

MD HASANUJJAMAN

Curriculum vitae

Basic informations

Name **Dr. Md Hasanujjaman.**
Designation **Assistant Professor in Physics.**
Qualification **M.Sc., Ph.D.**
Contact/Office details **Department of Physics, Acharya Prafulla Chandra Roy (APCR) Government College, Himachal Vihar, Matigara, Siliguri, Darjeeling-734010, West Bengal.**
Vidwan ID **522326.**
ORCID ID **0000-0002-4265-610X.**
e-mail id **jaman.mdh@gmail.com.**
Date of Joining **24-11-2015.**
W.B.E.S.
Date of Joining this college **10-01-2025.**
Previously served Institution **Darjeeling Government College, from 24-11-2015 to 09-01-2025.**

Academics

Ph.D. **University of Calcutta, 2019-2023, Work station: Variable Energy Cyclotron Centre (VECC, Kolkata), Thesis title: Effects of critical point on Quark Gluon Plasma.**
Masters (M.Sc.) **St. Xavier's College, Kolkata, University of Calcutta, with special emphasis on Astroparticle physics, 2012.**
Bachelors (B.Sc) **Surendranath College, University of Calcutta, Physics Honours, 2010.**
Higher Secondary **Chanchal Siddheswari Institution WBCHSE, 2007.**
Madhyamik **Chanchal Siddheswari Institution, WBBSE, 2005.**

Awards & fellowships

- CSIR-UGC NET Qualified National Eligibility Test (NET) June, 2013 and awarded Junior Research Fellowship (JRF, AIR-101) in Physical Science under the University Grants Commission (UGC) Fellowship Schemes.
- JEST Qualified Joint Entrance Screen Test (JEST-2013, AIR-191) and awarded Junior Research Fellowship (JRF) in Physical Science under the Department of Atomic Energy (DAE).
- GATE Qualified Graduate Aptitude Test for Engineering (GATE-2013, AIR-98 (98.67 percentile)).

Teaching

- Teaching experience 9+ years as on (01.01.2025).
- Course taught (1) Mechanics (Newtonian & Lagrangian), (2) Electrostatics (3) Heat & Thermodynamics, (4) Waves & Acoustics, (5) Quantum Mechanics, (6) Atomic & Nuclear Physics, (7) Particle Physics, (8) Astrophysics, (9) Python programming.

Research

- Research outcomes Studied the propagation of linear and nonlinear perturbations in quark gluon plasma created in a relativistic heavy-ion collision. The critical effects are substantial in the propagation of both types of perturbations, [click here to see the full thesis](#).
- Research Interest High Energy Nuclear Physics (Theoretical), Heavy-Ion Collision, Physics of Quark Gluon Plasma, QCD Phase diagram and the critical point, Spin-hydrodynamics, Fluctuations.

Publications

- 1, Nonlinear pulse dynamics in a magnetized and nonextensive Quark-Gluon Plasma, T. Bhattacharyya, and **M. Hasanujjaman**, [arXiv:2403.11630 \(2024\)](#).
- 2, Correlation of density fluctuation in a magnetized QCD matter near the critical end point, M. Rahaman, **M. Hasanujjaman**, A. Bhattacharyya, G. Sarwar, J-e Alam, [Eur. Phys. J. C 84, 279 \(2024\)](#).
- 3, Causality and stability of relativistic spin hydrodynamics, G. Sarwar, **M. Hasanujjaman**, J. R. Bhatt, H. Mishra, J-e Alam, [Phys. Rev. D 107, 054031 \(2023\)](#).
- 4, Role of slow out-of-equilibrium modes on the dynamic structure factor near the QCD critical point, G. Sarwar, **M. Hasanujjaman**, J-e Alam, [Phys. Rev. D 106, 074029 \(2022\)](#).
- 5, Nonlinear waves in a hot, viscous and non-extensive quark-gluon plasma, G. Sarwar, **M. Hasanujjaman**, T. Bhattacharyya, M. Rahaman, A. Bhattacharyya, J-e Alam, [Eur. Phys. J. C, 82, 189 \(2022\)](#).

