Curriculum Vitae of Dr. Bappaditya Bhowmik

Contact:

NAME	:	Bappaditya Bhowmik
MAILING ADDRESS	:	Associate Professor
		Department of Mathematics
		Indian Institute of Technology Kharagpur
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Education:

Degree (Subject)	Year	University/Institute
B.Sc.(Mathematics (Hons.))	2001	University of Calcutta
M.Sc.(Mathematics)	2003	IIT Bombay
Ph.D.	2009	IIT Madras

Details about Ph.D. thesis:

(1) **Title of the thesis:** Study of certain subclasses of meromorphic univalent functions
(2) **Ph.D. Supervisor:** Prof. S. Ponnusamy
(3) **Institute:** IIT Madras
(4) **Year of Award:** 2009

Work Experience:

(1) **Assistant Professor**, Department of Mathematics, NIT Rourkela (From 21st July, 2009 to 31st December, 2009)
(2) **Dr. D.S. Kothari postdoctoral fellow** at the Department of Mathematics, **Indian Institute of Science**, Bangalore, under the guidance of **Prof. Gautam Bharali**. (From 4th January, 2010 to 30th June, 2011)
(3) **Assistant Professor**, Department of Mathematics, NIT Rourkela (From 1st July, 2011 to 26th July, 2013)
(4) **Assistant Professor**, Department of Mathematics, **IIT Kharagpur** (From 29th July, 2013 to 7th May, 2019)
(5) **Associate Professor**, Department of Mathematics, **IIT Kharagpur** (From 8th May, 2019 to present)

Teaching: Following subjects are being taught by me:

- Advanced Calculus
- Mathematics-1
- Real Analysis
- Complex Analysis
- Measure Theory and Integration
- Modern Algebra
- Matrix Algebra
- Linear Algebra

Students: I have guided/guiding following students:

- **Ph.D. students** :
  (1) Dr. Goutam Satpati Joined in December 2013, (Status: Degree awarded)
  (2) Ms. Firdoshi Parveen (Joined in June 2014, Status: Degree awarded)
  (3) Mr. Nilanjan Das (Joined in June 2016, Status:Degree awarded)
  (4) Ms. Santana Majee (Joined in June 2017, Status: continuing)
  (5) Mr. Sambhunath Sen (Joined in December 2019, Status: continuing)
  (6) Mr. Souvik Biswas (Joined in September 2020, Status: continuing)
- **M.Sc. Project students** :
  (1) Mr. Surykanta Mondal (August 2013– May 2014)
  (2) Mr. Achinta Roy (August 2014–May 2015)
  (3) Ms. Anjana Mondal (August 2015–May 2016)
  (4) Ms. Swagata Ray (August 2015–May 2016)
  (5) Ms. Parul Khare(August 2016–May 2017)
  (6) Mr. Naresh (August 2016–May 2017)
  (7) Mr. Diveysh (August 2017–May 2018)
  (8) Mr. Ram Dhan (August 2017–May 2018)
  (9) Mr. Prasanna Kanti Ghosal (August 2018–May 2019)
  (10) Ms. Nitu (August 2018–May 2019)
  (11) Mr. Souvik Biswas (August 2019–May 2020)
  (12) Mr. Biswajit Mondal(August 2019–May 2020)
  (13) Ms. Anamika Pandey (August 2020–May 2021)
  (14) Mr. Tanuj Pandey (August 2020–May 2021)

(15) Mr. Dibeyndu Mandi (August 2021–May 2022)

(16) Ms. Rupali Sharma (August 2021–May 2022)

- **Summer internship students**:

(1) Gobinda Sau (Chennai Mathematical Institute, 1-6-2015 to 22-7-2015)

(2) Suman Das (IISER Kolkata, 23-05-2016 to 22-07-2016)

(3) Amritendu Das (IISER Bhopal, 23-05-2016 to 22-07-2016)

(4) Tuli Biswas (NIT Rourkela) (01-05-2017 to 30-06-2017)

Professional Recognition/ Award/ Prize/ Fellowship received by the applicant:

(1) Awarded **NANUM-2014** grant by the Organizing Committee of Seoul ICM-2014

(2) Awarded **Dr. D.S. Kothari Postdoctoral Fellowship**, by University Grants Commission, India, in the year 2009.

