Publications:

A1: Papers in refereed international journals:

1. J. P. Vishwakarma and **G. Nath**, Similarity solutions for unsteady flow behind an exponential shock in a dusty gas, **Physica Scripta, IOP, U.K.**, Vol.74 (2006), 493-498; **Impact Factor =2.151, SCI**
2. J. P. Vishwakarma and **G. Nath**, Converging detonation waves in a dusty gas, **Journal of Technical Physics, Polish Academy, Poland**, Vol.47 Parts III (2006), 159-173
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4. J. P. Vishwakarma and **G. Nath**, Propagation of shock waves in an exponential medium with heat conduction and radiation heat flux, **Modelling, Measurement and Control B** Vol.77 (3) (2008), 67-84, **ASME, France**, **SCI Mago, ISSN:** 12595969
5. J. P. Vishwakarma and **G. Nath** and K.K. Singh, Propagation of shock waves in a dusty gas with heat conduction, radiation heat flux and exponentially varying density, **Physica Scripta, IOP, U.K.**,Vol.78(2008) 035402 (11); **Impact Factor =2.151, SCI**
6. J. P. Vishwakarma and **G. Nath**, Self-similar solution of a shock propagation in a mixture of a non-ideal gas and small solid particles, **Meccanica, Springer, Italy**, Vol. 44 (2009), 239-254**; Impact Factor =2.316, SCI**
7. **G. Nath**, Propagation of a cylindrical shock wave in a rotational axisymetric dusty gas with exponentially varying density, **Research in Astron. Astrophys**. Vol. 10 (2010), 445–460, **IOP, U. K.; Impact Factor =1.254, SCI**
8. J. P. Vishwakarma and **G. Nath**, Propagation of a cylindrical shock wave in a rotating dusty with heat conduction and radiation heat flux, **Physica Scripta, IOP, U.K**. Vol. 81 (2010) 045401 (9pp) **Impact Factor =2.151, SCI**
9. **G. Nath**, Magnetogasdynamic shock wave generated by a moving piston in a rotational axisymmetric isothermal flow of perfect gas with variable density. **Advances in Space Research 47 (2011) 1463–1471, Elsevier Science.** **Impact Factor =1.746, SCI**
10. **G. Nath** and A. K. Sinha, A self-similar flow behind a magnetogasdynamics shock wave generated by a moving piston in a gravitating gas with variable density: isothermal flow, **Phys. Res. Inter**.**Vol. 2011, Article ID 782172, 8 pages**. d**oi:10.1155/2011/782172, SCI Mago**

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12. J. P. Vishwakarma and **G. Nath**, Spherical shock wave generated by a moving piston in mixture of a non-ideal gas and small solid particles under a gravitational field, **Commun Nonlinear Sci Numer Simulat 17 (2012) 2382-2393. ; Impact Factor =3.967, Elsevier Science, SCI**

13. **G. Nath,** Self-similar flow of a rotating dusty gas behind the shock wave with increasing energy, conduction and radiation heat flux, **Advances in Space Research 49 (2012) 108–120, Elsevier Science. Impact Factor =1.746, SCI**

14. **G. Nath,** Self-similar solution of cylindrical shock wave propagation in a rotational axisymmetric mixture of a non-ideal gas and small solid particles, **Meccanica 47(2012)1797-1814, Springer, Impact Factor =2.316, SCI**

15. J. P. Vishwakarma and **G. Nath**, Magnetogasdynamic shock waves in a rotating gas with exponentially varying density, **ISRN Mathematical Physics, Volume 2012, Article ID 168315, 11pages, doi:10.5402/2012/168315, (2012) USA**

16. **G. Nath,** Propagation of a cylindrical shock wave in a rotational axisymmetric isothermal flow of a non-ideal gas in magnetogasdynamics, **Ain Shams Eng. J. 3, 393-401(2012), Elsevier Science , Impact Factor = 3.091, SCI**

17. **G. Nath,** J. P. Vishwakarma, V K Srivastava and A. K. Sinha, Propagation of magnetogasdynamic shock waves in a self-gravitating gas with exponentially varying density, **J. Theoretical and Applied Physics 2013, 7:15,** DOI: 10.1186/2251-7235-7-15**, Springer, Highly Accessed, SCI Mago,**

