

Faculty Profile

Name : Dr. Shubha Nagaraj
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About me: Designated as an **Associate Professor of Mathematics**, thrust research area is engrossed on developing mathematical models to study Electro-hydrodynamic stability of fluid flows. Unruffled, the development of new mathematical and computational models has given a new impetus to research on fluid dynamics. This field has been extended and applied to interdisciplinary field to analyse the energy required for transmitting a packet in a network susceptible to multiple failures. Major contribution and the area of interest have been at the interface of Fluid dynamics, Nanotechnology and Applied mathematics. Protracted, collaborated with researchers outside my institution and have proved competency to perform independent research. Recognised for prestigious research fellowship from UGC-Centre for Advanced Studies in Fluid Mechanics to conduct research work on Fluid dynamics with several travel awards from highly reputed national and international Institutions to present research work. In the teaching space, a steadfastness approach was prompted to demystifying higher-level mathematics for undergraduate and post graduate programs, driven to foster a rigorous yet supportive environment where students' inscription empowered to confrontation, stimulating problems.

Qualification:

B.Sc: (Mysuru University) B.Sc: (Mysuru University) Ph.D: (Bengaluru University)

Courses Taught:

UG:

Linear algebra
Numerical Analysis
Probability and Statistics
Calculus
Complex Analysis
Ordinary Differential Equations

PG:

Applied Mathematics
Discrete Mathematics

Publications:

Journal Publication: International

- Electro hydrodynamic stability of poorly conducting homogeneous fluid saturated porous layer in the presence of combined transverse electric and magnetic fields, IOSR Journal of Computer engineering, 27, 30-38, 2025
- Governing dynamics for a multi-hop network under noisy conditions – An analogy to charged particle moving through a fluid under transverse variable electromagnetic field”, Stochastic Modelling and Computational Sciences, 3, 429-436, 2023
- A Study On Packet Loss Simulating a network as a Fluid, International Journal of Advanced Research in Engineering and Technology, 12, 523-527, 2021
- “An Analogy of a Network to an Electro Hydrodynamic Fluid Flow to Analyze the Energy Required for Transmitting a Packet in a Network Susceptible to Multiple Failures, International Journal of Innovative Technology and Exploring Engineering, 9, 1341-1344, 2020
- “Electro hydrodynamic stability of poorly conducting parallel fluid flow in the presence of transverse electric field, International Journal of Non-Linear mechanics, 43, 643-649, 2008

Conference Proceedings:

National:

- Two Day Symposium on “Recent Advances in Fluid Mechanics”, Electro hydrodynamic Stability of Poorly Conducting Parallel Viscous Fluid Flows in The Presence of Electric Field & magnetic field, 2005, **Sponsoring Agency:** UGC-CAS in Fluid Mechanics, Department of Mathematics, Central College Campus, Bangalore University, Bangalore
- One Day State level conference on “Trends in materials processing in science, Engineering and Technology”, Probability of Poorly Conducting Parallel Viscous Fluid Flows In The Presence of Electric Field”, 2006, **Sponsoring Agency:** Siddaganga Institute of Technology, SIT, Tumkur

International:

- Third International Conference on Super strong Fields in Plasmas, Electro hydrodynamic Stability of Poorly conducting Plasma in the presence of Strong Transverse Electric Field, September: 19-24, 2005, **Sponsoring Agency:** Villa Monoastero, Varenna, Italy
- International Conference on “Advances in Applied Mathematics“ Electro hydrodynamic Stability of Poorly Conducting Parallel Viscous Fluid Flows in The Presence of Electric Field”, 2004, **Sponsoring Agency:** Gulbarga University, Gulbarga

- Recent trends in Fluid mechanics, Electric Field on Stability of Poorly Conducting Parallel Fluid Flows in A Channel, April 2006, **Sponsoring Agency:** Siddaganga Institute of Technologies, Tumkur
- Computational Methods in Continuum Mechanics (CMCM-2006), Electrohydrodynamic Stability of poorly conducting parallel Inviscid Fluid flow in the presence of Transverse Electric Field, January-11&12, 2006, **Sponsoring Agency:** Department of Mathematics ANNA University, Chennai
- A new approach. Hydro 2010, Flow modeling over inclined rectangular weir; December 26-27, 2010, **Sponsoring Agency:** UGC-CAS in Fluid Mechanics, Department of Mathematics, Bangalore

Other achievements:

Assignments / Deputation to Outside Institutions / Universities

Sl.No.	Nature of Assignment	Institution / University where Assignment taken	Dates (From - To)		Sponsoring Agency
1	Board of examiner	Department of Physics, (Integrated M.Sc.), Manasa Gangothi, Mysuru.	2007	2009	University of Mysuru
2.	Board of examiner,	Department of Mathematics SJCE, Mysuru.	2013	2014	SJCE, Mysuru
3	Board of examiner,	Department of Mathematics NIE, Mysuru.	2015	till date	NIE, Mysuru
