



UK Nuclear Activity

July 2025 Issue 144

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

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

1. Nuclear Physics Publications for July*

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** 022502 (2025) (<https://doi.org/10.1103/hkmy-yfdk>)
Isospin Symmetry Breaking Disclosed in the Decay of Three-Proton Emitter ^{20}Al
X.-D. Xu *et al.*
Published 10 July 2025

Phys. Rev. Lett. **135** 031901 (2025) (<https://doi.org/10.1103/PhysRevLett.135.031901>)
Search for quasi-particle scattering in the quark-gluon plasma with jet splittings in pp and Pb–Pb collisions at $\sqrt{s}_{\text{NN}} = 5.02$ TeV
ALICE Collaboration, S. Acharya *et al.*
Published 16 July 2025

Phys. Rev. Lett. **135** 052501 (2025) (<https://doi.org/10.1103/n6zw-zhz2>)
Deviations from the Porter-Thomas Distribution due to Nonstatistical γ Decay below the ^{150}Nd Neutron Separation Threshold
O. Papst *et al.*
Published 30 July 2025

Phys. Lett. B **868** 139713 (2025) (<https://doi.org/10.1016/j.physletb.2025.139713>)

Measurement of the $^{nat}\text{C}(n,p)$ and $^{nat}\text{C}(n,d)$ reactions from n_TOF at CERN

P. Zugec *et al.* (n_ToF collaboration)

Published 14 July 2025

Phys. Rev. C **112** 014311 (2025) (<https://doi.org/10.1103/wrzp-c3n9>)

α -particle condensation in diluted ^{16}O at finite temperature

M. Davies *et al.*

Published 10 July 2025

Phys. Rev. C **112** 014307 (2025) (<https://doi.org/10.1103/96g9-1ff5>)

Electric and magnetic γ -ray strength functions at finite temperature

A. Kaur *et al.*

Published 2 July 2025

Phys. Rev. C **112** 014309 (2025) (<https://doi.org/10.1103/t91y-l6rf>)

Coulomb excitation of ^{80}Sr and the limits of the $N\approx Z\approx 40$ island of deformation

R. Russell *et al.*

Published 7 July 2025

Phys. Rev. C **112** 014316 (2025) (<https://doi.org/10.1103/nwlm-bxqc>)

Excited levels in odd- A silver isotopes populated in fission of ^{252}Cf

W. Urban *et al.*

Published 17 July 2025

Phys. Rev. C **112** 014318 (2025) (<https://doi.org/10.1103/2q1s-4517>)

Intruder structures in ^{32}Si and ^{29}Al

J. Williams *et al.*

Published 18 July 2025

Phys. Rev. C **112** 014321 (2025) (<https://doi.org/10.1103/fmgd-tj4w>)

Lifetime measurements of low-lying states in odd-mass isotopes $^{117,119}\text{Te}$ and the nature of vibration in Te isotopes

E. A. Cederlof *et al.*

Published 21 July 2025

Phys. Rev. C **112** 014330 (2025) (<https://doi.org/10.1103/5vdp-3dcp>)

Emerging tension between isospin symmetry and nuclear deformation at $A=78$

J. Henderson *et al.*

Published 28 July 2025

Phys. Rev. C **112** 014332 (2025) (<https://doi.org/10.1103/jgxv-nf34>)

Exploring the onset of collectivity approaching $N=40$ with masses of manganese isotopes

C. Chambers *et al.*

Published 31 July 2025

Phys. Rev. C **112** 014604 (2025) (<https://doi.org/10.1103/myji-z2j7>)

Enhancing the creation of elements in laser-assisted heavy-ion fusion reactions

N. Thomson *et al.*

Published 1 July 2025

Phys. Rev. C **112** 014905 (2025) (<https://doi.org/10.1103/r8jt-1xpk>)

Soft-hard framework with exact four-momentum conservation for small systems

I. Soudi *et al.* (JETScape Collaboration)

Published 17 July 2025

Phys. Rev. C **112** 01504 (2025) (<https://doi.org/10.1103/jfzb-rfl4>)
First measurement of $a_2^0(1320)$ polarized photoproduction cross section
F. Afzal *et al.*
Published 8 July 2025

J. High Energ. Phys. **7** 23 (2025) ([https://doi.org/10.1007/JHEP07\(2025\)023](https://doi.org/10.1007/JHEP07(2025)023))
J/ ψ -hadron correlations at midrapidity in pp collisions at $\sqrt{s} = 13$ TeV
ALICE collaboration., Acharya, S., Agarwal, A. *et al.*
Published 2 July 2025

J. High Energ. Phys. **7** 238 (2025) ([https://doi.org/10.1007/JHEP07\(2025\)238](https://doi.org/10.1007/JHEP07(2025)238))
Multiplicity-dependent inclusive J/ ψ production at forward rapidity in pp collisions at $\sqrt{s} = 13$ TeV
ALICE collaboration., Acharya, S., Agarwal, A. *et al.*
Published 23 July 2025

Eur. Phys. J. A **61** 155 (2025) (<https://doi.org/10.1140/epja/s10050-025-01622-5>)
Energy calibration of the 2.5 MV Pelletron at the Dalton Cumbrian Facility
K. Linkowski *et al.*
Published 8 July 2025

