

Biodata

(as on June 20, 2026)

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3. Date of Birth : 07-02-1965
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6. Subject of Specialization : Applied Mathematics, General Relativity

7. (a) Number of Papers Published : 48

1. J. Krishna Rao, A.H. Hasmani, General Dynamical Equations for Dingle's Space-Times, Math. Today, **11** (1993) 71.
2. A. H. Hasmani, G. Rathva, Algebraic computations in general relativity using Mathematica, Prajana-Jour. of Pure and Appl. Sci. **15** (2007) 111.
3. A. H. Hasmani, M. Joshi, Newman-Penrose Formalism and Electric and Magnetic Parts of Weyl Tensor, Jour. Dyn. Syst. Geom. Theor. **6** (2008) 89.
4. A.H. Hasmani, General Dynamical Equations for Dingle's Space-Times Filled with a Charged Non-perfect Fluid, Internat. Jour. Theoret. Phys. **48** (2009) 3510.
5. A.H. Hasmani, Algebraic computation of Newmann-Penrose scalars in general relativity using Mathematica, Jour. Sci. **1** (2010) 82.
6. A.H.Hasmani, P. Andharia, Algebraic Computation of Spin Coefficients in Newman-Penrose Formalism using Mathematica, Jour. Dyn. Syst. Geom. Theor. **9** (2011) 27.
7. A.Al-Salihi, A.H. Hasmaniand, M. Timol, A new family of similarity solutions of three dimensional MHD boundary layer flows of non-Newtonian fluids using new systematic group-theoretic approach, Appl. Math. Sci. **5** (2011) 1325.
8. A.H.Hasmani, V. Khambholja, Algebraic Computation of Riemann Curvature Tensor for a 5D Space-Time using Mathematica, Natl. Conf. Recent Trends Eng. Technol. (2011) 1.

9. A.H. Hasmani, V. Khambholja, Interior black-hole solution with anisotropic fluid, Jour. Dyn. Syst. Geom. Theor. **10** (2012) 47.
10. A.H. Hasmani, V. Khambholja, A metric for 5D interior black-hole solution, Jour. Dyn. Syst. Geom. Theor. **10** (2012) 125.
11. A.H. Hasmani, A. Al-Salihi, M. Timol, The new systematic procedure in group theoretic methods with applications to class of boundary layer flows, Int. Jour. Adv. Appl. Math. Mech. **1** (2013) 47.
12. A.H. Hasmani, M. Timol, K.A. Adnan, Similarity Methods in the Analysis for Laminar Forced Convection on a Horizontal Plate, WSEAS Trans. Heat Mass Transf. **1** (2013) 7.
13. A. H. Hasmani, M. Patel, R. Patel, M. Timol, GROUP INVARIANCE FOR NON-LINEAR PARTIAL DIFFERENTIAL EQUATIONS, Int. Jour. Appl. Math. Mech. **9** (2013) 83.
14. A.H. Hasmani, V. Khambholja, Geodesics in Interior Black Hole Region, Math. Today, **31** (2015) 21.
15. A. H. Hasmani, R. R. Panchal, Algebraic computations of general observer quantities using Mathematica, Astrophys. Space Sci. **359** (2015) 1.
16. A. H. Hasmani, R. R. Panchal, Algebraic Computations of Complex Tetrad Components of Ricci Tensor, In Proc. Recent Trends. Mat. Statist. **1** (2015) 97.
17. A. H. Hasmani, B. N. Patel, R. R. Panchal, On Algebraic Computations of Electric and Magnetic parts of the Weyl Tensor, Int. Jour. Math. Sci. Comput. **6** (2016) 1.
18. A. H. Hasmani, R. R. Panchal, Lanczos Potential for Some Non-Vacuum Spacetimes, Eur. Phys. Jour. Plus. **9** (2016) 131.
19. A. H. Hasmani, A. C. Patel, R. R. Panchal, Interaction of Electromagnetism and Gravity for pp-waves Spacetimes, Math. Today, **32** (2016) 47.
20. A. H. Hasmani, B. N. Patel, An Axially Symmetric Spacetime Filled with an Anisotropic Fluid, Adv. Stud. Theor. Phys. **10** (2016) 4.
21. A. H. Hasmani, B. N. Patel, Electromagnetic Fields in Vaidya Spacetimes, Clifford Anal. Algebr. Appl. **5** (2016) 171.
22. A. H. Hasmani, R. R. Panchal, Electric and Magnetic parts of the Weyl Tensor and Spin Coefficients, Jour. Dyn. Syst. Geom. Theor. **15** (2017) 37.
23. A. H. Hasmani, A. C. Patel, R. R. Panchal, Lanczos Potential for Weyl Metric, Prajana-Jour. of Pure and Appl. Sci. **24** (2017) 11.
24. A. H. Hasmani, D. Pandya, Spherically Symmetric Cosmological Model with Charged Anisotropic Fluid in Rosen's Bimetric Theory of Gravitation, Math. Today, **33** (2017) 35.
25. A. H. Hasmani, D. Pandya, Spherically Symmetric Static Charged Anisotropic Fluid in Rosen's Bimetric Theory of Gravitation, Jour. Dyn. Syst. Geom. Theor. ,**17** (2019) **13**.
26. A. H. Hasmani, A. M. Al-Haysa, Exact solution for Szekeres inhomogeneous cosmological models in STT of gravity, PRAJÑA-Journal of Pure and Applied Sciences (PRAJÑA-J. Pure & Appl. Sci.) **1** (2018) 112.

