

Dr. Anandamoy Mukhopadhyay

Associate Professor, Department of Mathematics,
Vivekananda Mahavidyalaya (under The University of Burdwan),
Purba Bardhaman, West Bengal - 713103, India

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Bio

I am currently an Associate Professor in the Dept. of Mathematics, Vivekananda Mahavidyalaya. I have completed my PhD from The University of Burdwan. My primary research interest lies in the field of Fluid Mechanics. In Fluid mechanics my interests are in Newtonian/Non-Newtonian fluid flows on the microscale concentrating on thin film theories, the effects of rotation, slip, porous media, Marangoni instability, electric field and electromagnetism. I focus on the development of mathematical models to solve challenging applied mathematics problems. My research group uses both analytical and numerical techniques to solve the fluid flow problems.

Education

1. **Ph.D. in Mathematics** (2012)
The University of Burdwan, West Bengal, India
Thesis: Studies of some problems on hydrodynamical stability of a thin liquid film
2. **M.Phil in Mathematics** (2003)
Specialization: Applied Mathematics
University of Calcutta, West Bengal, India (Secured the first position)
Thesis: Some aspects of Cauchy-Poisson problem
3. **M.Sc in Mathematics** (1990)
Specialization: Applied Mathematics
The University of Burdwan, West Bengal, India (Secured the second position)
4. **B.Sc in Mathematics** (1988)
The University of Burdwan, West Bengal, India (Secured the second position)

Publications (Details are given in [Annexure - I](#))

1. Journal Publications: **14** (International)
2. Conference Publication: **01** (International)

Research Project (Details are given in [Annexure - II](#))

1. Completed: **02**

Research Guidance (Details are given in [Annexure - III](#))

1. Ph.D: **01** (Completed) (**Student has received Postdoctoral Research Fellowship in North Carolina State University, America just after completion of his PhD work**)
1. Ph.D: **01** (Ongoing)

Teaching Experience 24 Years

Institution/Organization	University	Designation	Duration
Vivekananda Mahavidyalaya	The University of Burdwan	Associate Professor	01.11.2012– Present
Vivekananda Mahavidyalaya	The University of Burdwan	Lecturer (SG)	01.08.2007 – 01.11.2012
Vivekananda Mahavidyalaya	The University of Burdwan	Senior Lecturer	01.08.2002 – 01.08.2007
Vivekananda Mahavidyalaya	The University of Burdwan	Lecturer	01.08.1997 – 01.08.2002

Academic Achievements

1. Qualified CSIR NET (Dec, 1990) conducted by UGC and CSIR
2. Qualified GATE 1990 in Mathematics conducted by IIT and IISc Bangalore

People : Collaborators of published/accepted papers

- **Amlan K. Barua**
Assistant Professor, Department of Mathematics,
Indian Institute of Technology Dharwad,
Dharwad, Karnataka 580011, India
abarua@iitdh.ac.in (✉)
- **Souradip Chattopadhyay**
Postdoctoral Research Fellow, Department of Mathematics,
North Carolina State University, Raleigh, NC 27695, USA.
sdipmath@gmail.com (✉)
- **Akshay S. Desai**
Senior Research Fellow, Department of Mechanical, Materials and Aerospace Engineering,
Indian Institute of Technology Dharwad,
Dharwad, Karnataka 580011, India
203121003@iitdh.ac.in (✉)
- **Pavanbasudev Boragunde**
Research fellow, Stanford University, Stanford, CA 94305, USA.
- **Gowri Y. Subedar**
B.Tech Student, Department of Mechanical, Materials and Aerospace Engineering,
Indian Institute of Technology Dharwad,
Dharwad, Karnataka 580011, India
180030019@iitdh.ac.in (✉)
- **Amar K. Gaonkar**
Assistant Professor, Department of Mechanical, Materials and Aerospace Engineering,
Indian Institute of Technology Dharwad,
Dharwad, Karnataka 580011, India
amar.gaonkar@iitdh.ac.in (✉)
- **Sanghasri Mukhopadhyay**
Doctoral student, Laboratoire LOCIE,
Universite Savoie Mont Blanc,
Chambery 73000, France
sanghasri.mukhopadhyay@univ-smb.fr (✉)
- **Asim Mukhopadhyay**
Associate Professor, Department of Mathematics,
Vivekananda Mahavidyalaya (under The University of Burdwan),
Purba Bardhaman, West Bengal 713103, India
as1m_m@yahoo.co.in (✉)

