray Mahapatra**, S.K. Nandy and A.S. Gupta, “Analytical Solution of Magnetohydrodynamic Stagnation-point Flow of a Power-law Fluid towards a Stretching Surface”, *Applied Mathematics and Computation* 215 (2009) 1696-1710.
17. **T. Ray Mahapatra**, S. Dholey and A. S. Gupta, “Stability of Hydromagnetic Dean Flow Between Two Arbitrarily Spaced Concentric Circular Cylinders in the Presence of a Uniform Axial Magnetic Field”, *Physics Letters A* 373 (2009) 4338-4345.

18. **T. Ray Mahapatra**, S.K. Nandy and A.S. Gupta, "Dual Solution of MHD Stagnation-point Flow towards a Stretching Surface", *ENGINEERING* 2 (2010) 299-305.
19. **T. Ray Mahapatra**, S.K. Nandy and A.S. Gupta, "Momentum and heat transfer in MHD stagnation-point flow over a shrinking sheet", *Journal of Applied Mechanics, Transaction of ASME*, 78 (2011) 021015-1 ----- 021015-8.
20. **T. Ray Mahapatra**, S. K. Nandy, K. Vajravelu and Robert A. Van Gorder, "Stability analysis of fluid flow over a nonlinearly stretching sheet" *Archive of Applied Mechanics* 81 (2011) 1087-1091.
21. **T. Ray Mahapatra** and S.K. Nandy, "Stability analysis of dual solutions in stagnation-point flow and heat transfer over a power-law shrinking surface", *International Journal of Nonlinear Science*, 12(2011), No. 1, 86-94.
22. **T. Ray Mahapatra** and S.K. Nandy, "Unsteady stagnation-point flow and heat transfer over an unsteady shrinking surface", *International Journal of Applied Mathematics and Mechanics*, 7 (2011) 11-26.
23. **T. Ray Mahapatra**, S.K. Nandy and A.S. Gupta, "Oblique Stagnation-point flow and heat transfer towards a shrinking sheet with thermal radiation", *Meccanica*, (2011). doi: 10.1007/s11012-011-9516-z. In Press
24. **T.R. Mahapatra** and S.K. Nandy, 'Momentum and Heat transfer in MHD axisymmetric stagnation-point flow over a shrinking sheet', Accepted for publication in *Journal of Applied Fluid Mechanics*, (2011). In Press.
25. **Tapas Ray Mahapatra**, Dulal Pal and Sabyasachi Mondal, "Natural Convection in a Lid-driven Square Cavity Filled with Darcy-Forchheimer Porous Medium in the Presence of Thermal Radiation", *International Journal of Nonlinear Science*, 11(2011) 366-379.
26. **T. Ray Mahapatra**, S.K. Nandy and A.S. Gupta, "Heat Transfer in the Magnetohydrodynamic flow of a Power-law Fluid past a Porous Flat Plate with Suction or Blowing", *International Communications in Heat and Mass Transfer*, 39 (2012) 17-23.
27. **T. Ray Mahapatra**, S. K. Nandy, K. Vajravelu and Robert A. Van Gorder, "Stability analysis of the dual solutions for stagnation-point flow over a non-linearly stretching surface" *Meccanica* 47(2012) pp.1623-1632.
28. **Tapas Ray Mahapatra**, Dulal Pal and Sabyasachi Mondal, "Influence of thermal radiation on non-Darcian natural convection in a square cavity filled with fluid

saturated porous medium of uniform porosity”, *Nonlinear Analysis: Modelling and Control*, vol. 17, No. 2 (2012), 223–237.

