Dr. Bali Ram Gupta

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Areas of Interest: Fluid Mechanics, Multiphase flow, Flow through porous media, boundary value problems.

Brief Profile:

Dr. B. R. Gupta completed B. Sc. in 2002 from Ewing Christian College, Prayagraj. Further he received M. Sc. and Ph. D. degree in mathematics from University of Allahabad, Prayagraj, in 2004 and 2010 respectively. He qualified GATE in 2004, NET (LS) in 2003 & 2004 and NET (JRF) in 2005 conducted by CSIR-UGC. He was awarded Senior Research Fellowship of Ministry of Human Resource Development, Govt. of India during Ph.D. His research interest includes low Reynolds number hydrodynamics, transport phenomena in porous media, multiphase flow and boundary value problems. Prior to joining JUET in 2010, he taught in HMFAM Institute of Eng. & Tech., Prayagraj. He has guided two Ph.D. students successfully and guiding two Ph.D. students at present. He has published more than twenty research papers in peer-reviewed international journals. He has also presented his research papers in many national and international conferences. He is life member of Indian Science Congress Association, Indian Society for Technical Education, Indian Society of Theoretical and Applied Mechanics, Indian Mathematical Society, International Academy of Physical Sciences and Indian Society of Biomechanics.

Ph. D. Supervision

(1) Mr. Bharat Raj Jaiswal "Stokes Flow over Axisymmetric Bodies" December 2015.
(2) Miss. Vandana Mishra, "Drag on Axially Symmetric Body" December 2018.
(3) Mr. Ravendra Prasad Namdeo, "Creeping flow over spherical body" ongoing.
(4) Mr. Harsh Jain, "Axisymmetric creeping flow of couple stress fluid" ongoing.

Publication@JUET

Publication details google profile link

(1) "Stokes flow of micropolar fluid past a porous sphere with non-zero boundary condition for microrotations", International journal of fluid mechanics research Vol. 37(5), pp 424-434, 2010.

(2) "Axisymmetric creeping flow of a micropolar fluid over a sphere coated with a thin fluid film", Journal of Applied Fluid Mechanics, Vol. 6, No. 2, pp. 149-155, 2013 (SCI).

(3) "Drag on Reiner-Rivlin liquid sphere placed in a micro- polar fluid with non-zero boundary condition for microrotations", International Journal of Applied Mathematics and Mechanics", Volume 10, Issue 7, pp 90-103, 2014.

(4) "Wall effects on Reiner-Rivlin liquid spheroid", Applied and Computational Mechanics, Volume 8, Issue 2, pp157-176, 2014.

(5) "Brinkman flow of a viscous fluid past a Reiner-Rivlin liquid sphere immersed in a saturated porous medium", Transport in Porous Media, Volume 107, Issue 3, pp 907-925, 2015 (SCI).

(6) "Stokes flow over composite sphere: Liquid core with permeable layer", Journal of Applied Fluid Mechanics, Volume 8, Issue 3, pp339-350, 2015 (SCI).

(7) "Stokes flow of micropolar fluid past a non-Newtonian liquid spheroid", International Journal of Fluid Mechanics Research, Vol. 42 Issue 2, pp 170-189, 2015.

(8) "Drag on a permeable sphere placed in a micropolar fluid with non-zero boundary condition for microrotations" Journal of applied mathematics and computational Mechanics, Volume 15, Issue 3, pp.97-109, 2016.

(9) "Cell models for viscous flow past a swarm of Reiner-Rivlin liquid spherical drops", Meccanica, Volume 52, pp 69-89, 2017 (SCI).

(10) "Stokes Flow over a Non-Newtonian Encapsulated Drop of Another Liquid: Effect of Stress Jump" Journal of porous media, Vol. 20(9), pp.807-821, 2017 (SCI).

(11) "Motion of a permeable shell in a spherical container filled with non-Newtonian fluid", Applied Mathematics and Mechanics, Vol. 38 (12), pp.1697-1708, 2017 (SCI).

(12) "Drag Experienced by a Composite Sphere in an Axisymmetric Creeping Flow of Micropolar Fluid", Journal of Applied Fluid Mechanics, Vol 11(4), pp.995-1004, 2018 (SCI).

(13) "Impact of Magnetic Field on the Creeping Flow Past a Slightly Deformed Sphere" , JUET Research Journal of Science & Technology, Vol. 6, PP 22-28, 2020.

(14) "Creeping flow around a spherical particle covered by semipermeable shell in presence of magnetic field" , IOP Conf. Ser.: Mater. Sci. Eng., Vol. 1136, June 2021.

(15) "Magnetic effect on the creeping flow around a slightly deformed semipermeable sphere" , Archive of Applied Mechanics, Vol 92, pp. 241-254 , 2022. (SCI).

(16) "Slip at the surface of slightly deformed sphere in MHD flow" , Special Topics & Reviews in Porous Media, Vol 13(1), pp.1-14, 2022.

(17) "Impact of Magnetic Field on the Flow of a Conducting Fluid Past an Impervious Spheroid Embedded in Porous Medium . Int. J. Appl. Comput. Math 8 (3), 2022.

(18) "Drag exerted by a micropolar fluid on a dense swarm of permeable spherical particles" , Archive of Applied Mechanics, Vol 92, pp.3417-3431, 2022. (SCI).