(3) Awarded **NBHM Postdoctoral Fellowship**, by National Board for Higher Mathematics, in the year 2009.

(4) Awarded the post of **Research Associate**, by Indian Institute of Science; Bangalore, in the year 2009.

(5) Qualified in **GATE-2004** securing 95.14 percentile with AIR= 68.

(6) Qualified for the award of **Junior Research Fellowship** in Mathematical Science and also eligible for lectureship in the "Joint CSIR-UGC Junior Research Fellowship (JRF) and eligibility for Lectureship - National Eligibility Test (NET)" held on 19/12/2004.

Research Grants:

(1) **Title**: On some problems of concave and meromorphically starlike univalent functions (2013-2016).

Funding Agency: NBHM, DAE, India (Ref.No.-NBHM/R.P.54/2012/Fresh/304).

(2) **Title**: On some problems in Geometric function theory and Nevanlinna-Pick interpolation (2014-2017).

Funding Agency: SRIC, IIT Kharagpur

(3) **Title**: On some problems in Geometric Function Theory and Quasiconformal Mappings (2018-2021).

Funding Agency: CSIR, India (Ref.No.-25(0281)/18/EMR-II).

(4) **Title**: Study of Meromorphic Univalent functions - a geometric function theoretic viewpoint (2019-2022).

Funding Agency: Mathematical Research Impact Centric Support **(MATRICS)**, SERB, DST.

List of publications:

(1) B. Bhowmik, S. Ponnusamy, and K.-J. Wirths: Domains of variability of Laurent coefficients and the convex hull for the family of concave univalent functions, *Kodai Math. J.* **30**(2007), 385–393.

(2) B. Bhowmik and S. Ponnusamy: Region of variability for concave univalent functions, *Analysis (Munich)* **28**(2008), no.3, 333–344.

(3) B. Bhowmik and S. Ponnusamy: Coefficient inequalities for Concave and meromorphically starlike univalent functions, *Ann. Polon Math.* **93**(2008), no. 2, 177–186.

(4) B. Bhowmik, S. Ponnusamy, and K.-J. Wirths: Unbounded convex polygons, Blaschke products and concave schlicht functions, *Indian J. Math.* **50**(2008), no. 2, 339–349.

(5) B. Bhowmik, S. Ponnusamy, and K.-J. Wirths: Concave functions, Blaschke products and polygonal mappings, *Siberian Mathematical Journal* **50**(2009), no. 4, 609–615.

(6) B. Bhowmik, S. Ponnusamy, and K.-J. Wirths: Coefficient estimates and the convex hull problem for meromorphic functions, *Mathematica (Cluj)* **51(74)**(2009), 31–38.

(7) B. Bhowmik, S. Ponnusamy, and K.-J. Wirths: Characterization and pre- Schwarzian norm estimate for concave univalent functions, *Monatshefte für Mathematik* **161**(2010), 59–79.

(8) B. Bhowmik, S. Ponnusamy, and K.-J. Wirths: On some problems of James Miller, *Cubo. A Mathematical Journal*, **12(1)**(2010), 15–21.

(9) B. Bhowmik: On some results of A.E. Livingston and coefficient problems for concave univalent functions, *Archiv der Mathematik* **95**(2010), 575–581.

(10) B. Bhowmik, S. Ponnusamy, and K.-J. Wirths: On the Fekete-Szegö problem for concave univalent functions, *J. Math. Anal. Appl.*, **373**(2011), 432–438.

(11) B. Bhowmik: On concave univalent functions, *Mathematische Nachrichten*, **285**(2012), 606–612.

(12) B. Bhowmik and K-J. Wirths: A sharp bound for the Schwarzian derivative of concave functions, *Colloquium Math.* **128**(2)(2012), 245–251.

