



# UK Nuclear Activity

August 2025 Issue 145

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Newsletter archive: <http://npg.dl.ac.uk/OutreachNewsletter/index.html>

Nuclear Physics Public Engagement Website: [NuclearPhysicsForYou](#)

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## 1. Nuclear Physics Publications for August\*

If you are publishing a paper that you think would be of media value, please contact [Wendy Ellison](#), STFC Press Officer. She can help with press releases and publicity. If you get in touch with her before publication, she can also get material ready in advance for the day of publication.

\*Also includes missed publications from previous months

Phys. Rev. Lett. **135** 092301 (2025) (<https://doi.org/10.1103/c9wp-5tq3>)

Observation of the Charged-Particle Multiplicity Dependence of  $\sigma_{\psi(2S)}/\sigma_{J/\psi}$  in  $p$ -Pb Collisions at 8.16 TeV  
CMS Collaboration, V. Chekhovsky *et al.*

Published 25 August 2025

Phys. Rev. C **112** 024308 (2025) (<https://doi.org/10.1103/3knl-vywc>)

Quantifying neutron-proton interactions in  $N=51$  isotones: From the NEEC candidate  $^{93}\text{Mo}$  to  $^{99}\text{Cd}$   
B. Maheshwari, P. Van Isacker and P. M. Walker

Published 4 August 2025

Phys. Rev. C **112** 024315 (2025) (<https://doi.org/10.1103/247g-wqd5>)

High-spin states of  $^{165,166,167,168}\text{Er}$  populated in incomplete fusion reactions

M. J. Burns *et al.*

Published 11 August 2025

Phys. Rev. C **112** 024318 (2025) (<https://doi.org/10.1103/s8h6-f6kc>)

Convergence on the proton dripline in thulium

B. Kootte *et al.*

Published 14 August 2025

Phys. Rev. C **112** 024328 (2025) (<https://doi.org/10.1103/rf8d-v286>)

$\beta$ - and  $\alpha$ -decay spectroscopy of  $^{182}\text{Au}$

J. Mišt *et al.*

Published 28 August 2025

Phys. Rev. C **112** 024330 (2025) (<https://doi.org/10.1103/z78g-shtn>)

Isomeric states, high- $K$  bands, and possible prolate-oblate shape coexistence in  $^{116}\text{Cs}$

P. M. Jodidar *et al.*

Published 29 August 2025

Phys. Rev. C **112** 024607 (2025) (<https://doi.org/10.1103/cbkv-ltx7>)

Quantum molecular dynamics model based on relativistic mean field theory for light nucleus fragmentation in hadron therapy

A. Haga *et al.*

Published 12 August 2025

Phys. Rev. C **112** 024905 (2025) (<https://doi.org/10.1103/4ltm-g1qg>)

First measurement of symmetric cumulants of hexagonal flow harmonics in Pb-Pb collisions at  $\sqrt{s_{\text{NN}}}=5.02$  TeV

S. Acharya *et al.* (ALICE Collaboration)

Published 18 August 2025

Phys. Rev. C **112** 024910 (2025) (<https://doi.org/10.1103/d46f-yl4n>)

Azimuthal anisotropies of charged particles with high transverse momentum in Pb+Pb collisions at  $\sqrt{s_{\text{NN}}}=5.02$  TeV with the ATLAS detector

G. Aad *et al.* (ATLAS Collaboration)

Published 27 August 2025

Phys. Rev. C **112** 025201 (2025) (<https://doi.org/10.1103/qy4p-dyjt>)

Inclusive electron scattering in the resonance region off a hydrogen target with CLAS12

V. Klimenko *et al.*

Published 25 August 2025

Phys. Rev. C **112** 025203 (2025) (<https://doi.org/10.1103/2tdc-5by6>)

Measurement of spin-density matrix elements in  $\phi(1020) \rightarrow K^0_S K^0_L$  photoproduction with a linearly polarized photon beam at  $E_\gamma=8.2\text{--}8.8$  GeV

F. Afzal *et al.* (GlueX Collaboration)

Published 26 August 2025

Phys. Rev. C **112** 025803 (2025) (<https://doi.org/10.1103/byw8-bvrn>)

Inverse kinematics study of the energy levels of  $^{21}\text{Ne}$  populated with the  $^{20}\text{Ne}+d$  reaction

C. Angus *et al.*

Published 8 August 2025

Eur. Phys. J. A **61** 191 (2025) (<https://doi.org/10.1140/epja/s10050-025-01658-7>)