Eur. Phys. J. C **85** 776 (2025) (<https://doi.org/10.1140/epjc/s10052-025-14325-4>)
System size and energy dependence of the mean transverse momentum fluctuations at the LHC
ALICE Collaboration
Published 16 July 2025

J. Phys. G **52** 065104 (2025) (<https://doi.org/10.1088/1361-6471/ade0dd>)
Electromagnetic moments in the Sn-Gd region determined within nuclear DFT
H. Wibowo *et al.*
Published 1 July 2025

J. Phys. G **52** 065104 (2025) (<https://doi.org/10.1088/1361-6471/ade1f1>)
Seniority-two valence-shell building blocks of the octupole phonon
M. Scheck *et al.*
Published 2 July 2025

2. News to Report

a. Her Royal Highness The Princess Royal visits LabLogic Systems

Her Royal Highness, The Princess Royal, visited LabLogic Systems in recognition of being awarded the The King's Awards for Enterprise in International Trade in 2023. This celebrated LabLogic's continued international success and commitment to innovation in sectors including nuclear medicine, nuclear power, defence, and drug discovery.

Demonstrations of LabLogic's instrumentation and software, including systems for gamma spectrometry and radio-TLC, were also provided by Research Director Dr Tom Deakin and Knowledge Transfer Partnership (KTP) Associate Dr Katie Staunton-Mann, offering

insight into how the company's solutions are used globally in nuclear medicine and radiation detection.

During the last decade, Targeted Alpha Therapies (TATs) for new innovative cancer treatments have demonstrated the potential to transform patient care. However, the Quality Control checks for these therapies are still in the early stages of development. To address this, LabLogic commenced a KTP project in October 2024 with Dr Christian Diget in the University of York's Nuclear Physics Group. Funded in part by Innovate UK, this collaboration aims to develop the next generation of QC instruments specifically for alpha-emitting radionuclides. As part of the wider TAT mission, LabLogic are also a partner

on the European-wide Accelerate.EU programme funded by the Innovative Health Initiative of the European Union.



LabLogic's R&D Nuclear Physicist and KTP Associate Dr Katie Staunton-Mann demonstrates the Scan-RAM 2 radio-TLC scanner to HRH The Princess Royal.

More information can be found [here](#).

Contribution from Katie Staunton-Mann, University of York and LabLogic

b. UK National Postdoc Appreciation Week (UKNPAW) event



The UK National Postdoc Appreciation Week (UKNPAW) 2025 will be happening the week commencing 15th September 2025, and we have organised a National free online event open for all UK postdocs. Come join our online and free flagship event with a theme “From Surviving to Thriving: Planning Your Future”, where we will explore how we can take control of our futures through self-leadership, navigate uncertainties of the future, and gain insights from a panel of diverse and inspiring (ex)academics who’ll share their career journeys and motivation strategies. Plus, enjoy a special showing of “Postdoc: The Musical,” a creative celebration of postdoc life and achievements.

Register now and start your journey from surviving to thriving!

For more information, check out <https://uk-postdoc-appreciation-week.webnode.co.uk/>

Register here: <https://event-lab.co.uk/paw/>

Save the date, spread the word, and we’ll see you there!

Contribution from Jagjit Singh, University of Manchester

c. University of Glasgow Workshop on Nuclear Data

Nuclear data are at the core of many modern endeavours in the civil and defence nuclear sectors, driven by the needs for the design and construction of new modern nuclear fission and fusion reactors, radiation safety, the needs of safe treatment and disposal of radioactive waste and a wide variety of healthcare, material science, security and defence applications.

While a number of international data bases containing nuclear data exist, their content often falls short in precision and access might be jeopardised by shifting international political climates. Similarly, the production of new and more precise data is currently only feasible at international facilities, often with UK expertise and leadership. Nascent facilities in the UK can form the basis of a future experimental programme. In parallel, there is significant UK theoretical expertise though in all aspects there are well founded worries about the sustainability of the effort and current and future manpower

Several hitherto disjunct communities in the UK, from fundamental physics to nuclear engineering in academia, from governmental and industrial stakeholders in the nuclear energy sector to the nuclear fusion and defence organisation, have expressed the need for a UK based nuclear data centre, serving the combined needs of these communities under one umbrella. This centre would curate existing data, harness the machine learning and AI revolution in data analysis and management and provide a focal point for future experimental campaigns and evaluate international data provision and needs.

A one day workshop was hosted by the University of Glasgow mid July bringing stakeholders and interested parties together in a focussed meeting addressing needs, capabilities and opportunities. In particular, presentations were provided by speakers from AWE, UK NNL, UKAEA and NPL defining the data needs for the defence and civil nuclear sectors, fusion research and healthcare. UK capabilities were shown in presentations on nuclear data relevant fundamental research (Toby Wright, Manchester on N_TOF), UK hosted neutron sources (Dawid Hampel from Birmingham) and Accelerator Mass Spectroscopy for Nuclear Data (Stewart Freeman, SUERC). A crucial presentation on UK

capabilities in Nuclear Theory was provided by Paul Stevenson on behalf of the UK community.

The meeting concluded by a round table discussion on future action in the field, feeding into a future UK hosted nuclear data meeting organised through the IOP, preparations for future funding opportunities, interactions with UKRI, community building and necessary interventions to impress on decision makers the need for further investment and a joint UK effort in the field.

Contribution from Bjorn Seitz, University of Glasgow

3. Outreach Activity

4. Media Interactions

