

Publications in Journals – 2025

1. Shabir Dar, Soumik Bhattacharya, S. Bhattacharyya, G. H. Bhat, S. Jehangir, J. A. Sheikh, R. Banik, S. Nandi, G. Mukherjee, Sajad Ali, S. Chakraborty, S. Chatterjee, S. Das, S. Das Gupta, A. Dhal, S. S. Ghugre, A. Goswami, D. Mondal, S. Mukhopadhyay, S. Pal, D. Pandit, R. Raut, P. Ray, “Coexistence of single-particle and collective states in ^{116}Sb ”, *Physical Review C* 111 (2025) 14328
2. Ram Kumar Paul, R. Bhattacharjee, S. Bitragunta, A. Das, A. Banerjee, P. Dhara, T. Samanta and S. Pal, “Residual analysis based neutron-gamma pulses segregation of liquid scintillator detector”, *Journal of Instrumentation* 20 (2025) P01015
3. R. Mondal Saha, K. Banerjee, A. Chakraborty, N. Gayathri, Souvik Jana, Satya Samiran Nayak, G. R. Umapathy, Anirban Basak, S. Bhattacharyya, R. Shil, Satyajit Hazra, Saif Ahmad Khan, “Preparation of selenium target using sedimentation method for in-beam gamma-ray spectroscopic measurement”, *Nuclear Instruments and Methods in Physics Research Section A* 1074 (2025) 170288
4. Ekata Nandy, Subhasis Chattopadhyay, “Searching for initial state fluctuations in heavy ion collisions at FAIR energy using principal component analysis”, *The European Physical Journal A* 61 (2025) 39
5. Akash Mitra, Sanku Paul, Shashi C. L. Srivastava, “Quantum criticality and universality in the stationary state of the long-range Kitaev model”, *Physical Review B* 111 (2025) 104308
6. A. Pal, P. Behre, M. K. Jha, S. Basak, Devesh Kumar, S.S. Alam, S. Roy, J. -M. Regis, T. Bhattacharjee and T. Bhattacharjee, “Design of GAMMA-GAMMA fast timing setup VENTURE-2.0 with CeBr_3 detectors”, *Journal of Instrumentation* 20 (2025) P02022
7. Sujan Kumar Roy, Gargi Chaudhuri, “I-C-Q relations for rapidly rotating stable hybrid stars”, *Astroparticle Physics* 170 (2025) 103108

8. S. Basak, D. Kumar, T. Bhattacharjee, I. Dedes, J. Dudek, A. Pal , S. S. Alam, A. Saha , A. K. Sikdar, J. Nandi, Shabir Dar, A. Baran, A. Gaamouci, D. Rouvel, S. Samanta, S. Chatterjee, R. Raut, S. S. Ghugre, A. Adhikari, Y. Sapkota, R. Rahaman, Ananya Das, A. Gupta, A. Bisoi, S. Sharma, S. Das, A. Bhattacharyya, P. Das, U. Datta, I. Ray, J. Yang, D. Curien, and G. Duchêne, “New evidence of interplay between tetrahedral and octahedral symmetries and symmetry breaking: Exotic rotational bands in ^{152}Sm ”, *Physical Review C* 111 (2025) 34319
9. D. Sarkar, S. Das, V. Taneja, M. Samanta, K. Jagadish, A. Das, M. Bhakar, S. Perumal, G. Sheet, Dirtha Sanyal, K. Pal, N. Ravishankar, U. V. Waghmare, and K. Biswas, “Glassy Thermal Transport Triggers Ultra-High Thermoelectric Performance in GeTe ”, *Advanced Materials* 37 (2025) 2417561
10. J. Mukherjee, D. Bhowmik, S. Bhowmick, Prasanta Karmakar, S. Bhattacharjee, “Low energy ion-beam mediated tailoring of structural, optical, and electrical properties of ITO films”, *Surface & Interface* 59 (2025) 105973