29. **Tapas Ray Mahapatra**, Sabyasachi Mondal and Dulal Pal, “Heat Generation Effects in an Inclined Enclosure under the Influence of Magnetic Field”, *ARNP Journal of Science and Technology*, Vol. 2 No. 6 (2012), 556-561.
30. **T. Ray Mahapatra** and S.K. Nandy, ”Stability of dual solutions in stagnation-point flow and heat transfer over a porous shrinking sheet with thermal radiation”, *Meccanica*, DOI 10.1007/s11012-012-9579-5.
31. **T. Ray Mahapatra**, S. K. Nandy, K. Vajravelu and Robert A. Van Gorder, “Dual solutions for the MHD stagnation-point flow of a power-law fluid over a shrinking sheet”, *Transactions of ASME, Journal of Applied Mechanics*, vol. 79 (2012).
32. Sabyasachi Mondal, **Tapas Ray Mahapatra** , Dulal Pal, “Natural convection in a two-sided lid-driven inclined porous enclosure with sinusoidal thermal boundary condition”, *International Journal of Mechanical Engineering and Technology*, Vol. 3, No. 3 (2012) pp. 187-202.
33. **Tapas Ray Mahapatra**, Dulal Pal, Sabyasachi Mondal, “Combined effects of thermal radiation and heat generation on natural convection in a square cavity filled with Darcy-Forchheimer porous medium”, *International Journal of Applied Mathematics and Computation*, Vol. 4, No. 4 (2012) pp. 359-368.
34. **Tapas Ray Mahapatra**, Sabyasachi Mondal, Dulal Pal, “Heat transfer due to magnetohydrodynamic stagnation-point flow of a power-law fluid towards a stretching surface in presence of thermal radiation and suction/injection”, *ISRN Thermodynamics*, Article ID 465864, (2012) pp. 1-9 doi:10.5402/2012/465864
35. **Tapas Ray Mahapatra**, Dulal Pal, Sabyasachi Mondal, “Effects of buoyancy ratio on double-diffusive natural convection in a lid-driven cavity”, *International Journal of Heat and Mass Transfer*, Vol. 57 (2013) pp. 771–785.
36. **Tapas Ray Mahapatra**, Dulal Pal, Sabyasachi Mondal, “Mixed convection flow in an inclined enclosure under magnetic field with thermal radiation and heat generation”, *International Communication in Heat and Mass Transfer*, Vol. 41 (2013) pp.47–56.
37. **T.R. Mahapatra** and S.K. Nandy, ‘Slip effects on unsteady stagnation-point flow and heat transfer over a shrinking sheet’, *Meccanica*, doi: 10.1007/s11012-012-9688-1, 2013.
38. **T.R. Mahapatra**, S.K. Nandy and A.S. Gupta, ‘Effect of radial temperature gradient on the stability of Taylor Dean flow between two concentric rotating

cylinders', International Journal of Heat and Mass Transfer, Vol. 57(2013) pp.662–670.

39. **T. R. Mahapatra**, D. Pal and S. Mondal, “Mixed convection in a lid-driven square cavity filled with porous medium in the presence of thermal radiation and non-uniform heating”, International Journal of Applied Mathematics and Mechanics, Vol. 9(13) (2013) pp. 23-51.
40. Samir Kumar Nandy, **Tapas Ray Mahapatra**, “Effects of slip and heat generation/absorption on MHD stagnation flow of nanofluid past a stretching/shrinking surface with convective boundary conditions”, International Journal of Heat and Mass Transfer, Vol. 64(2013) pp. 1091-1100.
41. **T. R. Mahapatra**, S. K. Nandy and I. Pop, “Dual Solutions in Magnetohydrodynamic Stagnation-point flow and heat transfer over a shrinking surface with partial slip”, Trans. ASME J. Heat Transfer, Vol. 136 (2014): 104501-104501-6. doi:10.1115/1.4024592.
42. **Tapas Ray Mahapatra** , Sumanta Sidui, Samir Kumar Nandy, “Effect of Magnetic field on indirect Natural Convection Flow above a Horizontal Hot Plate”, Frontiers in Heat and Mass Transfer, Vol. 5 (2014) 013015.
43. Samir Kumar Nandy, Sumanta Sidui, **Tapas Ray Mahapatra**, “Unsteady MHD boundary-layer flow and heat transfer of nano-fluid over a permeable shrinking sheet in the presence of thermal radiation”, Alexandria Engineering Journal, Vol. 53 (2014) pp. 929-937.
44. Samir Kumar Nandy, **Tapas Ray Mahapatra**, Ioan Pop, “Unsteady separated stagnation-point flow over a moving porous plate in the presence of a variable magnetic field”, European Journal of Mechanics B/Fluids Vol. 53 (2015) 229–240. Date of Pub: 01/09/2015
45. **T. R. Mahapatra**, S. Sidui, “An analytical solution of MHD flow of two visco-elastic fluids over a sheet shrinking with quadratic velocity”, Alexandria Engineering Journal, Vol. 55 (2016). pp.163-168. Date of Pub: 01/03/2016
46. **T. R. Mahapatra** and S. Sidui, “Unsteady heat transfer in non-axisymmetric Homann stagnation-point flows”, Z. Angew. Math. Phys. (2017) 68: 32. <https://doi.org/10.1007/s00033-017-0775-y>. Date of Pub: 01/04/2017
47. **T. R. Mahapatra** and S. Sidui, “Heat transfer in non-axisymmetric Homann stagnation-point flows towards a stretching sheet ”, European Journal of Mechanics B/Fluids, Vol. 65 (2017) 522-529. Date of Pub: 01/09/2017

