

- **Advanced Curriculum:** Quantum Field Theory I, Particle Physics, Astrophysics.
- **CGPA:** 4.86/6,

Presidency College, Kolkata, India

B.Sc., Physics (Major), Mathematics, Statistics (Minor) May 2007

OTHER
ACADEMIC
POSITIONS

Visiting Researcher

January 2010 to June 2010

University of Kolkata,

Topic: “Study of singlet Higgs couplings and its decay modes at LHC.”

Project Supervisor: Prof. Anirban Kundu.

AWARDS &
ACHIEVEMENTS

1. Associateship from **Indian Academy of Sciences**, Bangalore, 2022.
2. Associateship from **IUCAA**, Pune, India, 2022.
3. DST- INSPIRE Faculty Award for July, 2018 Application Batch from **Department of Science and Technology**, Govt. Of India.
4. **USA Department of Energy** summer fellowship for 2015, 2016.
5. Selected and awarded to attain summer school on “ Mathematical General Relativity” by **MSRI, University of California, Berkeley, USA**, 2012.

TEACHING
EXPERIENCE

• **Instructor:**

1. Course Instructor of **Electrodynamics & Plasma Physics**, M.Sc. Physics, Faculty of Sciences, SGT University.
2. Course Instructor of **Nuclear & Particle Physics (32C)**, **Quantum Mechanichs II (22C)**, **Quantum Mechanichs I (11C)**, M.Sc Physics, Department of Physics, Jamia Millia Islamia.
3. Invited instructor at the “**Cosmology: A New Addition To The Precision Physics** ” School organised by Department of Theoretical Phycis, University of Madras, India from 7th to 11th January, 2019.
4. Invited instructor in the Summer school, **Physics Training and Talent Search (PTTS’ 18)** held at National Institute of Technology, Surathkal, India.

5. Summer **Physics laboratory classes, Physics I & II tutorials** for undergraduates, 2014-2016 at University of Notre Dame.

6. Preparatory class for the **Physics subject GRE**, Summer, 2016 at University of Notre Dame.

• **Teaching Assistant:**

Graduate Level: Quantum Field Theory, General Theory of Relativity, Electricity & Magnetism, Electrodynamics, Cosmology.

Undergraduate Level: Cosmology, Thermal Physics, Electricity & Magnetism, Medical Physics.

MENTORING
EXPERIENCE

• **M.Sc Thesis Advisor:**

1. Jatin K. Jaiswal (M.Sc, JMI) Completed.
2. Amiy A. Upadhyay(M.Sc, JMI) Completed.
3. Hussain A. Khan (M.Sc, JMI) Completed.
4. Rittwik Maity (M.Sc, JMI) Completed.
5. Sayan Das (M.Sc, JMI) Completed.
6. Veera Vaishnavi Godithi (M.Sc., IISER, Pune) Ongoing
7. Anand Manusankar (M.Sc., CUSAT, Kerala) Ongoing.
8. K. Yapi (M.Sc., SVNIT, Surat) Ongoing.

• **M.Sc. Project**

1. Jayesh Jain (M.Sc., NIT, Surathkal) Completed.
2. Devanshu Sharma (M.Sc., SVNIT) Completed.
3. Tasneem Jareen (M.Sc, GBU) Ongoing.

JOURNAL
REVIEWER

Physical Review D(APS), European Physical Journal C, Physica Scripta (IOP Publications), Classical and Quantum Gravity(IOP Publications), Physics of the Dark Universe(Elsevier), Symmetry, Universe, Galaxies (MDPI).

JOURNAL
EDITOR

Editor of the special issue on Primordial Blackholes to be published in Galaxies.

RESEARCH
GRANT

- Co-PI of **Core Research Grant(CRG/ 2020/004347)** awarded by SERB, Department of Science and Technology. (Ongoing)
- Co-PI of **Core Research Grant(CRG/2022/004120)** awarded by SERB, Department of Science and Technology. (Ongoing)

COMPUTER
SKILLS

- **Cosmology Packages Used:** CAMB, CLASS, MONTEPYTHON, COSMOMC, MODECHORD, MULTINEST, POLYCHORD, MULTIMODECODE,

PUBLICATION LIST

Dr. Mayukh R. Gangopadhyay

[Publication Link](#)

I Journal Publications:

1. M. Correa, **M. R. Gangopadhyay**, N. Jaman, G. Mathews,
“Induced Gravitational Waves via Warm Natural Inflation
Accepted for publication in Phys. Rev. D, [arXiv: 2306.09641 [astro-ph.CO]].
2. **M. R. Gangopadhyay**, M. Sami, M. K. Sharma,
“Phantom dark energy as a natural selection of evolutionary processes à la genetic algorithm and cosmological tensions ”
Phys. Rev. D 108 (2023) 10, 103526, arXiv:2303.07301 [astro-ph.CO].
3. S. Bhattacharya, K. Dutta, **M. R. Gangopadhyay**, A. Maharana.
“ α -attractor inflation: Models and Predictions”
Phys. Rev. D 107 (2023) 10, 103530, arXiv: 2212.13363 [astro-ph.CO].
4. **M. R. Gangopadhyay**, H. A. Khan, Yogesh,
“A Case Study of Small Field Inflationary Dynamics in the Einstein-Gauss Bonnet Framework in the Light of GW170817”
Phys. Dark Univ. 40 (2023) 101177 [arXiv: 2205.15261 [astro-ph.CO]]
5. M. Correa, **M. R. Gangopadhyay**, N. Jaman, G. Mathews,
“Primordial Black-Hole Dark Matter via Warm Natural Inflation
Phys. Let. B 835 (2022) 137510 [arXiv: 2207. 10394 [gr-qc]].
6. **M. R. Gangopadhyay**, J. C. Jain, D. Sharma and Yogesh,
“Production of Primordial Black Holes via Single Field Inflation and Observational Constraints,”
Eur. Phys. J. C 82 (2022) 9, 849, [arXiv:2108.13839 [astro-ph.CO]].
7. S. Basak, S. Bhattacharya, **M. R. Gangopadhyay**, N. Jaman, R. Rangarajan, M. Sami,
The paradigm of warm quintessential inflation and spontaneous baryogenesis
JCAP 03 (2022) 03, 063, [arXiv: 2110.00607 [astro-ph.CO]]
8. S. A. Adil, **M. R. Gangopadhyay**, M. Sami, M. K. Sharma,
Late time acceleration due to generic modification of gravity and Hubble tension
Phys. Rev. D 104 (2021) 10, 103534, [arXiv:2106.03093v2 [astro-ph.CO]]

9. S.Bhattacharya, S. Das, K. Dutta, **M. R. Gangopadhyay**, R. Mahanta, A. Maharana,
“Non-thermal Hot Dark Matter from Inflaton /Moduli Decay: The Momentum Distribution and Relaxing the Cosmological Mass Bound”
Phys. Rev. D 103 (2021) 6, 063503, [arXiv: 2009.05987 [astro-ph.CO]]

10. **M. R. Gangopadhyay**, S. Myrzakul, M. Sami and M. K. Sharma,
“A paradigm of warm quintessential inflation and production of relic gravity waves”
Phys. Rev. D 103, 043505, arXiv:2011.09155 [astro-ph.CO].

11. S.Bhattacharya, K. Dutta, **M. R. Gangopadhyay**, A. Maharana, K. Singh,
“Fibre Inflation and Precision CMB Data”
Phys. Rev. D 102 (2020) 123531, [arXiv: 2003.05969 [astro-ph.CO]]

12. S.Bhattacharya, K. Das, **M. R. Gangopadhyay**,
“Probing the era of reheating for reconstructed inflationary potential in the RS II braneworld”
Class. Quant. Grav.37 (2020) 21, 215009, [arXiv: 1908.02542 [astro-ph.CO]].

13. R. Adhikari, **M. R. Gangopadhyay**, Yogesh,
“Power Law Plateau Inflation Potential In The RS II Braneworld Evading Swampland Conjecture”
Eur. Phys. J. C80 (2020) 9, 899, [arXiv: 2002.07061 [astro-ph.CO]].

14. E. O. Pozdeeva, **M. R. Gangopadhyay**, M. Sami, A. V. Toporensky, S. Y. Vernov,
“Inflation with a quartic potential in the framework of Einstein-Gauss-Bonnet gravity ”
Phys. Rev. D102 (2020) no.4, 043525, [arXiv: 2006.08027 [gr-qc].

15. R. Adhikari, **M. R. Gangopadhyay**, Yogesh,
“Lower tensor to scalar ratio in a SUGRA motivated inflationary potential”
Gravit. Cosmol. 28, 1 (2022), [arXiv: 1909.07217 [astro-ph.CO]]

16. S.Bhattacharya, **M. R. Gangopadhyay**.
“A study in non-canonical domain of Goldstone inflation.”
Phys. Rev. D101 (2020) 2, 023509 [arXiv: 1812.08141].

17. **M. R. Gangopadhyay**, G. J. Mathews, P. Olsen,
“Thermodynamic potential for quark-gluon plasma with finite quark masses and chemical potential ”,
J. Phys. Comm. 4 (2020) 2, 025004, [arXiv: 1710.11072].