(13) B. Bhowmik and K-J. Wirths: Inequalities for the coefficients of meromorphic starlike functions with nonzero pole, *Results in Math.*, **65**(2014), 1–8.

(14) B. Bhowmik and K-J. Wirths: Coefficient discs and generalized central functions for the class of concave schlicht functions, *Bull. Korean Math. Soc.***51**(2014), 1551–1559.

(15) B. Bhowmik: Regions of variability of a subclass of univalent analytic functions defined by subordination, *Proc. Ind. Acad. Sci. Math. Sci.*, **125(4)** (2015), 511–519.

(16) B. Bhowmik and K-J. Wirths: Central functions for classes of concave univalent functions, *Math. Slovaca*, **66** (2016), 1–6.

(17) B. Bhowmik and F. Parveen: Generalizations of the Area theorem for mermorphic univalent functions with nonzero poles, *Indian J. Pure Appl. Math.*, **47(3)**(2016), 545-551.

(18) B. Bhowmik, G. Satpati and T. Sugawa: Quasiconformal extension of meromorphic univalent functions with nonzero pole, *Proceedings of the American Mathematical Society*, **144**(6), (2016), 2593–2601.

(19) B. Bhowmik and F. Parveen: On a subclass of meromorphic univalent functions, *Complex Variables and Elliptic Equations*, **62(4)**(2017), 494-510.

(20) B. Bhowmik and F. Parveen: Criteria for univalence, integral means and Dirichlet integral for meromorphic functions, *Bulletin of the Belgian Mathematical Society*, **24**, (2017), 427-438.

(21) B. Bhowmik and F. Parveen: Sufficient conditions for univalence and study of a class of meromorphic univalent functions , *Bulletin of the Korean Mathematical Society* , **53**(3), (2018), 999–1006.

(22) B. Bhowmik and G. Satpati: On some results for meromorphic univalent functions having quasiconformal extension, *Proceedings of the Indian Academy of Science Mathematical Science*, Art 61, no5,(2018), 16 pp.

(23) B. Bhowmik and N. Das: Bohr phenomenon for subordinating families of certain univalent functions, *Journal of Mathematical Analysis and Applications*, **462**(2), (2018), 1087-1098.

(24) B. Bhowmik and F. Parveen: On the Taylor coefficients of a subclass of meromorphic univalent functions , *Bull. Malays. Math. Sci. Soc.*,**42**(2),(2019) 793-802.

(25) B. Bhowmik and G. Satpati: On some results for meromorphic univalent functions having quasiconformal extension, *Journal of the Korean Math. Soc.,* **56**(2),(2019), 439–455.

(26) B. Bhowmik and N. Das: Bohr phenomenon for locally univalent functions and logarithmic power series, *Computational Methods and Function Theory,* **19**(4),(2019), 729–745.

(27) B. Bhowmik and F. Parveen: On some results for a subclass of meromorphic univalent functions with nonzero pole, *Resultae der Mathematik*, **74**(4),(2019), 21pp.

(28) B. Bhowmik and G. Satpati: Lowener chain and quasiconformal extension of some classes of univalent functions , *Complex Variables and Elliptic Equations,* **65**(4),(2020) 544–557.

(29) B. Bhowmik and S. Majee: On harmonic univalent mappings with nonzero pole, *Journal of Mathematical Analysis and Applications,* **482**(1),(2020), 13pp.

(30) B. Bhowmik and S. Majee: On the coefficients of certain subclasses of harmonic univalent mappings with nonzero pole, *Bull. Braz. Math. Soc.,* **52** (2021), 1041–1053.

(31) B. Bhowmik and N. Das: A characterization of Banach spaces with nonzero Bohr radius, *Archiv der Math.,* **116** (2021), no. 5, 551–558.

(32) B. Bhowmik and N. Das: On some aspects of the Bohr inequality, *Rocky Mountain Journal of Mathematics*, **51** (2021), no. 1, 87–96.

