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List of Publications

30. *Investigation of direct nuclear reactions in a storage ring using in-ring detection*;
J. C. Zamora, T. Aumann, S. Bagchi *et al.*, *Physical Review C* **110**, 044614 (2024). [Journal Link](#);
29. *Effect of ground-state deformation on the isoscalar giant monopole resonance and the first observation of overtones of the isoscalar giant quadrupole resonance in rare-Earth Nd isotopes*;
M. Abdullah, S. Bagchi *et al.*, *Physics Letters B* **855**, 138852 (2024). [Journal Link](#); [arXiv Link](#)
28. *Broken seniority symmetry in the semimagic proton mid-shell nucleus ^{95}Rh* ;
B. Das *et al.*, *Physical Review Research* **6**, L022038 (2024). [Journal Link](#)
27. *A new approach for deducing rms proton radii from charge-changing reactions of neutron-rich nuclei and the reaction-target dependence*;
J. Zhang *et al.*, *Science Bulletin* **69**, 1647 (2024). [Journal Link](#); [arXiv Link](#)
26. *Increasing the rate capability for the cryogenic stopping cell of the FRS Ion Catcher*;
J. W. Zhao *et al.*, *Nuclear Instruments and Methods in Physics Research Section B* **547**, 165175 (2024). [Journal Link](#); [arXiv Link](#)
25. *Accurate simultaneous lead stopping power and charge-state measurements in gases and solids: Benchmark data for basic atomic theory and nuclear applications*;
S. Ishikawa *et al.*, *Physics Letters B* **846**, 138220 (2023). [Journal Link](#)
24. *Matter radius of the doubly-magic ^{56}Ni measured in a storage ring*;
M. von Schmid *et al.*, *The European Physical Journal A* **59**(4), 83 (2023). [Journal Link](#)
23. *Studying Gamow-Teller transitions and the assignment of isomeric and ground states at $N = 50$* ;
A. Mollaebrahimi *et al.*, *Physics Letters B* **839**, 127833 (2023). [Journal Link](#); [arXiv Link](#)
22. *Proton Distribution Radii of $^{16-24}\text{O}$: Signatures of New Shell Closures and Neutron Skin*;
S. Kaur *et al.*, *Physical Review Letters* **129**, 142502 (2022). [Journal Link](#); [arXiv Link](#)
21. *Charge-changing cross sections for $^{42-51}\text{Ca}$ and effect of charged-particle evaporation induced by neutron-removal reactions*;

- M. Tanaka *et al.*, *Physical Review C* **106**, 014617 (2022). [Journal Link](#); [arXiv Link](#)
20. *First coupling of the FRS particle identification and the FRS-Ion Catcher data acquisition systems: The case of ^{109}In* ;
A. Spataru *et al.*, *Nuclear Inst. and Methods in Physics Research B*, **522**, 32 - 37 (2022). [Journal Link](#)
19. *Experimental investigation of ground-state properties of ^7H with transfer reactions*;
M. Caamaño *et al.*, *Physics Letters B* **829**, 137067 (2022). [Journal Link](#); [arXiv Link](#)
18. *Nature of seniority symmetry breaking in the semimagic nucleus ^{94}Ru* ;
B. Das *et al.*, *Physical Review C* **105**, L031304 (2022). [Journal Link](#)
17. *Coulomb and nuclear excitations of ^{70}Zn and ^{68}Ni at intermediate energy*;
S. Calinescu *et al.*, *Physical Review C* **104**, 034318 (2021). [Journal Link](#); [arXiv Link](#)
16. *Radioactive Beams for Image-Guided Particle Therapy: The BARB Experiment at GSI*;
D. Boscolo *et al.*, *Frontiers in Oncology* **11**, 737050 (2021). [Journal Link](#)
15. *Mass measurements of As, Se, and Br nuclei, and their implication on the proton-neutron interaction strength toward the $N = Z$ line*;
I. Mardor *et al.*, *Physical Review C* **103**, 034319 (2021). [Journal Link](#); [arXiv Link](#)
14. *Signature of a possible α -cluster state in $N = Z$ doubly-magic ^{56}Ni* ;
S. Bagchi *et al.*, *The European Physical Journal* **56**, 290 (2020). [Journal Link](#); [arXiv Link](#)
13. *Two-neutron halo is unveiled in ^{29}F* ;
S. Bagchi *et al.*, *Physical Review Letters* **124**, 222504 (2020). [Journal Link](#); [arXiv Link](#)
12. *Mass and Half-Life Measurements of Neutron-Deficient Iodine Isotopes*;
S.A.S Andrés *et al.*, *The European Physical Journal* **56**, 143 (2020). [Journal Link](#)
11. *Swelling of Doubly Magic ^{48}Ca core in Ca isotopes beyond $N = 28$* ;
M. Tanaka *et al.*, *Physical Review Letters* **124**, 102501 (2020). [Journal Link](#); [arXiv Link](#)
10. *Isomer studies in the vicinity of the doubly-magic nucleus ^{100}Sn : Observation of a new low-lying isomeric state in ^{97}Ag* ;
C. Hornung *et al.*, *Physics Letters B* **802**, 135200 (2020). [Journal Link](#)
9. *Compression-mode resonances in the calcium isotopes and implications for the asymmetry term in nuclear incompressibility*;