18. **M. R. Gangopadhyay**, G. J. Mathews, K. Ichiki, T. Kajino,
“Explaining low- l Anomalies in the CMB Power Spectrum with Resonant Superstring Excitations during Inflation.”
Eur. Phys. J. C 78 (2018) 9, 733, [arXiv:1701.00577].

19. S. Bhattacharya, K. Dutta, **M. R. Gangopadhyay**, A. Maharana.
 “*Confronting Kähler moduli inflation with CMB data.*”
 Phys. Rev. D 97 (2018) 123533, [arXiv:1711.04807].

20. **M. R. Gangopadhyay**, G. J. Mathews.
 “*Constraints on Brane-world inflation from the CMB power spectrum: revisited.*”
 JCAP 1803(2018) no.03, 028, [arXiv:1611.05123].

21. M. Bastero-Gil, S. Bhattacharya, K. Dutta, **M. R. Gangopadhyay**.
 “*Constraining warm inflation with CMB Data.*”
 JCAP 1802(2018) no.02, 054, [arXiv:1710.10008].

22. N. Sasankan,, **M. R. Gangopadhyay**, G. J. Mathews, M. Kusakabe.
 “*Limits on Brane-world and Particle dark radiation from Big Bang Nucleosynthesis and the CMB.*”
 Int. J. Mod. Phys. E Vol. 26, No. 7 (2017), [arXiv:1706.03630].

23. N. Sasankan, **M. R. Gangopadhyay**, G. J. Mathews, M. Kusakabe.
 “*New observational limits to the dark radiation in brane cosmology.*”
 Phys. Rev. D 95,083516 (2017), [arXiv:1607.06858].

24. G. J. Mathews, **M. R. Gangopadhyay**, P. Garnavich , B. Rose , K. Ichiki, T. Kajino, D. Yamazaki.
 “*Constraints on the birth of the universe and origin of cosmic ‘Dark’ flow.*”
 Int. J. Mod. Phys. A 30 1545022 (2015), [arXiv:1508.01214].

25. G. J. Mathews, **M. R. Gangopadhyay**, K. Ichiki, T. Kajino.
 “*Possible evidence for Planck-scale resonant particle production during inflation from the CMB power spectrum.*”
 Phys. Rev. D 92, 123519 (2015), [arXiv:1504.06913].

II Manuscript Communicated:

1. D. Jang, **M. R. Gangopadhyay**, M. Cheoun, T. Kajino, M. Sami.
 “*Big Bang Nucleosynthesis constraints on the Energy-Momentum Squared Gravity: The T^2 model*”
 arXiv: 2402.01210 [astro-ph.CO]

2. **M. R. Gangopadhyay**, V. V. Godithi, K. Ichiki, R. Inui, T. Kajino, A. Manusankar, G. J. Mathews
 and Yogesh,
 “*Is NanoGRAV signals pointing towards resonant particle creation during inflation?*”
 arXiv:2309.03101 [astro-ph.CO].

3. S. Choudhury, **M. R. Gangopadhyay**, M. Sami,
 “*No-go for the formation of heavy mass Primordial Black Holes in Single Field Inflation,*”
 [arXiv:2301.10000 [astro-ph.CO]].

4. **M. R. Gangopadhyay**, N. Kumar, A. Mukherjee, M. K.Sharma,
“*Composite pseudo Nambu Goldstone Quintessence*”
[\[arXiv: 2205.15249 \[astro-ph.CO\]\]](#).

III Conference Proceedings:

1. G. J. Mathews, **M. R. Gangopadhyay**, K. Ichiki, T. Kajino.
“*Evidence for Planck-scale resonant particle production during inflation from the CMB power spectrum.*”
[Fourteenth Marcel Grossmann Proceedings, \[arXiv:1604.03174\]](#).
2. G. J. Mathews, **M. R. Gangopadhyay**, N. Sasankan, T. Kajino.
“*Big Bang Nucleosynthesis, the CMB, and the origin of matter and space-time.*”
[AIP Conf. Proceedings, OMEG17, \[arXiv:1711.04873\]](#).
3. G. J. Mathews, M. Kusakabe, **M. R. Gangopadhyay**, T. Kajino, N. Sasankan.
“*Primordial nucleosynthesis: constraints on birth of the universe.*”
[EPJ Web Conf. 184\(2018\) 01011](#).
4. S. Bhattacharya and **M. R. Gangopadhyay**,
“*Goldstone Inflation in Non-canonical Settings,*”
[Springer Proc. Phys. **261**, 343-349 \(2021\)](#)
5. **M. R. Gangopadhyay** and S. Bhattacharya,
“*Constraining Kähler Moduli Inflation from CMB Observations,*”
[Springer Proc. Phys. **261**, 315-322 \(2021\)](#)