(33) B. Bhowmik and N. Das: Bohr phenomenon for operator valued function, *Proceedings of the Edinburgh Mathematical Society*, **64** (2021), no. 1, 72–86..

(34) B. Bhowmik and N. Das: Bohr radius and its asymptotic value for holomorphic functions in higher dimensions, *C. R. Math. Acad. Sci. Paris*, **359** (2021), no. 7, 911–918.

(35) B. Bhowmik and N. Das: An operator-valued analogue of a result of Bombieri, *Complex Anal. Oper. Theory*, **16**(2), Paper No. 18, (2022), 10 pp.

Selected Talks/Conference participation:

- Delivered a talk on the paper titled as "Region of variability for concave univalent functions" in the conference "New directions in the theory of universal Zeta and L-functions" which was held at **Wuerzburg University, Germany** during the period 6th to 10th October, 2008.
- Invited talk titled as "Characterization and pre- Schwarzian norm estimate for concave univalent functions" delivered in "International workshop on harmonic mappings and hyperbolic metrics (IWHMHM-09)" which was held at **IIT Madras, Chennai** during the period 10th to 19th December, 2009.
- delivered a Colloquium talk titled as "On concave univalent functions" delivered in the department of mathematics, **Indian Institute of Science, Bangalore** on 25 th February, 2010.

- Delivered a talk titled as "On extreme point conjectures for concave univalent functions" at ICM 2010 - Satellite Conference "International Workshop on Harmonic and Quasiconformal Mappings (HQM2010)" at **IIT, Madras** during August 09–17, 2010.
- Delivered a talk titled as "On concave univalent functions" at Ahlfors-Bers Colloquium which was held at **Rice University, Houston, TX, USA** during March 24–27, 2011.
- Presented a paper titled as "On concave univalent functions" at the conference "Harmonic and complex analysis and its applications" (HCAA-2012) which was held at **Tenerife, Canary Islands, Spain** during March 05–09, 2012.
- Delivered an invited talk titled as "Unbounded convex polygons, Blaschke products and concave univalent functions" at the International symposium "Geometric function theory and applications" which was held at **Tohoku University, Sendai, Japan** during September 10–14, 2013.
- Delivered an invited talk titled as "Inequalities for the coefficients of meromorphic starlike functions with non-zero pole" at the "International Symposium on Complex analysis and conformal geometry (ISCACG 2013)" at **IIT Indore** during December 28–30, 2013.
- Delivered an invited talk titled as "Close-to-convexity of the concave maps and their extreme points with respect to the structure of the Hornich space" at the "International Congress of Mathematicians (ICM 2014)" at **Seoul, Korea** during August 13–21, 2014.
- Delivered an invited talk titled as "Regions of variability for a class of analytic and locally univalent functions defined by subordination" at the "24th Annual Conference of Jammu Math. Soc." at **University of Jammu** during May 14–16, 2015.
- Attended an international conference titled as "Quasiweeeknd-II, ten years after" at the **University of Helsinki, Finland** during December 10–13, 2015.
- Delivered an invited talk "On neighbourhoods of univalent functions" in the "International conference on mathematical analysis and its applications" at **IIT Roorkee** during November 28– December 02, 2016.
- Delivered an invited talk "On Bohr's inequality" in the national workshop on "Planar harmonic mappings and quasiconformal mappings" at the **Central University of Rajasthan**, India during March 19– 23, 2018.
- Delivered an invited talk on "Quasiconformal extension of meromorphic functions with nonzero pole" in the international conference" Complex Analysis and its Applications (COMAN-2018)" at the **Branch of Kuban State University, Gelendzhik, Russia** during June 02– 09, 2018.

Other activities:

- I was an **Assistant Warden** of the **Azad Hall of Residence**, IIT Kharagpur (1-11-2017 to 31-12-2019).
- I am presently an **Associate of the Centre for Theoretical Studies**, IIT Kharagpur.
- I am a life member of the **Indian Mathematical Society**.
- I am a life member of the **Ramanujan Mathematical Society**.
- I am a life member of the **Society for special functions and their applications**.