Faculty Profile
Dr. Sonam Tanwar

Title	Dr.	First Name	SONAM	Last Name	TANWAR	Photograph
Designation		Assistant Professor				
Address		Room no.-113, Third Floor, Rugby Sevens Building, University Stadium,Cluster Innovation Centre, University of Delhi, Delhi-110007.				
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Web-Page						

Educational Qualifications

Degree	Institution	Year
Ph.D	I.I.T. Roorkee	2014
M.Sc.	I.I.T. Roorkee	2009
B.Sc.	University of Delhi	2007

Career Profile

Working as an assistant professor at Cluster Innovation Center, University of Delhi since from Jan, 2014.

Administrative Assignments

- Convener Examination Committee, CIC, University of Delhi.
- Convener Hostel Committee, CIC, University of Delhi
- Convener Work-load and time-table committee, CIC, University of Delhi.
- Member Student‟s Advisory Committee, CIC, University of Delhi.
- Convener Alumini Committee, CIC, University of Delhi.

Areas of Interest / Specialization

Computational Fluid Dynamics, Advanced numerical techniques, Finite element methods, Meshfree Methods

Subjects Taught

Linear Algebra,
Numerical Analysis,
Graph Theory,
Probability & Statistics, Calculus,
Finite Element Method,
Partial Differential Equations,
Linear Programming,
Ordinary Differential equations

Research Guidance

2 Ph.D scholars

Publications Profile

1. Bhargava R., Singh S. : 2013, Element free Galerkin Simulation of mixed convection MHD flow over a vertical power-law stretching sheet, *International Journal of Applied Mathematics and Mechanics,* 9 (8): 54-74.

2. Singh S., Bhargava R.: 2012, Element free Galerkin simulation of unsteady micropolar squeeze film flow of a biologicallubricant, *Journal of Information & Operation Management*, ISSN: 0976–7754 & E-ISSN: 0976–7762 3 (1) 149-152.

3. Beg Anwar O., Bhargava R., Singh S., and Maregere H.:2013, Element-free galerkin method (EFGM) computation of transient micropolar magnetic squeeze biofilm*, International Journal of Applied Mathematics and Mechanics,*9, 1-21.

4. Singh S., Bhargava R.: 2014, Numerical study of natural convection within a wavy enclosure using Meshfree approach: Effect of corner heating, *The Scientific world Journal,* (Hindawi Publications), 2014, Article ID 842401, 18 pages, dx.doi.org/10.1155/2014/842401.

5. Singh S., Bhargava R.: 2015, Numerical simulation of a phase transition problem with natural convection using hybrid FEM / EFGM technique, *International Journal of Numerical methods for Heat and Fluid flow*, Vol. 25, Issue 3, pp. 570-592. (SCI publication)

6. Bhargava R., Singh S.: 2012, Numerical study of unsteady flow and heat transfer of a second grade fluid with viscous dissipation and joule heating using Meshfree approach", *World Academy of Science, Engineering and Technology*, International Science index 66, Vol. 6, Issue 6, pp. 1215-1221 (Proceeding of ICAMNA-2012 held at Paris during 27th June-28th June, 2012).

7. Bhargava R., Singh S.: 2011, Numerical study of mixed convection flow over a vertical power-law stretching sheet using EFGM, *Proceedings of International conference on Advances on Modeling, Optimization and Computing*, 280-290.

8. Bhargava R., Singh S.: 2013, Meshfree methods: An efficient advanced computing approach for Bio-medical problems, *IEEE conference proceedings,ICACCI,* 1397- 1402,Digital Object Identifier: 10.1109/ICACCI.2013.6637383.

9. Singh S., Bhargava R.: 2014,Simulation of phase transition during cryosurgical treatment of a tumor tissue loaded with nano-particles using meshfree approach, ASME Journal ofHeat *Transfer, 136(12), 10 pages, DOI: 10.1115/1.4028730*. (SCI Publicaiton)

10. Singh S., Bhargava R.: 2015, Element free Galerkin simulation of flow and heat transfer of a viscoelastic fluid over a stretching sheet embedded in a porous medium with variable fluid properties and Newtonian heating, *ScientiaIranica B*, vol. 22, Issue 2, pp. 504-518. (SCI Publication)

11. Singh S. : 2018, A Meshfree Based Lattice Boltzmann Approach for Simulation of Fluid Flows within Complex Geometries: Application of Meshfree methods for LBM Simulations, *Analysis and Applications of Lattice-Boltzmann Simulations, (188-222),10.4018/978-1-5225-4760-0.ch006, IGI Global Publishers, USA.*

12. Sonam Singh, "X-FEM: An efficient algorithm for simulation of phase transition during prostate cryosurgery", accepted for publication in „Computer and Mathematics with Applications", (SCI Journal, Impact Factor:2.811)

13. Sonam Tanwar, Lalhmingsangi Famhawite, Pooja Raj Verma 2023, Numerical Simulation of bio-heat transfer for cryoablation of regularly shaped tumours in liver tissue using multi-probes, Journal of Thermal Biology, 113, 1-3531.

14. Lalhmingsangi Famhawite, Sonam Tanwar, Pooja Raj Verma 2024,Cryosurgery process and applications: A Mathematical Review, CryoLetters 45(5), 269 – 278, doi.org/10.54680/fr24510110112.

Conference Presentations (in the last three years)
1. Sonam Tanwar, Ruhi Sharma, 'Modelling and structural analysis for prosthesis hip design using ANSYS with Finite Element Method' presented in International conference on 'Soft computing: Theory & applications (SOCTA)' in 2020.
2. Paper presentation in 68th International conference of Indian Society of Theoretical and Applied Mechanics (ISTAM) during 07-09 December 2023, organised by National Institute of Technology,Warangal.

Research Projects (Major Grants/Research Collaboration)

Major research project:

Granted with early career research award through DST-SERB for the project entitled "Development of an optimal planning framework for cryosurgical treatment of tumor tissues via mathematical modeling and numerical simulations".
Project Duration: 3 years
Grant Sanctioned: 20,26,885/-
Date of start of the project: 30/03/2017.
Date of completion of the project: 30/03/2020

Innovation Project:

1. Worked as a CO-PI in innovation project "Weaving dreams for destitute- Night shelter project" Funded by university of Delhi.

2. Worked as a Co-PI in innovation project "Impact of FDI in multi-brand retail on local kirana shops" funded by University of Delhi.

Association With Professional Bodies

- Ramanujun Society *(Membership approval number – 1137)*
- Universal Association of Computers and Electronics Engineers (*Membership number: SM1004935*)
- Reviewer for "Alexandria Engineering Journal", Elsevier Editorial system.
- Reviewer for International Journal of "Frontiers in Heat and Mass Transfer ".
- Reviewer for International Journal of "Computer Methods in Biomechanics and Biomedical Engineering

Signature of Faculty Member