27. A. H. Hasmani, A. M. Al-Haysa, Some Exact Bianchi Type Cosmological in Scalar Tensor Theory of Gravity, Asia Pac. Jour. Mat. **6** (2019) 1.
28. A. H. Hasmani, A. M. Al-Haysa, Exact Solutions for Bianchi Type-I Cosmological Min $f(R)$ Theory of Gravity, Apl. Math.Int. Jour. (AAM) **1** (2019) 334.
29. A. H. Hasmani, A. M. Al-Haysa, Some Exact Bianchi Types Cosmological Models in $f(R, T)$ Theory of Gravity, Jour. of Math. Sci. and Mod. (JMSM), Accepted (2019).
30. A. H. Hasmani, A. M. Al-Haysa, Exact Solution with Dust and Shell-Crossings for LTB Inhomogeneous Cosmological Models, TWMS J. of Apl. & Eng. Math, Accepted (2019).
31. Ravi Panchal, A.C. Patel and A.H. Hasmani, On Lanczos potential for Spherically Symmetric Spacetimes, Journal of Tensor Society, ISSN - 074-5428, (2019).
32. D.N. Pandya and A.H. Hasmani, Spherically Symmetric Charged Anisotropic Solution in Higher Dimensional Bimetric General Relativity, Applications and Appl. Math., ISSN - 1932-9466, (2020).
33. Ahmed Al-Haysah and A.H. Hasmani. The Exact Vacuum Solution for Kaner Metric from Bianchi Type-I Cosmological model, Int. J. Comp. App., ISSN - 0975-8887, (2020).
34. A.A. Shaikh, R. Deszcz, V.G. Khambholja , and A.H. Hasmani, Curvature Properties of Interior Blackhole metric, Indian J. Pure Appl. Math., 51, 17779-1814 (2020).
35. A H Hasmani and Ahmed M. Al-Haysah, Exact solution with dust and shell-crossings for LTB inhomogeneous cosmological models, TWAS J. App. And Engg. Maths, (2020).
36. A H Hasmani and Bina R Patel, Simultaneous Weak and Strong Curvature Singularity in Tolman-Bondi Model with $k(r)=0$, Int. J. Comp. App., 176, 15, ISSN - 0975-8887, (2020).
37. A H Hasmani and Bina R Patel, Shell-Crossing and Shell-Focusing Singularity in Spherically Symmetric Spacetime, PRAJÑĀ - Journal of Pure and Applied Sciences, 27-28, 70-72, ISSN 0975 – 2595 (2020)
38. AM Al-Haysah and AH Hasmani, “Higher dimensional Bianchi type-I string cosmological model in $f(R)$ theory of gravity”, Heliyon, 7(9) (2021)
39. A. H. Hasmani, Burhanuddin Safi and Agniva Das, “A Mathematical Model and Study of Viral Hepatitis among Population in Afghanistan”, Communication in Biomathematical Sciences, 6(1) (2023), <https://doi.org/10.5614/cbms.2023.6.1.4>
40. Soni, S.V., Panchal, R. and Hasmani, A.H., “Solution of Weyl–Lanczos relations for Morris–Thorne wormhole”, General Relativity and Gravitation, 56.9 (2024). <https://doi.org/10.1007/s10714-023-03195-4> (2023 I.F. 2.1)
41. Panchal, R., Hasmani, A.H., López-Bonilla, J. “On the Lanczos Potential”, Journal of the Tensor Society, 17 (2024): 54-59. ISSN: 0974-5424 <https://doi.org/10.56424/jts.v17i01.201>
42. Hasmani, A.H., Soni, S.V. and Panchal, R., “Electromagnetic Multipoles for Morris–Thorne wormhole”, The Bulletin of the Calcutta Mathematical Society, 117.1 (2025): 51-62. ISSN: 0008-0659