- K.B. Howard *et al.*, *Physics Letters B* **801**, 135185 (2020). [Journal Link](#); [arXiv Link](#)
8. *A Novel Method for the Measurement of Half-Lives and Decay Branching Ratios of Exotic Nuclei*;
I. Miskun *et al.*, *The European Physical Journal A* **55**, 148 (2019). [Journal Link](#); [arXiv Link](#)
7. *High-resolution, accurate multiple-reflection time-of-flight mass spectrometry for short-lived, exotic nuclei of few events in their ground and low-lying isomeric states*;
S.A.S. Andrés *et al.*, *Physical Review C* **99**, 064313 (2019). [Journal Link](#); [arXiv Link](#)
6. *Neutron skin and signature of the $N = 14$ shell gap found from measured proton radii of $^{17-22}\text{N}$* ;
S. Bagchi *et al.*, *Physics Letters B* **790**, 251–256 (2019). [Journal Link](#); [arXiv Link](#)
5. *Multi-messenger investigation of the Pygmy Dipole Resonance in ^{140}Ce* ;
D. Savran *et al.*, *Physics Letters B* **786**, 16–20 (2018). [Journal Link](#)
4. *Nuclear-matter radius studies from $^{58}\text{Ni}(\alpha, \alpha)$ experiments at the GSI Experimental Storage Ring with the EXL facility*;
J.C. Zamora *et al.*, *Physical Review C* **96**, 034617 (2017). [Journal Link](#)
3. *First measurement of isoscalar giant resonances in a stored-beam experiment*;
J.C. Zamora *et al.*, *Physics Letters B* **763**, 16–19 (2016). [Journal Link](#)
2. *Observation of isoscalar multipole strengths in exotic doubly-magic ^{56}Ni in inelastic α scattering in inverse kinematics*;
S. Bagchi *et al.*, *Physics Letters B* **751**, 371–375 (2015). [Journal Link](#)
1. *A neutron spectrometer for studying giant resonances with (p,n) reactions in inverse kinematics*;
L. Stuhl *et al.*, *Nuclear Instruments and Methods in Physics Research Section A* **736**, 1–9 (2014). [Journal Link](#); [arXiv Link](#)

Conference Proceedings

28. *First observation of MNT isotope beams at the FRS Ion Catcher*;
Ali Mollaebrahimi, *et al.*, *Nuclear Physics A* **1057**, 123041 (2025). [Proceedings Link](#)
27. *Measurement of charge-changing cross section of neutron-rich nitrogen isotopes for determining their proton radii*;
A. Roy, *et al.*, *Nuclear Physics A* **1054**, 122983 (2025). [Proceedings Link](#)