11. Arpan Arora, Ankur Kumar, Argha Dutta, N. Gayathri, Paramita Mukherjee, Suhrit Mula, “Degradation of Fe-Ni based ODS alloys in extreme environmental conditions”, *Materials Today Communications* 46 (2025) 112501
12. Uttiyoarnab Saha, Santu Dey, Chethan Konkati, Apu Sarkar, Subarna Datta, Argha Dutta, Soumita Chakraborty, Ankur Chauhan, N. Gayathri, P. Mukherjee, “Enhanced ductility in proton-irradiated deformed molybdenum – Gaining insights from experiments and molecular dynamics simulations”, *International Journal of Refractory Metals and Hard Materials* 128 (2025) 107090
13. Atanu Dutta, Animesh Goswami, Malay Kanti Dey, Jayanta Debnath, Uttam Bhunia, Arup Bandyopadhyay, “Magnetic field optimisation and study of beam dynamics in 50 MeV compact H-cyclotron”, *Journal of Instrumentation* 20 (2025) P03023
14. Suman Pal, Soumen Podder, and Gargi Chaudhuri, “Is the Central Compact Object in HESS J1731-347 a Hybrid Star with a Quark Core? An Analysis with the Constant Speed of Sound Parameterization”, *The Astrophysical Journal* 983 (2025) 24
15. Trijit Kumar Maiti, “Exergy evaluation through experimental validation of a helium liquefier model under various off-design mixed mode operations with and without LN_2 pre-cooling”, *Fusion Engineering and Design* 215 (2025) 114966

16. T.K. Rana, Samir Kundu, S. Manna, K. Banerjee, P. Karmakar, T.K. Ghosh, G. Mukherjee, A. Sen, R. Pandey, P. Pant, Pratap Roy, R. Shil, S.S. Nayak, K. Rani, K. Atreya, D. Paul, R. Santra, A. Sultana, S. Pal, S. Basu, Deepak Pandit, S. Mukhopadhyay, C. Bhattacharya, J. Debnath, U. Bhunia, M.K. Dey, “First in-beam experiment in K500 superconducting cyclotron at VECC”, Nuclear Physics A 1060 (2025) 123101
17. Sandipan Dawn, A.K. Bakshi, P.K. Mohanty, Sujoy Chatterjee, B.K. Sahoo, B.K. Sapra, “Characterizing interplanetary magnetic field fluctuations at arctic using cosmic ray secondaries—An approach with machine learning”, Astroparticle Physics 167 (2025) 103087
18. S. Mallik, “Isospin effect on the liquid-gas phase transition for finite nuclei”, Nuclear Physics A 1055 (2025) 123009
19. A. Banerjee, K. Banerjee, R. Shil, Pratap Roy, P. Pant, C. Basu, G. Mukherjee, T.K. Ghosh, “The FRENA accelerator and its beam energy calibration”, Nuclear Instruments and Methods in Physics Research Section A 1072 (2025) 170179
20. Rahul Arya, Rini Paulose, Abhijit Bijanu, Varsha Agrawal, Rahitashya Shil, Deepti Mishra, Kaushik Banerjee, Sujoy Chatterjee, Sarmishtha Bhattacharyya, Abhay Bhisikar, Paparao Mondli, Upendra Singh, Jyoti Pendam, Shabi Thankaraj Salammal, “Inherent role of density on the gamma ray attenuation characteristics of red mud based shield”, Radiation Physics and Chemistry 234 (2025) 112757
21. S. Basu, G. Mukherjee, S. Nandi, S.S. Nayak, S. Bhattacharyya, S. Chakraborty, Soumik Bhattacharya, S. Pal, Shabir Dar, Sneha Das, S. Basak, D. Kumar, Pratap Roy, D. Paul, K. Banerjee, S. Manna, Samir Kundu, T.K. Rana, R. Pandey, S. Samanta, S. Ali, “Rotational band based on $\pi f_{7/2}$ orbital in ^{55}Mn ”, Nuclear Physics A 1059 (2025) 123092
