



Dr. Bibaswan Dey

M.Sc. (IIT Kharagpur), Ph.D. (IIT Kharagpur)
Assistant Professor
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Subject specialization: PDE Theory and Applications, Numerical Methods, Theoretical and Computational Mechanics.

Areas of Research Interest: Theoretical and Computational Mechanics, Multiphase Mixture Theory, Partial Differential Equations

Achievement & Awards:

Awarded ITS grant for Young scientists (SERB-DST) June 2018.

Awarded National Post-Doctoral Fellowship (SERB-DST) August 2017.

Awarded ICIAM-2015 grant (Republic of China).

Awarded Institute JRF and SRF at IIT Kharagpur through GATE-2011 (AIR-54).

Institute Scholarship during M.Sc. at IIT Kharagpur through JAM-2009.

Professional experiences:

Research Associate, Department of Mathematics, Indian Institute of Technology Kharagpur, Nov 2016- April 2017.

Research Assistant Professor, SRM Research Institute & Department of Mathematics, SRM Institute of Science & Technology, Kattankulathur Campus, Tamil Nadu, 12th June 2017-26th October 2018.

Assistant Professor, Department of Mathematics, University of North Bengal, Raja Rammohunpur, Dist.- Darjeeling, West Bengal- 734013, India, 30th Oct 2018- till date.

Research Scholar:

(1) Ongoing 4 (3 JRF, 1 SRF)

(2) Completed 0

Member of professional bodies:

Life member of

- (1) Indian Society of Theoretical and Applied Mechanics (ISTAM)
- (2) Indian Mathematical Society (IMS)

Research Project:

Sl. No.	Project Title	Role	Funding Agency	Amount	Duration	Status
1	The Role of Acidity in Multiphase Model Pseudo palisading Necrosis Within a Glioma	Principal Investigator	University of North Bengal	1,50,000/-	2020-2021 (One year)	Completed

Talk Deliver as a Resource Person/Visiting Faculty/Guest Faculty:

Sl. No.	Details	Topic
1	7 th Siksha 'O' Anusandhan Weekly Academic Lecture (SOAWAL – 2021) Centre for Applied mathematics & Computing, ITER Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar	“Endothelial Cell Glycocalyx as Electrokinetic Transport Regulator”
2	Four Months Online Enrichment Programme in Mathematics and Statistics Organized by The Department of Mathematics, Balurghat College February 2021 - March 2021	“Lectures on Calculus of Variation”
3	Guest Faculty From 18/04/2022-Present Department of Mathematics Darjeeling Hills University Mangpu, Darjeeling, West Bengal	Subject: “Partial Differential Equations”

Other Activity:

Sl. No.	Role	Details
1	Head and Coordinator of NBU (Siliguri) Test Center	The Doctoral Scholarship Scheme 2021 in Mathematics and Applied Mathematics for the Academic Year 2021-22, National Board for Higher Mathematics (NBHM)
2	Head and Coordinator of NBU (Siliguri) Test Center	The Doctoral Scholarship Scheme 2022 in Mathematics and Applied Mathematics for the Academic Year 2022-23, National Board for Higher Mathematics (NBHM)

Additional information: (Research Gate, Google Scholar, Personal Webpage link, etc.)

https://www.researchgate.net/profile/Bibaswan_Dey2 (ResearchGate)

<https://scholar.google.co.in/citations?user=8oNKDAYAAAAJ&hl=en> (Google Scholar)

<https://sites.google.com/view/bibaswandey/home> (Personal Webpage)

Selected Publications:

Journal Papers:

- Abdush Salam Pramanik, **Bibaswan Dey**, Timir Karmakar, Kalyan Saha, Two-phase Modeling of Fluid Injection Inside Subcutaneous Layer of Skin, arXiv preprint arXiv:2201.11673.
- **Bibaswan Dey**, G. P. Raja Sekhar, Mathematical modeling of electrokinetic transport through endothelial-cell glycocalyx, *Physics of Fluids*, 33 (8), 081902.
- Meraj Alam, **Bibaswan Dey**, G. P. Raja Sekhar, Mathematical modeling and analysis of hydroelastodynamics inside a solid tumor containing deformable tissue, *Zeitschrift für Angewandte Mathematik und Mechanik (ZAMM)*, Vol. 99, No. 5 (2019), pp. e201800223.
- **Bibaswan Dey**, G. P. Raja Sekhar, and Sourav Kanti Mukhopadhyay, In-vivo mimicking model for solid tumor towards hydromechanics of tissue deformation and necrosis creation, *Journal of Biological Physics* (Springer), Vol: 44 (3), Pgs. 361-400.
- Prakash Kumar, **Bibaswan Dey**, and G. P. Raja Sekhar (2018), Nutrient transport through deformable cylindrical scaffold: An application in tissue engineering, *International Journal of Engineering Science* (Elsevier), Vol: 127, Pgs. 201-216.
- **Bibaswan Dey**, G. P. Raja Sekhar, P. S. Burada, Electrophoresis of a soft charged particle in a sparsely packed bed, *Chemical Engineering Communications*, 205 (7), 991-1010.
- **Bibaswan Dey** and G. P. Raja Sekhar (2016), Hydrodynamics and Convection Enhanced Macromolecular Fluid Transport in soft Biological Tissues: Application to Solid Tumor, *Journal of Theoretical Biology* (Elsevier), Vol: 395, Pgs. 62-86.
- **Bibaswan Dey** and G. P. Raja Sekhar (2016), An analytical study on hydrodynamics of an unsteady flow and mass transfer through a channel asymmetrically lined with deformable porous layer, *European Journal of Mechanics B/Fluids* (Elsevier), Vol: 55, pgs. 71-87.

Book chapter: None

Paper presented in conferences:

Bibaswan Dey and G. P. Raja Sekhar, Function of endothelial cell-glycocalyx layer (EGL) towards blood borne micro-particle transport: An application of biphasic mixture theory, *13th World Congress of Computational Mechanics-2018 (WCCM)*, New York, United States, July 22-27, 2018.

Bibaswan Dey and G. P. Raja Sekhar, Convection enhanced macromolecular nutrient transport through a tumor interstitial space with quadratically varying permeability layer, *8th International Congress of Industrial and Applied Mathematics-2015 (ICIAM 2015)*, Beijing, China. August 10-15, 2015.

Bibaswan Dey and G.P. Raja Sekhar, Effect of axial vibration of boundary in a Brinkman medium on the Mass transfer and wall Shear stress, *11th ASME-ISHMT Heat and Mass transfer conference-2013*, IIT Kharagpur, India, December 28-31, 2013.

Bibaswan Dey and G. P. Raja Sekhar, Unsteady electro-osmotic flow through a Channel lined with charged deformable porous layer, *60th congress of ISTAM-2015*, MNIT Jaipur, India, December 16-19, 2015.

Bibaswan Dey and G. P. Raja Sekhar, Dynamics of a Charged Soft Porous Particle in an unbounded Mono-disperse Suspension, *59th congress of ISTAM-2014*, Alliance University, Bengaluru, India, December 17-20, 2014.