- **Bhabani Shankar Dandapat**

Professor (retired), Physics and Applied Mathematics Unit,
Indian Statistical Institute,
Kolkata, West Bengal 700108, India

Other activities : Act as a reviewer of the journals of Physics of Fluids, Nonlinear Dynamics and the Science.j. of University of Zakho.

1. **Falling liquid films on a slippery substrate with variable fluid properties**
 - [Int. j. of Non-Linear Mechanics](#) Article Number 104200
 - DOI: 10.1016/j.ijnonlinmec.2022.104200
 - Authors: S. Chattopadhyay, Pavanbasudev Boragunde, Amar K. Gaonkar, Amlan K. Barua, **A. Mukhopadhyay**
 - Year of publication: [28 August, 2022](#)
2. **Weakly viscoelastic film flowing down a rotating inclined plane**
 - [Physics of Fluids](#), Vol. 34(1), pp. 012115
 - DOI: 10.1063/5.0077366
 - Authors: S. Chattopadhyay, **A. Mukhopadhyay**
 - Year of publication: [2022](#)
3. **Effect of odd-viscosity on the dynamics and stability of a thin liquid film flowing down on a vertical moving plate**
 - [International Journal of Non-Linear Mechanics](#), Vol. 140, pp. 103905
 - DOI: 10.1016/j.ijnonlinmec.2022.103905
 - Authors: S. Chattopadhyay, G. Y. Subedar, A. K. Gaonkar, A. K. Barua, **A. Mukhopadhyay**
 - Year of publication: [2022](#)
4. **Weakly viscoelastic film on a slippery slope**
 - [Physics of Fluids](#), Vol. 33(11), pp. 112107
 - DOI: 10.1063/5.0070495
 - Authors: S. Chattopadhyay, A. S. Desai, A. K. Gaonkar, A. K. Barua, **A. Mukhopadhyay**
 - Year of publication: [2021](#)
5. **Effects of strong viscosity with variable fluid properties on falling film instability**
 - [NODYCON 2021](#) (Second Nonlinear Dynamics conference)
 - DOI: 10.1007/978-3-030-81162-4_7
 - Authors: **A. Mukhopadhyay**, S. Chattopadhyay, A. K. Barua
 - Year of publication: [2021](#)
6. **Thermocapillary instability on a film falling down a non-uniformly heated slippery incline**
 - [International Journal of Non-Linear Mechanics](#), Vol. 133, pp. 103718
 - DOI: 10.1016/j.ijnonlinmec.2021.103718
 - Authors: S. Chattopadhyay, **A. Mukhopadhyay**, A. K. Barua, A. K. Gaonkar
 - Year of publication: [2021](#)
7. **Stability of thin film flowing down the outer surface of a rotating non-uniformly heated vertical cylinder**
 - [Nonlinear Dynamics](#), Vol. 100(2), pp. 1143 – 1172
 - DOI: 10.1007/s11071-020-05558-x
 - Authors: **A. Mukhopadhyay**, S. Chattopadhyay, A. K. Barua
 - Year of publication: [2020](#)