22. Sk Wasim Raja, R. Acharya, A. Saha, “Experimental measurements and theoretical calculations of excitation functions of $^{103}\text{Rh}(\alpha, xn)^{106}\text{m}$, ^{105}g , ^{104}gAg and $^{103}\text{Rh}(\alpha, \alpha xn)^{101}\text{m}$, ^{102}gRh reactions up to 40 MeV”, Nuclear Physics A 1053 (2025) 122974
23. N. Susshma, R. Gowrishankar, S. Deepa, K. Vijay Sai, S. Chatterjee, A. Sharma, S.S. Ghugre, Shabir Dar, S. Das, S. Basu, S. Nandi, S. Bhattacharya, S.S. Nayak, G. Mukherjee, S. Bhattacharyya, R.P. Singh, G.H. Bhat, J.A. Sheikh, S. Jehangir, R. Raut, “Shape transition and development of triaxiality in ^{154}Tb ”, Nuclear Physics A 1055 (2025) 123019

24. Sahab Singh, D. Choudhury, B. Maheshwari, R. Roy, K. Yadav, R. Palit, B. Das, P. Dey, A. Kundu, Md. S. R. Laskar, D. Negi, V. Malik, S. Jadhav, B. S. Naidu, A. V. Thomas, D. L. Balabanski, A. Dhal, S. Bhattacharya, A. K. Singh, S. Bhattacharyya, S. Nag, “Competition between the neutron-proton pair break-ups delineating the level structure of ^{202}Po ”, *Physical Review C* 111 (2025) 34326
25. ALICE Collaboration, “Addendum: Dielectron production in proton-proton and proton-lead collisions at $\sqrt{s_{\text{NN}}}=5.02\text{TeV}$ ”, *Physical Review C* 111 (2025) 24905
26. ALICE Collaboration, “Probing Strangeness Hadronization with Event-by-Event Production of Multistrange Hadrons”, *Physical Review Letters* 134 (2025) 22303
27. ALICE Collaboration, “Particle production as a function of charged-particle flatnecity in pp collisions at $\sqrt{s}=13\text{ TeV}$ ”, *Physical Review D* 111 (2025) 12010
28. Sushant K. Singh, Radoslaw Ryblewski, and Wojciech Florkowski, “Spin dynamics with realistic hydrodynamic background for relativistic heavy-ion collisions”, *Physical Review C* 111 (2025) 24907
29. STAR Collaboration, “Energy dependence of polarized $\gamma\gamma\rightarrow e^+e^-$ in peripheral Au+Au collisions at $\sqrt{s_{\text{NN}}}=54.4$ and 200 GeV with the STAR experiment at RHIC”, *Physical Review C* 111 (2025) 14909
30. STAR Collaboration, “Measurement of directed flow in Au+Au collisions at $\sqrt{s_{\text{NN}}}=19.6$ and 27 GeV with the STAR event plane detector”, *Physical Review C* 111 (2025) 14906
31. ALICE Collaboration, “First Measurement of $A=4$ Hypernuclei and Antihypernuclei at the LHC”, *Physical Review Letters* 134 (2025) 162301
32. Apar Agarwal, Souvik Chattopadhyay, Pawan Kumar Sharma, Anand Kumar Dubey, Jogender Saini, Vikas Singhal, Vinod Negi, Ekata Nandy, Chandrasekhar Ghosh, David Emschermann, Zubayer Ahammed and Subhasis Chattopadhyay, “Testing a large size triple GEM detector for the first station of the CBM-Muon Chambers with a high-intensity gamma source at GIF++ under large-area illumination”, *Journal of Instrumentation* 20 (2025) P04022
33. Snigdha Ghosh, Nilanjan choudhuri, Pradip Roy, Sourav Sarkar, “Shear and bulk viscous coefficients of a hot and chirally imbalanced quark matter using NJL model”, *Physical Review D* 111 (2025) 76012