43. Burhanuddin Safi, Agniva Das and A. H. Hasmani, "A Fractional SIR Model for Hepatitis A Virus: Lyapunov Stability and Effects of Awareness and Vaccination" Communication in Biomathematical Sciences, 8(2), (2025)
<https://doi.org/10.5614/cbms.2025.8.2.4>
44. S.V. Soni, A.H. Hasmani and S. Ray, "Compact star models in Einstein–Cartan gravity: The Finch–Skea Ansatz with spin-density effects", International Jour. Mod. Phys. A, 41(9) , 2650069 (2026), <https://doi.org/10.1142/S0217751X26500697>
45. Sagar V. Soni, A. C. Khunt, Farook Rahaman and A. H. Hasmani, "Energy conditions and stability of charged wormholes in $f(R, L_m)$ gravity: A comparative analysis with compact objects", International Journal of Modern Physics A, 41(14), 2650091 (2026), <https://doi.org/10.1142/S0217751X26500910>
46. A. H. Hasmani, V. D. Patel, "Mathematical Analysis of 2-Strain Endemic Equilibrium using a SEIR Model with Behavioral Effect", Jour. Indonesian Math. Soc., 32(2), (2026): <https://doi.org/10.22342/jims.v32i2.2106>
47. V.D. Patel and A.H. Hasmani, "Dynamical analysis of novel minimal SEIR model incorporating asymptomatic transmission", Jour. Math. Modelling, 14(2), 741-760 (2026) DOI: [10.22124/jmm.2025.31474.2832](https://doi.org/10.22124/jmm.2025.31474.2832)
48. Burhanuddin Safi, A. H. Hasmani and Purnachandra Rao Koya, "A Mathematical Framework for the Transmission Dynamics and Optimal Control of HCV-HIV Coinfection and Superinfection", Intern. Jour. of Math. and Math. Sciences, Vol. 2026, Article ID 3321786, <https://doi.org/10.1155/ijmm/3321786>

7. (b) Publication of Books:

1. Worked as an **Author for the Text Books of Mathematics for Std. 11** (Sem.-I and II) by Gujarat State Board of School Textbooks.
2. Co-authored "Tutorial Workbook of Advanced Engineering Mathematics" (ISBN No. 978-81-927554-9-6).
3. Co-authored "Tutorial Workbook of Calculus" (ISBN No. 97 8-81-927554-8-9).
4. Co-authored "Tutorial Workbook Linear Algebra & Vector Calculus" (ISBN: 978-81927554-4-1).

8. Ph.D. Students: Completed: 09

Working: 03

9. Other Academic Activities:

1. Worked as a Reviewer **for the Text Books of Mathematics for Std. 9** (Sem.-I and II English Medium) by Gujarat State Board of School Textbooks.
2. Worked as a Reviewer of **for the Text Books of Mathematics for Std. 6** (Sem.-I and II English Medium) by Gujarat State Board of School Textbooks.
3. Worked as a Resource Person in the preparation of Fundamental Glossary of Mathematics (English-Hindi-Gujarati) by Commission for Scientific and Technical Terminology, Ministry of Human Resource Development, Government of India.

4. Associated as a faculty member in the Post Graduate Department of Mathematics since 1995 and serving as a Professor. Received MSc, and Ph.D.(Mathematics) degrees from Bhavnagar University, Bhavnagar.
5. Member of Board of Studies in Mathematics of Sardar Patel University, also worked as the Chairman of the board. Also worked as Member of Board of Studies at several universities.
6. Worked as an author and translator in the Text Books of Mathematics for Standard-11 (Sem-I &II) prepared by the Gujarat State Board of School Text Books, Gandhinagar. Also co-authored three books on Engineering Mathematics
7. Worked as a Lecturer in Mathematics at SS Engineering College, Bhavnagar and at BVM Engineering College, Vallabh Vidyanagar.

10. Some Administrative Positions held:

1. Worked as Professor and Head of the Department of Mathematics during March-2016 to March-2026.
2. Worked as the Coordinator of Internal Quality Assurance Cell of Sardar Patel University. At present I am Co-coordinator of IQAC
3. Hon. Director of International Students Center of Sardar Patel University.
4. I was appointed as a Member of Executive Council of Sardar Patel University.
5. Worked as the Convenor of Ph.D. Coursework Committee of Sardar Patel University.
6. Worked as a Member of Academic and Advisory Committee of UGC-MMTTC, Sardart Patel University.
7. Co-authored the script of Documentary Film of Sardar Patel University and also worked as a Director of the documnetary film.