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21. **G. Nath,** Unsteady isothermal flow behind a magnetogasdynamic shock wave in a self-gravitating gas with exponentially varying density, **J. Theoretical and Applied Physics (2014) 8:331, DOI: 10.1007/s40094-014-0131-y, SCI Mago, Springer**
22. **G. Nath,** Cylindrical shock wave in a rotational axisymmetric non-ideal dusty gas with increasing energy in the presence of conductive and radiative heat fluxes, **Ain Shams Eng. J. 6 (2015), 1053-1068, DOI:10.1016/j.asej.2014.12.010, Elsevier Science, Impact Factor = 3.091, SCI**
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25. G. Nath, Propagation of exponential shock wave in an axisymmetric rotating non-ideal dusty gas, Indian J. Phys.90 (2016), 1055-1068 **DOI: 10.1007/s12648-016-0842-9, Springer, Impact Factor =1.242, SCI Mago**
26. **G. Nath** and J. P. Vishwakarma**,** Propagation of a strong spherical shock wave in a gravitating or non-gravitating dusty gas with exponentially varying density, Acta Astronatica 123(2016), 200-213. Elsevier, **Impact Factor =2.482, SCIE**
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28. **G. Nath and P. K. Sahu,** Flow behind an exponential shock in a rotational axisymmetric perfect gas with magnetic field and variable density, **SpringerPlus** (2016)5:1509; DOI:10.1186/s40064-016-3119-z, Impact Factor =0.982 SCIE, Springer

29. **G. Nath** and A. K. Sinha, Magnetogasdynamic shock waves in non-ideal gas under gravitational field-isothermal flow**, Int. J. Appl. Comput. Math. 3 (2017), 225-238, DOI :10.1007/s40819-015-0101-3**, Scopus, **Springer**
30. **G. Nath and P. K. Sahu,** Flow behind an exponential shock wave in a rotational axisymmetric non-ideal gas with conduction and radiation heat flux, Int. J. Appl. Comput. Math. 3(4) (2017), 2785-2801, **DOI: 10.1007/s40819-016-0260-x, Scopus,** Springer
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32. **G. Nath, Sumeeta Singh,** Flow behind magnetogasdynamic exponential shock wave in self-gravitating gas, Int. J. Nonlin. Mechanics 88 (2017), 102-108, DOI:**10.1016/j.ijnonlinmec.2016.11.001,** Impact Factor =**2.225**, Elsevier, SCI
33. **G. Nath and P. K. Sahu,** Propagation of a cylindrical shock wave in a mixture of a non-ideal gas and small solid particles under the action of monochromatic radiation **Combustion, Explosion, and Shock Waves 53 (2017), 298-308,** Impact Factor = 0.825, **Springer, SCI**
34. **G. Nath and P. K. Sahu,** Self-similar solution of a cylindrical shock wave under the action of monochromatic radiation in a rotational axisymmetric dusty gas, **Commun. Theor. Phys. 67 (2017), 327-336, Impact Factor =1.416, IOP, SCI**
35. **G. Nath, M. Dutta and R. P. Pathak,** An exact solution for the propagation of shock waves in self-gravitating medium in the presence of magnetic field and radiative heat flux **Modelling, Measurement and Control B Vol. 86; N° 4; (2017) pp 907-927,** http://iieta.org/Journals/MMC/MMC_B**;https://doi.org/10.18280/mmc_b.860406** AMSE Press, **France, SCI Mago**
36. **G. Nath,** R. P. Pathak and M. Dutta, Similarity solutions for unsteady flow behind an exponential shock in a self- gravitating non-ideal gas with azimuthal magnetic field, Acta Astronatica142(2018),152-161 https://doi.org./10.1016/j.actaastro.2017.10.029, Elsevier, **Impact Factor =2.482, SCI**
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with radiation heat flux and variable density, J. Eng. Phys.Thermophys. 91(5) (2018) 1302-1312, DOI 10.1007/s10891-018-1862-4, Springer, SCI Mago

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40. **G. Nath,** Flow behind an exponential shock in a rotational axisymmetric mixture of non-ideal gas and small solid particles with heat conduction and radiation heat flux Acta Astronatica 148 (2018), 355-368, Elsevier, **Impact Factor =2.482, SCI**