34. S. F. Dellmann , J. Glorius , Yu. A. Litvinov , R. Reifarh L. Varga M. Aliotta , F. Amjad , K. Blaum , L. Bott, C. Brandau , B. Brückner , C. G. Bruno , R.-J. Chen T. Davinson , T. Dickel I. Dillmann D. Dmytriev, P. Erbacher , O. Forstner, D. Freire-Fernández H. Geissel K. Göbel , C. J. Griffin , R. E. Grisenti, A. Gumberidze , E. Haettner , S. Hagmann , T. Heftrich , M. Heil , R. Heß , P.-M. Hillenbrand , C. Hornung, R. Joseph , B. Jurado, E. Kazanseva, K. Khasawneh , R. Knöbel, D. Kostyleva , C. Kozhuharov , I. Kulikov , N. Kuzminchuk, D. Kurtulgil, C. Langer , G. Leckenby , C. Lederer-Woods, M. Lestinsky , S. Litvinov , B. Löher, B. Lorentz , E. Lorenz , J. Marsh, E. Menz, T. Morgenroth, I. Mukha , N. Petridis , U. Popp, A. Psaltis , S. Purushothaman , E. Rocco, P. Roy M. S. Sanjari C. Scheidenberger, M. Sguazzin, R. S. Sidhu , U. Spillmann, M. Steck, T. Stöhlker A. Surzhykov J. A. Swartz Y. Tanaka, H. Törnqvist D. Vescovi M. Volknaadt, H. Weick , M. Weigand, P. J. Woods, T. Yamaguchi , J. Zhao, “First Proton-Induced Cross Sections on a Stored Rare Ion Beam: Measurement of $^{118}\text{Te}(p,\gamma)$ for Explosive Nucleosynthesis”, Physical Review Letters 134 (2025) 142701
35. Souvik Chattopadhyay, Apar Agarwal, Ekata Nandy, Jogender Saini, Anand Kumar Dubey, Shuaib Ahmad Khan, Subhasis Chattopadhyay and Zubayer Ahammed, “Performance of a real-size, low resistivity resistive plate chamber at GIF++ Using self-trigger electronics for the Muon Chamber of the CBM Experiment”, Journal of Instrumentation 20 (2025) P03009
36. Arun Kumar Yadav, Partha Pratim Bhaduri & Subhasis Chattopadhyay , “Reexamination of eccentricity scaling of elliptic flow and incomplete thermalization scenario in heavy-ion collisions at energies available at CERN large hadron collider”, The European Physical Journal C 85 (2025) 1
37. Sourav Kanti Giri, Partha Pratim Bhaduri, Biswarup Paul & Santosh K. Das, “A systematic study of initial state quark energy loss in fixed target proton nucleus collisions”, The European Physical Journal C 85 (2025) 1
38. INDRA-FAZIA Collaboration, “Model-independent measurement of isospin diffusion in Ni-Ni systems at intermediate energy”, Physical Review C 111 (2025) 44601
39. ALICE Collaboration, “Measurement of ω meson production in pp collisions at $\sqrt{s} = 13$ TeV”, Journal of High Energy Physics 2025 (2025) 1
40. ALICE Collaboration, “Medium-induced modification of groomed and ungroomed jet mass and angularities in Pb–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV”, Physics Letters B 864 (2025) 139409

41. ALICE Collaboration, “Multimuons in cosmic-ray events as seen in ALICE at the LHC”, *Journal of Cosmology and Astroparticle Physics* 2025 (2025) 1
42. ALICE Collaboration, “First observation of strange baryon enhancement with effective energy in pp collisions at the LHC”, *Journal of High Energy Physics* 2025 (2025) 1