48. Bikash C. Saha, **T. R. Mahapatra**, and Dulal Pal, “Analysis of Heatline and Massline in Magnetohydrodynamic Double Diffusive Natural Convection of Nanofluid within a Trapezoidal Enclosure”, *J. Nanofluids*, Vol. 7 (6) (2018), 1149-1163. Date of Pub: 01/12/2018
49. **T.R. Mahapatra**, Bikash C Saha and Dulal Pal, “Magnetohydrodynamic double-diffusive natural convection for nanofluid within a trapezoidal enclosure”, *Computational and Applied Mathematics*, Vol. 37 (5) (2018) 6132-6151. Date of Pub: 01/11/2018
50. **T. R. Mahapatra** and S. Sidui, “Unsteady heat transfer in non-axisymmetric Homann stagnation-point flows towards a stretching/shrinking sheet”, *European Journal of Mechanics B/Fluids*, Vol. 75 (2019) 199-208. Date of Pub: 01/05/2019
51. Bikash C. Saha, **T. R. Mahapatra**, and Dulal Pal, “Heat and Mass Flow in Lid-Driven Magnetohydrodynamic Double Diffusive Mixed Convection of Nanofluid Within a Trapezoidal Enclosure” *J. Nanofluids* 8 (4) (2019) 817–829. Date of Pub: 01/04/2019
52. Bikash C. Saha, **T. R. Mahapatra**, and Dulal Pal, “Simulation of Heatlines and Masslines Visualization of MHD Double-Diffusive Natural Convection in Al_2O_3 -Nanofluid Saturated with Porous Medium” , *J. Nanofluids*, Vol. 8 (5) (2019), 1020-1033. Date of Pub: 01/05/2019
53. **T. R. Mahapatra** and Rujda [Parveen](#), “Entropy Generation in MHD Natural Convection within Curved Enclosure Filled with Cu-Water Nanofluid” , *J. Nanofluids*, Vol. 8 (5) (2019), 1051-1065. Date of Pub: 01/05/2019
54. **T. R. Mahapatra**, P. Mondal, [“Heatline and Massline Analysis Due to Magnetohydrodynamic Double Diffusive Natural Convection in a Trapezoidal Enclosure with Various Aspect Ratios”](#), *International Journal of Applied and Computational Mathematics*, Vol. 5 (3) (2019). Date of Pub: 01/06/2019
55. Rujda Parveen and **T. R. Mahapatra**, “Numerical simulation of MHD double diffusive natural convection and entropy generation in a wavy enclosure filled with nanofluid with discrete heating”, *Heliyon* 5 (2019) e02496. Date of Pub: 01/09/2019
56. **T. R. Mahapatra** and S. Sidui, “ Non-axisymmetric Homann stagnation-point flow of a viscoelastic fluid towards a fixed plate”, *European Journal of Mechanics B/Fluids*, Vol. 79 (2020) 38-43. Date of Pub: 01/01/2020
57. Priyajit Mondal and Tapas Ray Mahapatra, “Minimization of entropy generation due to MHD double diffusive mixed convection in a lid driven trapezoidal cavity with various aspect ratios”, *Nonlinear Analysis: Modelling and Control*, Vol. 25 (2020) 545-563. Date of Pub: 01/07/2020

58. Priyajit Mondal, T. R. Mahapatra and Rujda Parveen, "Entropy generation in nanofluid flow due to double diffusive MHD mixed convection", *Heliyon* 7 (2021) e06143. Date of Pub: 12/03/2021