8. **A Review on Hydrodynamical Stability of Thin Film Flowing Along an Inclined Plane**
 - [Journal of Mathematical Sciences and Modelling](#), Vol. 2(2), pp. 133 – 142
 - DOI: 10.33187/jmsm.458359
 - Authors: S. Chattopadhyay, **A. Mukhopadhyay**, A. K. Barua
 - Year of publication: 2019
9. **Stability of thin liquid film flowing down a rotating horizontal or inclined plane by momentum-integral method**
 - [European Journal of Mechanics - B/Fluids](#), Vol. 75, pp. 58 – 70
 - DOI: 10.1016/j.euromechflu.2018.12.002
 - Authors: **A. Mukhopadhyay**, S. Chattopadhyay, A. K. Barua
 - Year of publication: 2019
10. **Long wave instability of thin film flowing down an inclined plane with linear variation of thermophysical properties for very small Biot number**
 - [International Journal of Non-Linear Mechanics](#), Vol. 100, pp. 20 – 29
 - DOI: 10.1016/j.ijnonlinmec.2018.01.005
 - Authors: **A. Mukhopadhyay**, S. Chattopadhyay
 - Year of publication: 2018
11. **Instabilities of Thin Viscous Liquid Film Flowing down a Uniformly Heated Inclined Plane**
 - [Journal of Heat and Mass Transfer Research](#), Vol. 3(2), pp. 77 – 87
 - DOI: 10.22075/jhmtr.2015.345
 - Authors: **A. Mukhopadhyay**, S. Mukhopadhyay, A. Mukhopadhyay
 - Year of publication: 2016
12. **Stability of a thin viscous fluid film flowing down a rotating non-uniformly heated inclined plane**
 - [Acta Mechanica](#), Vol. 216, pp. 225 – 242
 - DOI: 10.1007/s00707-010-0350-5
 - Authors: A. Mukhopadhyay, **A. Mukhopadhyay**
 - Year of publication: 2011
13. **Stability of conducting viscous film flowing down an inclined plane with linear temperature variation in the presence of a uniform normal electric field**
 - [International Journal of Heat and Mass Transfer](#), Vol. 52 (3-4), pp. 709 – 715
 - DOI: 10.1016/j.ijheatmasstransfer.2008.06.043
 - Authors: A. Mukhopadhyay, **A. Mukhopadhyay**
 - Year of publication: 2009
14. **Stability of conducting liquid flowing down an inclined plane at moderate Reynolds number in the presence of constant electromagnetic field**
 - [International Journal of Non-Linear Mechanics](#), Vol. 43, pp. 632 – 642
 - DOI: 10.1016/j.ijnonlinmec.2008.02.008
 - Authors: A. Mukhopadhyay, B. S. Dandapat, **A. Mukhopadhyay**
 - Year of publication: 2008

15. **Nonlinear stability of viscous film flowing down an inclined plane with linear temperature variation**

- [Journal of Physics D Applied Physics](#), Vol. 40, pp. 5683 – 5690
- DOI: [10.1088/0022-3727/40/18/025](https://doi.org/10.1088/0022-3727/40/18/025)
- Authors: A. Mukhopadhyay, **A. Mukhopadhyay**
- Year of publication: [2007](#)

Annexure – II

List of research projects of Anandamoy Mukhopadhyay

1. Project nature: **Minor Research Project**

Grant No: F PSW - 025/11 - 12 (ERO), dated 03.08.2011

Title: [Investigation of few problems on hydrodynamic instability of thin liquid film flowing along an inclined plane](#)

Total grant approved: 1,42,000/-

Status: [Completed](#)

2. Project nature: **Minor Research Project**

Grant No: PSW/20/06 - 07 (ERO), dated 06.11.2006

Title: [Modeling of finite amplitude long wave instability of a thin film flowing down an inclined plane](#)

Total grant approved: 65,000/-

Status: [Completed](#)

Annexure – III

List of research guidance

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- Supervision leading to doctoral work:

1. Akshay S. Desai (Dept. of Mechanical, Materials and Aerospace Engineering, IIT Dharwad, Karnataka, India) on *Falling film instability* jointly with Dr. Amar K. Gaonkar (Dept. of Mechanical, Materials and Aerospace Engineering, IIT Dharwad, Karnataka, India)

- Supervision completed for PhD:

1. Souradip Chattopadhyay (Dept. of Mathematics, IIT Dharwad, Karnataka, India) on *Falling film instability* jointly with Dr. Amlan K. Barua (Dept. of Mathematics, IIT Dharwad, Karnataka, India)

Declaration

I hereby declare that the information given above is true to the best of my knowledge and belief.

Anandamoy Mukhopadhyay

Date:01.09.2022

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