Towards a comprehensive study of the  $^{14}\text{N}(p,\gamma)^{15}\text{O}$  astrophysical key reaction: Description of the experimental technique including novel target preparation

A. Compagnucci *et al.*

Published 15 August 2025

Eur. Phys. J. A **61** 194 (2025) (<https://doi.org/10.1140/epja/s10050-025-01615-4>)

Investigating the  $p\text{-}\pi^\pm$  and  $p\text{-}p\text{-}\pi^\pm$  dynamics with femtoscopy in pp collisions at  $\sqrt{s}=13$  TeV

ALICE Collaboration

Published 20 August 2025

Eur. Phys. J. C **85** 866 (<https://doi.org/10.1140/epjc/s10052-025-14531-0>)

Measurements of differential two-particle number and transverse momentum correlation functions in pp collisions at  $\sqrt{s} = 13$  TeV

ALICE Collaboration

Published 12 August 2025

J. High Energ. Phys. **2025** 35 (2025) ([https://doi.org/10.1007/JHEP08\(2025\)035](https://doi.org/10.1007/JHEP08(2025)035))

Light neutral-meson production in pp collisions at  $\sqrt{s} = 13$  TeV

The ALICE collaboration., S. Acharya *et al.*

Published 5 August 2025

J. High Energ. Phys. **2025** 210 (2025) ([https://doi.org/10.1007/JHEP08\(2025\)210](https://doi.org/10.1007/JHEP08(2025)210))

Measurement of correlations among net-charge, net-proton, and net-kaon multiplicity distributions in Pb-Pb collisions at  $\sqrt{s_{NN}}=5.02$  TeV

The ALICE collaboration., S. Acharya *et al.*

Published 26 August 2025

J. Phys. G **52** 085104 (2025) (<https://doi.org/10.1088/1361-6471/adf5d9>)

Application of a molecular model to band-head states in  ${}^9\text{B}$

A. D. Brooks *et al.*

Published 28 August 2025

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## 2. News to Report

### **a. Dr Bryan McKinnon elected as Chair of CLAS Collaboration**

Dr Bryan McKinnon from the Nuclear and Hadron Physics Group at the University of Glasgow has been elected as the next Chair (spokesperson) of the CLAS Collaboration at the Thomas Jefferson National Accelerator Facility, USA (<https://www.jlab.org>). The CLAS Collaboration is a consortium of some 200 physicists from 45 international institutes performing cutting edge research using the [CLAS12 detector in Hall B](#).

Their task is to investigate the nature and interactions of hadronic matter at its most fundamental level i.e. quarks and gluons, and answer questions such as "how do the dynamics of QCD lead to the phenomena of confinement and the emergence of hadronic (nucleon) mass?" This is an exciting time for the CLAS Collaboration with an abundance of new data currently being analysed and many future experiments already scheduled. Bryan will lead these efforts during his two year term. This is a fantastic achievement and we wish him the very best!

*Contribution from Rachel Montgomery, University of Glasgow*

### **b. 2025 ECR and Thesis Prize - call for nominations**

Nominations for the IoP Nuclear Physics Thesis Prize and Early Career Researcher Prize are open, with a deadline of the 10th of November (2025). These annual awards are intended to recognise exceptional work in all fields of nuclear physics, and each comes with a prize of £250.

ECR Prize candidates should typically have less than six years of experience post-PhD and work in either fundamental nuclear physics or applications of nuclear physics, and should be employed by, or have obtained their PhD at, a UK or Irish institution, or be an IoP Nuclear Physics Group member. Postgraduate study, career breaks, and time spent in unrelated physics-based research are not included in the maximum qualifying period.

Details and nomination forms can be found here:

<https://www.iop.org/physics-community/special-interest-groups/nuclear-physics-group/early-career-researcher-prize>

Thesis Prize candidates should typically have received their PhD since the last nomination deadline (10th of November, 2024 - exceptions

may be considered by the committee), and should be employed by, or have obtained their PhD at, a UK or Irish institution, or be an IoP Nuclear Physics Group member.

Details and nomination forms can be found here:

<https://www.iop.org/physics-community/special-interest-groups/nuclear-physics-group/thesis-prize>

Self-nominations are encouraged. Re-nominations are also encouraged where the nominee still satisfies the above criteria.

Nominations and evidence should be sent to the IoP Nuclear Physics Group Secretary, Kara Lynch ([kara.lynch@manchester.ac.uk](mailto:kara.lynch@manchester.ac.uk)).

*Contribution from Jack Henderson, University of Surrey*

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### **3. Outreach Activity**

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### **4. Media Interactions**