26. *Investigation of the proton radius of the Borromean halo nucleus ^{19}B* ;
D. Prajapati, et al., *Nuclear Physics A* **1053**, 122977 (2025). [Proceedings Link](#)
25. *Effect of Ground-State Shape Deformation on the Collective Excitations in Even-Mass Nd isotopes*;
M. Abdullah, D. Das, S. Bagchi, M. N. Harakeh et al., *Submitted for Springer publication*.
24. *Fission isomer studies with the FRS*;
J. W. Zhao et al., *Proceedings of Science, FAIRness 2022* **419**, 063, 165175 (2023). [Proceedings Link](#)
23. *Geant4 Simulation on Gamma-Neutron Detection with CLYC: An Elpasolite Detector*;
D. Kar, S. Bagchi, *Proceedings of the DAE-BRNS Symposium on Nuclear Physics* **67**, 1297 (2023).
22. *Extraction of Optical-Model Parameters from α elastic scattering of highly-deformed ^{172}Yb* ;
K. Khokhar, S. Bagchi, M. N. Harakeh et al., *Proceedings of the DAE-BRNS Symposium on Nuclear Physics* **67**, 709 (2023).
21. *Effect of ground-state shape deformation on the Isoscalar Giant Monopole Resonance in Nd isotopes*;
M. Abdullah, S. Bagchi, M. N. Harakeh et al., *Proceedings of the DAE-BRNS Symposium on Nuclear Physics* **66**, 94–95 (2022).
20. *Search for η' -mesic nuclei using (p,d) reaction with FRS/Super-FRS at GSI/FAIR*;
Y. Tanaka, et al., *Journal of Physics: Conference Series* **1643**, 012181 (2020). [Proceedings Link](#)
19. *Structure of superheavy hydrogen ^7H* ;
M. Caamaño, et al., *European Physical Journal Web of Conferences* **232**, 04002 (2020). [Proceedings Link](#)
18. *Development of a method to deduce point-proton radii from charge changing cross sections*;
A. Homma, et al., *JPS Conference Proceedings* **32**, 010032 (2020). [Proceedings Link](#)
17. *Spectroscopy of η' -Mesic nuclei with WASA at GSI/FAIR*;
Y. K. Tanaka, et al., *Acta Physica Polonica B* **51**, 1 (2020). [Proceedings Link](#)
16. *A Method to Account for Hydroxide Contamination in Characterizing the Giant Monopole Resonance to Determine an Accurate K_τ* ;
S. Weyhmiller et al., *Bulletin of the American Physical Society* **64** (2019).
15. *A Method to Account for Hydroxide Contamination in Characterizing the Giant Monopole Resonance to Determine an Accurate K_τ* ;
S. Weyhmiller et al., *APS Division of Nuclear Physics Meeting Abstracts* **045** (2019).

14. *Investigating a possible positive value of K_τ , and implications for the symmetry energy;*
K. Howard *et al.*, *APS Division of Nuclear Physics Meeting Abstracts* **007** (2019).
13. *Measurement of proton-distribution radii of neutron-rich nitrogen isotopes;*
S. Bagchi *et al.*, *European Physical Journal Web of Conferences* **223**, 01003 (2019). [Proceedings Link](#)
12. *Search for Borromean halo structure in the Island of Inversion;*
S. Bagchi *et al.*, *Proceedings of the DAE-BRNS Symposium on Nuclear Physics* **63**, 414–415 (2018).
11. *Study of proton distribution of neutron-rich nitrogen isotopes through charge-changing cross section measurements;*
S. Bagchi *et al.*, *Proceedings of the DAE-BRNS Symposium on Nuclear Physics* **61**, 348–349 (2016).
10. *Nuclear reactions in the storage ring ESR with EXL;*
Th. Kröll, *et al.*, *Journal of Physics: Conference Series* **724**, 012026 (2016). [Proceedings Link](#)
9. *Nuclear astrophysics with radioactive ions at FAIR;*
R. Reifarth, *et al.*, *Journal of Physics: Conference Series* **665**, 012044 (2016). [Proceedings Link](#); [arXiv Link](#)
8. *Nuclear transfer reaction measurements at the ESR - for the investigation of the astrophysical $^{15}\text{O}(\alpha,\gamma)^{19}\text{Ne}$ reaction;*
D.T. Doherty, *et al.*, *Physica Scripta* **T166**, 014007 (2015). [Proceedings Link](#)
7. *Isoscalar giant resonance studies in a stored-beam experiment within EXL;*
J.C. Zamora, *et al.*, *Physica Scripta* **T166**, 014006 (2015). [Proceedings Link](#)
6. *Investigation of the Nuclear Matter Distribution of ^{56}Ni by Elastic Proton Scattering in Inverse Kinematics;*
M. von Schmid, *et al.*, *Physica Scripta* **T166**, 014005 (2015). [Proceedings Link](#)
5. *First Nuclear Reaction Experiment with Stored Radioactive ^{56}Ni Beam and Internal Hydrogen and Helium Targets;*
P. Egelhof, *et al.*, *JPS Conference Proceedings* **6**, 020049 (2015). [Proceedings Link](#)
4. *First EXL experiment with stored radioactive beam: Proton scattering on ^{56}Ni ;*
M. von Schmid, *et al.*, *European Physical Journal Web of Conferences* **66**, 03093 (2014). [Proceedings Link](#)
3. *Alpha cluster structure in ^{56}Ni ;*
H. Akimune, *et al.*, *Journal of Physics: Conference Series* **436**, 012010 (2013). [Proceedings Link](#)

2. *Neutron-skin thickness from the study of the anti-analog giant dipole resonance*;

A. Krasznahorkay, *et al.*, *AIP Conference Proceedings* **1491**, 190–197 (2012). [Proceedings Link](#); [arXiv Link](#)

1. *Feasibility Studies for the EXL Project at FAIR*;

K. Yue, *et al.*, *Proceedings of Science* **STORP11**, 014 (2011). [Proceedings Link](#)