- 6, *The fate of nonlinear perturbations near the QCD critical point*, G. Sarwar, **M. Hasanujjaman**, M. Rahaman, A. Bhattacharyya, J-e Alam, *Phys. Lett. B* 820, 136583 (2021).
- 7, *Dynamical spectral structure of density fluctuation near the QCD critical point*, **M. Hasanujjaman**, G. Sarwar, M. Rahaman, A. Bhattacharyya, J-e Alam, *Eur. Phys. J. A* 57, 283 (2021).
- 8, *Dispersion and suppression of sound near the QCD critical point*, **M. Hasanujjaman**, M. Rahaman, A. Bhattacharyya, J-e Alam, *Phys. Rev. C* 102, 034910 (2020).
- 9, *Initial conditions from the shadowed Glauber model*, S. Chatterjee, S. K. Singh, S. Ghosh, **M. Hasanujjaman**, S. Sarkar, J-e Alam, *Phys. Lett. B* 758, 269-273 (2016).

Conference Proceedings

- 1, *The study of propagation of nonlinear wave in QGP: a possible tool to distinguish the extensive and non-extensive thermodynamic background*, **M. Hasanujjaman**, G. Sarwar, M. Rahaman, A. Bhattacharyya, J. Alam, 65th DAE BRNS Symposium on nuclear physics, 636-637, vol: 65, pages: 636-639, ISBN: 818372084-6, 1-5 December, 2021.
- 2, *Nonlinear waves in search for QCD critical Point*, G. Sarwar, **M. Hasanujjaman**, M. Rahaman, A. Bhattacharyya, J. Alam, 65th DAE BRNS Symposium on nuclear physics, 638-639, vol: 65, pages: 638-639, ISBN: 818372084-6, 1-5 December, 2021.
- 3, *Initial Condition dependence of hydrodynamic flow of Quark Gluon Plasma*, **M. Hasanujjaman**, S. K. Singh, S. Ghosh, S. Chatterjee, G. Sarwar, 65th DAE BRNS Symposium on nuclear physics, 808-809, vol: 60, pages: 808-809, ISBN: 81-8372-077-3, 7-11 December, 2015.
- 4, *Cold Nuclear matter effects on the correlation between eccentricity and multiplicity*, S. K. Singh, S. Chatterjee, **M. Hasanujjaman**, S. Ghosh, J. Alam, DAE Symp. Nucl. Phys. 60 (2015) 804-805, vol: 60, pages: 804-805, ISBN: 81-8372-077-3, 7-11 December, 2015.
- 5, *Nucleon shadowing in Glauber model*, S. Chatterjee, S. Ghosh, S. K. Singh, **M. Hasanujjaman**, J. Alam, Acta Phys. Polon. Supp. 197, Vol-9, No-2 (2016), PL ISSN 1509-5770, 3-7 November, 2015.

Talks & conferences

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| India-JINR Meet- 2023 | Critical effects on the evolution of Quark Gluon Plasma , India-JINR workshop on elementary particle and nuclear physics, and condensed matter research 2023, Oct 16- 19, 2023, Russia, (Talk online), click here for slides . |
| CPOD-2022 | Correlation of fluctuation with parametric slow modes: a signature of the QCD critical point? , Critical Point and Onset of Deconfinement 2022, Nov 28-Dec 02, 2022, Europe, (Talk online), click here for slides . |

- ATHIC-2021 **Suppressed flow harmonics: a signature of the QCD critical point?**, 8th The Asian Triangle Heavy-ion Conference (ATHIC 2021), Inha University, Incheon, South Korea , 05 -09 November, 2021 (Talk online), [click here for slides](#).
- DAE Symposium-2021 **The study of the propagation of nonlinear waves in QGP: a possible tool to distinguish the extensive and non-extensive thermodynamic background**, *65th DAE BRNS Symposium on nuclear physics 01-05 December, 2021 (Talk online)*.

Details regarding participation in FIP/OP/RC

- OP Participated in the UGC sponsored Orientation Course (online) organized by the UGC-HRDC, Mizoram University, 28.07.2020 to 17.08.2020.
- RC Participated in the UGC sponsored online Refresher Course in “Teacher Education” organized by the UGC-HRDC, Aligarh Muslim University, 21.08.2021 to 04.09.2021.
- RC Participated in the UGC sponsored online Refresher Course on ‘Ecology and Environmental Sciences’ organized by Malaaviya Mission Teacher Training Centre (MMTTC) Maulana Azad National Urdu University, Hyderabad, 16.01.2024 to 30.01.2024.
- STC Participated in the UGC sponsored online Short-term course on ‘NEP 2020 ORIENTATION & SENSITIZATION PROGRAMME’ by Malaaviya Mission Teacher Training Centre (MMTTC) Maulana Azad National Urdu University, Hyderabad, 18.03.2024 to 27.03.2024.

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