43. ALICE Collaboration, “Multiplicity-dependent jet modification from di-hadron correlations in pp collisions at $\sqrt{s} = 13$ TeV”, *Journal of High Energy Physics* 2025 (2025) 1
44. ALICE Collaboration, “Rapidity dependence of antideuteron coalescence in pp collisions at $\sqrt{s} = 13$ TeV with ALICE”, *Physics Letters B* 860 (2025) 139191
45. Debasis Atta & D. N. Basu, “Viscous damping of r-modes and emission of gravitational waves”, *Pramana* 99 (2025) 1
46. ALICE Collaboration, “Measurement of the inclusive isolated-photon production cross section in pp collisions at $\sqrt{s} = 13$ TeV”, *The European Physical Journal C* 85 (2025) 1
47. ALICE Collaboration, “Measurement of Λ production in Pb–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV”, *Physics Letters B* 860 (2025) 139066
48. ALICE Collaboration, “Investigating Λ baryon production in p-Pb collisions in jets and the underlying event using angular correlations”, *Physical Review C* 111 (2025) 15201
49. Mahammad Sabir Ali, Deeptak Biswas, Amaresh Jaiswal & Sushant K. Singh, “Hadron momentum spectra from analytical solutions of relativistic hydrodynamics”, *The European Physical Journal C* 85 (2025) 1
50. T.K. Rana, Deepak Pandit, S. Manna, Samir Kundu, K. Banerjee, A. Sen, R. Pandey, G. Mukherjee, T.K. Ghosh, S.S. Nayak, R. Shil, P. Karmakar, K. Atreya, K. Rani, D. Paul, R. Santra, A. Sultana, S. Basu, S. Pal, S. Sadhukhan, Debasish Mondal, S. Mukhopadhyay, Srijit Bhattacharya, Surajit Pal, P. Pant, Pratap Roy, Sk M. Ali, S. Mondal, A. De, Balaram Dey, R. Datta, S. Bhattacharya, C. Bhattacharya, “Measurement of radiative decay width of the Hoyle state of ^{12}C via $^{12}\text{C}(p, p')^{12}\text{C}$ reaction”, *Nuclear Physics A* 1060 (2025) 123133
51. S. Dalal, K. Banerjee, S. Chatterjee, P. Roy, A.S. Roy, R. Shill, Sandipan Dawn, “Comparison of various pulse height unfolding methods used in fast neutron spectroscopy”, *Journal of Instrumentation* 20 (2025) P05006

52. Uttam Bhunia, Ankur Agarwal, Chiranjib Das, Chinmay Nandi, Santosh Mishra, Prosenjit Debnath, Sabyasachi Pathak, Siddharth V. Pratihast, Anindya Roy, Jayanta Debnath, Malay Kanti Dey, Anjan Dutta Gupta, Sumit Som, “Development of an arc discharged multicusp negative hydrogen ion source for medical cyclotrons”, Review of Scientific Instruments 96 (2025) 43310
53. S. Banerjee, S. Bhattacharyya, S. Chakraborty, Soumik Bhattacharya, G. Mukherjee, S.S. Nayak, Snigdha Pal, Suchorita Paul, A. Pal, D. Kumar, R. Banik, S. Panwar, S. Basu, S. Das Gupta, R. Raut, S.S. Ghugre, Pankaj K. Giri, A. Sharma, S. Kundu, C. Majumder, A. Karmakar, S. Rajbanshi, S. Ganguly, H. Rahaman, “Decay of ^{131}La ”, Nuclear Physics A 1061 (2025) 123144
54. Punit Dubey, Mahima Upadhyay, Mahesh Choudhary, Namrata Singh, Shweta Singh, A. Kumar, N. Saneesh, Mohit Kumar, Rishabh Prajapati, K. S. Golda, Akhil Jhingan, P. Sugathan, Jhilaam Sadhukhan, Raghav Aggarwal and Kiran, “New experimental insights about dissipation near shell closure”, Physical review C 12 (2025) L011602
