

Sabiruddin Molla, PhD [Applied Mathematics]

Assistant Professor [Mathematics Method]
 Postgraduate Department of Education
 St. Xavier's College (Autonomous) Kolkata
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Research Interest: (i) Astrophysics & Cosmology;
 (ii) Mathematics Education [Pedagogy of Mathematics]

Teaching Experience: More than 7 years and 4 months.

Institute	Position held	Date of Joining	Date of Leaving
St. Xavier's College (Autonomous), Kolkata	Assistant Professor	03.01.2019	

Education:**I. Academic Details (Qualifications (Block-1)):**

Degree	College / University/ Institute	Subject	Year of Passing	Division
PhD	Jadavpur University	Astrophysics and Cosmology	2022	
M.Ed.	University of Calcutta [Alipore Campus]		2017	1 st
B.Ed.	University of Calcutta [Alipore Campus]	Mathematics method	2015	1 st
M.Sc.	University of Calcutta [Ballygunge Science College]	Pure Mathematics	2013	1 st
B.Sc.	University of Calcutta	Mathematics Honours	2011	1 st

II. Academic Details (Qualifications (Block-2)):

Sl. No.	Exam Passed	University/Institution	Year of passing	Subject
1	NET with JRF	CSIR	June 2016	Mathematical Science
3	JAM (AIR 186)	IIT	2010	Mathematics (MA)

Dissertation Details:

- (i) Visual Cryptography using Linear Algebra [M.Sc. dissertation]
- (ii) Exploring the college student's opinion to overcome Mathematics Anxiety at 10+2 level. [M.Ed. dissertation]

PhD Thesis: “Study of some Cosmological and Astrophysical phenomena in general relativity and modified theories of gravity.” submitted in January 2022 and defended in August 2022 under the guidance of Prof. Farook Rahaman.

Research Publications [Mathematics]:

Sl. No.	Title of the Paper published in the Journal & DOI	Year of Publication	Name of the publisher in case of a Journal	Status of the Journal
1	Gravitational Lensing, precession of periapsis and time delay due to wormhole in quintessence polytropic spacetime DOI: 10.1142/S021773231950264X	2019	Modern Physics Letters A, 34 (2019), No. 32, 1950264	World Scientific Publishing (International)
2	Gravitational collapse of an interacting vacuum energy density with an anisotropic fluid DOI: 10.1016/j.dark.2019.100291	2019	Physics of the Dark Universe, 24 (2019), 100291	ScienceDirect (ELSEVIER)
3	Strong lensing of a regular black hole with an electrodynamic source DOI : 10.1007/s10714-018-2375-3	2018	General Relativity and Gravitation, 50 (2018), No.5, 1-18	Springer
4	Dilaton-Axion Black Hole under the Solar System Tests DOI: 10.1016/j.newast.2020.101494	2021	New Astronomy, 83 (2021), 101494	ScienceDirect (ELSEVIER)
5	Solar system tests in constraining parameters of dyon black holes DOI: 10.1140/epjc/s10052-018-6442-4	19 November 2018	Eur. Phys. J. C, 78 (2018), No. 11, 1-6	Springer
6	Evolution of axial perturbations in space-time of a non-rotating uncharged primordial black hole https://doi.org/10.1007/s10714-024-03309-6	22 October 2024	<i>Gen Relativ Gravit</i> 56 , 130 (2024)	Springer

Research Publications [Education]:

[1] **Molla, S., Fatma, B., & Sultana, S.** (2025). A study on exploring the socio-economic factors affecting the standard of living of street dwellers. *Educational Administration: Theory and Practice*, 31(2), 399–405. <https://doi.org/10.53555/kuey.v31i2.10910>

[2] **Molla, S., & Sultana, S.** (2025). Reflective teaching: A transformative journey for educators. *International Journal of Creative Research Thoughts*, 13(9), b954–b966. <https://doi.org/10.56975/ijcrt.v13i9.293673>

[3] **Molla, S., & Sultana, S.** (2025). Exploring college students’ perspectives on strategies to overcome mathematics anxiety at the senior secondary level. *IJRAR – International Journal of Research and Analytical Reviews*, 12(4), 970–987. <https://doi.org/10.56975/ijrar.v12i4.321645>

[4] **Thakur, N., Roy, R., Ghosh, A., & Molla, S.** (2024). Beyond belief: A scientific inquiry into the myths and looms of Hindu rituals. *Educational Administration: Theory and Practice (Scopus Indexed)*, 30(5), 5670–5681. <https://doi.org/10.53555/kuey.v30i5.3393>

[5] Molla, S., Rashid, S., & Sultana, S. (2026). Mathematics anxiety: Understanding its concept, impact on secondary students' academic performance and career prospects, and effective intervention strategies. *Numeracy*, 19(2), Article 5. <https://doi.org/10.5038/1936-4660.19.2.1522>(Scopus indexed journal)

Conference Presentation:

[1] **Molla, S. (2022)**. Solar system tests in constraining parameters of dyon black holes (Paper presentation). 1st International Conference on Recent Advances in Mathematical Sciences and Interdisciplinary Areas (RAMSIA-2022), GLA University, Mathura (U.P.), India, Department of Mathematics.

[2] **Molla, S. (2020)**. Dilaton-axion Black Hole in the solar System. (Paper presentation). International Conference on Analysis, Algebra, combinatorics and their application (ICAACA 2020), Jadavpur University, Department of Mathematics.