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42. **G. Nath**, P. K. Sahu and S. Chaurasia, An exact solution for the propagation of cylindrical shock waves in a rotational axisymmetric non-ideal gas with axial magnetic field and radiative heat flux, **AMSE JOURNALS-AMSE IIETA publication-2018-Series: Modelling B; Vol. 87 ; N°4; pp 236-243, AMSE Press, France, SCI Mago http://iieta.org/Journals/MMC/MMC_B; https://doi.org/10.18280/mmc_b.870404**

43. **G. Nath,** Cylindrical shock wave generated by a moving piston in a rotational axisymmetric non-ideal gas with conductive and radiative heat-fluxes in the presence of azimuthal magnetic field, Acta Astronatica156 (2019), 100-112. https://doi.org/10.1016/j.actaastro.2018.10.041, **Impact Factor =2.482, SCI,** Elsevier

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46. **G. Nath,** M. Dutta, R. P. Pathak, Exact similarity solution for the propagation of spherical shock wave in a van der Waals gas with azimuthal magnetic field, radiation heat flux, radiation pressure and radiation energy under gravitational field, **Proc. Natl. Acad. Sci., India, Sec. A: Phys. Sci. (2019) DOI: 10.1007/s40010-019-00625-4, Impact Factor = 0.681, SCIE, Springer**

47. **G. Nath,** Propagation of strong cylindrical shock wave in a self-gravitating rotational axisymmetric mixture of small solid particles and perfect gas with density varying exponentially, **Acta Astronatica 162 (2019), 447-460, Impact Factor =2.482, SCI,** Elsevier Science, https://doi.org/10.1016/j.actaastro.2019.06.016

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54. **G. Nath,** Exact self-similar solution for shock wave in a non-ideal gas with azimuthal magnetic field under isothermal flow condition, **Modelling, Measurement and Control B Vol. 88, No. 2-4 (2019) 134-140, https://doi.org/10.18280/mmc_b.882-412** **Journal homepage: http://iieta.org/journals/mmc_a, AMSE Press, France, SCI Mago**
55. **G. Nath,** Propagation of shock wave in a rotational axisymmetric ideal gas with density varying exponentially and azimuthal magnetic field: Isothermal flow, Indian J. Phys. 95, 163-175 (2021) DOI: 10.1007/s12648-020-01684-9; **Springer, Impact Factor =1.407, SCI Mago**
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58. **G. Nath,** Sumeeta Singh, Similarity solutions for magnetogasdynamic cylindrical shock wave in rotating ideal gas using Lie group theoretic method: Isothermal flow **Int. J. Geom. Methods in Modern Phys.** Vol. 17, No. 8 (2020) 2050123 (25 pages), DOI: 10.1142/S0219887820501236, **Impact Factor =1.287, SCI** World Scientific J.
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60. **G. Nath,** Approximate analytical solution for the propagation of shock waves in self-gravitating perfect gas via power series method: Isothermal flow, J. Astrophys. Astr. (2020)41:21, https://doi.org/10.1007/s12036-020-09638-7 **SCI, Impact Factor = 1.273, Springer**
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64. **G. Nath**, Shock waves generated by a piston moving in a non-ideal gas in the presence of a magnetic field: isothermal flow, **South East Asian Journal of Mathematics and Mathematical Sciences, India**, Vol .5 (2)(2007),69-83.

A3: Paper in international conference proceeding:

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B. Research paper published in book as chapter:

70. J. P. Vishwakarma and **G. Nath**, Cylindrical shock wave generated by a piston moving in a non-uniform self-gravitating rotational axisymmetric gas in the presence of conduction and radiation heat-flux, **Advances in Engineering Research Volume 2 Editor: Victoria M. Petrova PP. 539-580, ISBN#978-1-61324-709-9, Nova Publisher in March 2012, USA, Price $ 215**

71. G. Nath, S. Singh, An exact solution for magnetogasdynamics shock wave generated by a moving piston under the influence of gravitational field with radiation flux: Roche model, **Lectures Notes in Mechanical Engineering:** **Book Title: Advances in Structural Vibration,** **Book Subtitle: Select Proceedings of ICOVP 2017, Editors:** Dutta**, Subashisa,** Inann**, Esin,** Dwivedy**, Santosha Kumar (Eds.); eBook ISBN- 978-981-15-5862-7 Hardcover ISBN-978-981-15-5861-0 Series ISSN-2195-4356 , DOI:10.1007/978-981-15-5862-7, Publisher- Springer Singapore, Published 17 Sept. (2020),** Price: **291,19 €**

C: Research results published in news papers in abroad by high beam research:

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