55. VECC as collaborator Institution of ALICE, “Proton emission in ultraperipheral Pb-Pb collisions at $\sqrt{s_{\text{NN}}}=5.02\text{ TeV}$ ”, Physical review C 111 (2025) 54906
56. VECC as collaborator Institution of ALICE, “First measurement of $\text{Ds}1(1^+)$ (2536) $^+$ and $\text{D}^*2(2^+)$ (2573) $^+$ production in proton-proton collisions at $\sqrt{s}=13\text{ TeV}$ at the LHC”, Physical review D 111 (2025) 112005
57. VECC as collaborator Institution of ALICE, “Higher-order symmetry plane correlations in Pb-Pb collisions at $\sqrt{s_{\text{NN}}}=5.02\text{ TeV}$ ”, Physical review C 111 (2025) 64913
58. VECC as collaborator Institution of ALICE, “Search for Quasiparticle Scattering in the Quark-Gluon Plasma with Jet Splittings in pp and Pb-Pb Collisions at $\sqrt{s_{\text{NN}}}=5.02\text{ TeV}$ ”, Physical review Letters 135 (2025) 31901
59. S. Rajbanshi, R. Palit, Habibur Rahaman, G. Manna, Sajad Ali, S. Chakraborty, G. H. Bhat, S. Jehangir, J. A. Sheikh, F. S. Babra, R. Banik, S. Bhattacharya, S. Bhattacharyya, P. Dey, Md. S. R. Laskar, G. Mukherjee, S. Nandi, H. Pai, Rajkumar Santra, and T. Trivedi, “Conclusive evidence of a two-neutron multiphonon transverse wobbling mode in ^{82}Kr ”, Physical review C 111 (2025) L061301

60. S. Manna, Pratap Roy, T. K. Rana, S. Kundu, R. Pandey, K. Banerjee, A. Sen, T. K. Ghosh, G. Mukherjee, S. Mukhopadhyay, P. Karmakar, D. Paul, S. Dalal, and C. Bhattacharya, "Effect of N/Z asymmetry on pre-equilibrium and equilibrium emission of light charged particles", *Physical review C* 112 (2025) 14613
61. A. Sultana, A. Sen, T. K. Ghosh, D. Paul, K. Atreya, K. Banerjee, Jhila Sadhukhan, Gourab Banerjee, D. Mondal, G. Mukherjee, P. Karmakar, R. Shil, R. Pandey, Samir Kundu, S. Mukhopadhyay, S. Manna, S. S. Nayak, S. Basu, Shabir Dar, T. K. Rana, and C. Bhattacharya, "Multimodal fission of ^{201}Tl ", *Physical review C* 112 (2025) 14617 2025
62. VECC as collaborator Institution of STAR, "Measurement of In-Medium Jet Modification Using Direct Photon + Jet and π^0 + Jet Correlations in p+p and Central Au+Au Collisions at $\sqrt{s_{NN}}=200$ GeV", *Physical review Letters* 134 (2025) 232301
63. VECC as collaborator Institution of STAR, "Semi-inclusive direct photon + jet and π^0 +jet correlations measured in p + p and central Au+Au collisions at $\sqrt{s_{NN}}=200$ GeV", *Physical review C* 111 (2025) 64907
64. VECC as collaborator Institution of STAR, "Precision measurement of the longitudinal double-spin asymmetry for dijet production at intermediate pseudorapidity in polarized pp collisions at $\sqrt{s_{NN}}=200$ GeV", *Physical review D* 112 (2025) 12003
65. D. Banerjee, Snehamoyee Hazra, Subarna Datta, Jipin Peter, Raju K. Biswas, Barnali Ghosh, "The effect of Nd-doping on polymorphic behavior and dielectric properties of HfO_2 : An experimental study and DFT calculation", *Journal of Alloys and Compounds* 1029 (2025) 180724