[3] **Molla, S. (2018)**. Strong lensing of a regular black hole with an electrodynamic source (Paper presentation). International Conference on Mathematical Analysis and Application in Modeling (ICMAAM 2018), Jadavpur University, Department of Mathematics.

[4] **Molla, S. (2024)**. Grading System of Schools and Higher Education Institutions in India: A Comprehensive Overview (Paper presentation). International Conference on Multidisciplinary Research 3.0 (ICMR 3.0) organized by Tamilnadu Teacher Education University & Shree Ramakrishna B.T. College.

[5] **Molla, S. (2025, May 29)**. *A study on the impact of cultural prejudice on social dynamism in a multicultural classroom* [Paper presentation]. International Conference, Aliah University, Kolkata, India.

[6] **Molla, S. (2025, March 29)**. *A revisit of some popular conjectures in number theory through the lens of the Conjecture Quest Method (CQM): A pedagogical perspective* [Paper presentation]. International Conference (within country), Department of Mathematics, GLA University, Mathura, Uttar Pradesh, India.

[7] **Molla, S. (2026, March 27)**. *Concept mapping as a pedagogical tool in science and mathematics education* [Conference presentation]. 5th International Conference on Recent Advances in Mathematical Sciences and Interdisciplinary Areas (RAMSIA-26), GLA University, Mathura, India.

Book Publication:

[1] **Molla, S., & Sultana, S. (2026)**. *Introduction to classical algebra*. Techno World. ISBN 978-93-89314-73-1.

Book Chapter:

[1] **Molla, S. (2023)**. Mixed Methods Research: An Overview of Designs and Applications. In Thakur, N. and Saha, R. (Ed.). Iterative International Publishers, Michigan, USA, Volume 1, pp 8-25, ISBN 978-1-68576-441-8.

[2] **Molla, S. (2023).** Techno-Pedagogical Competencies: A Pre-requisite for 21st Century Teaching in Higher Education. In Swami Urjitananda, & R. Al Farabi (Eds.). *ICT@teaching*, (pp. 42-48). Ramakrishna Mission Sikshanamandira, ISBN: 978-93-95666-22-0.

[3] **Molla, S. (2024).** Grading system of schools and higher education institutions in India: A comprehensive overview. In P. C. Naga Subramani, V. Sharmila, A. Mondal, S. M. Ghosh, & S. R. Sarkar (Eds.), *Convergence of thought: An anthology of diverse research* (pp. 285–298). Red'Shine Publication Pvt. Ltd. <https://doi.org/10.25215/9358798203> (ISBN: 978-93-5879-820-3)

[4] **Molla, S., & Sultana, S. (2025).** Procedural mathematics and astronomy in ancient India: Geometry, number systems, infinity and algorithmic traditions from ritual practice to scientific modeling. In S. Das, J. K. Das, & S. Chakraborty (Eds.), *Life as basic science: An overview and prospects for the future* (Vol. 5, pp. 289–311). International Academic Publishing House (IAPH). <https://doi.org/10.52756/lbsopf.2025.v05.010>

[5] **Molla, S., & Sultana, S. (2026).** *Reducing mathematics anxiety through activity-based and technology-enhanced strategies: An experiential classroom demonstration*. In M. Yeasmin (Ed.), *Modern mathematics education: Pedagogy, technology and learner well-being*. South Asian Academic Publications. <https://doi.org/10.37022/saap/book.47>

Resource Person:

- Delivered a lecture on “**Techno-Pedagogical Competencies: A Pre-requisite for 21st Century Teaching in Higher Education**” held on January 19, 2023, at Ramakrishna Mission Sikshanamandira, Belur Math, Howrah, India.
- Delivered a lecture on ***Reducing Mathematics Anxiety Through Activity-Based and Technology-Enhanced Strategies: An Experiential Classroom Demonstration*** on March 30, 2026, at Aliah University, Park Circus Campus, Kolkata, India, as part of the Two-Day National Seminar Cum Workshop on “Mathematics for All”

Chair Person:

- Participated and chaired a session in the “International Conference on Multidisciplinary Research 3.0 (ICMR 3.0)” organized by Tamilnadu Teacher Education University & Shree Ramakrishna B.T. College and Organization of Multidisciplinary Research on 29th & 30th May, 2024.

Workshop:

- Participated the Teachers' Enrichment Workshop on **Groups and Geometry** from June 5 to June 10, 2023 in the department of Mathematics, St. Xavier's College, Kolkata.
- Participated in the Workshop on **Digitalization for Archives, Digital Preservation, and Metadata Standards** organized by the Centre for Studies in Social Sciences Calcutta (CSSSC) at Kolkata, West Bengal, from April 16–17, 2024.
- Participated in the Workshop on NEP-2020 entitled “**Good Academic Research Practices / Academic Research Integrity**” conducted by UGC-HRDC, Jadavpur University on 25th June 2022.
- Participated in the Workshop on NEP-2020 entitled “**Educational Framework for Global Citizenship in HE**” conducted by UGC-HRDC, Jadavpur University on 23rd June 2022.

- Participated in the Workshop on NEP-2020 entitled “**Multidisciplinarity**” conducted by UGC-HRDC, Jadavpur University on 20th June 2022.

Dissertation Guide:

Course	No. of students guided and completed	Academic Year
MA in Education	2	2025-2026
MA in Education	2	2024-2025
MA in Education	3	2023-2024
MA in Education	4	2022-2023