



UK Nuclear Activity

September 2026 Issue 158

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

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

Support for ECR travel and other research expenses is available from the IoP.

Support is typically at the level of about £300. Applications typically require the completion of a short form, and are reviewed periodically, so try to apply well in advance.

IoP Support and grants: <https://www.iop.org/about/support-grants>

1. Nuclear Physics Publications for September*

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.

Nat Communications (2026) (<https://doi.org/10.1038/s41467-026-77082-2>)

A pathway towards decentralized studies of radioactive post-lead elements and their applications in beyond standard model physics

M. P. Reiter *et al.*

Published 10 September 2026

Phys. Lett. B **882** (2026) 140963 (<https://doi.org/10.1016/j.physletb.2026.140963>)

Measurement of the elliptic flow of ^3He and $^3\Lambda\text{H}$ in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.36$ TeV

ALICE Collaboration

Published 26 September 2026

Phys. Rev. C **114** 034005 (2026) (<https://doi.org/10.1103/z6kw-l1pc>)

One- and three-dimensional identical charged-kaon femtoscopic correlations in Pb-Pb collisions at $\sqrt{s_{NN}}=5.02\text{TeV}$

I. J. Abualrob *et al.* (ALICE Collaboration)

Published 8 September 2026

Phys. Rev. C **114** 034311 (2026) (<https://doi.org/10.1103/lsp5-qntn>)

Direct mass measurement of ^{91}Rh and ^{89}Ru and mid-shell trend of the one-proton separation energies for $N=Z+1$ nuclei

S. A. San Andrés *et al.*

Published 8 September 2026

Phys. Rev. C **114** 034313 (2026) (<https://doi.org/10.1103/nclr-tjv1>)

Evolution of high-spin states in neutron-rich $^{195-202}\text{Au}$ isotopes approaching the $N=126$ shell closure

Y. Cho *et al.*

Published 10 September 2026

Phys. Rev. C **114** 034623 (2026) (<https://doi.org/10.1103/y9zl-61c5>)

Improved ^{94}Mo neutron resonance parameters from neutron capture and transmission measurements at n_TOF and GELINA

R. Mucciola *et al.* (n_TOF Collaboration)

Published 22 September 2026

Phys. Rev. C **114** 035807 (2026) (<https://doi.org/10.1103/9f7j-m4xv>)

First strength measurements of low-energy resonances in the $^{45}\text{Sc}(p,\gamma)^{46}\text{Ti}$ reaction and its astrophysical implications

R. S. Sidhu *et al.*

Published 24 September 2026

Eur. Phys. J. A **62** 199 (2026) (<https://doi.org/10.1140/epja/s10050-026-01939-9>)

Systematic VQE benchmarking of the deuteron, triton, and helium-3 within lattice pionless effective field theory

P. Çifci, S. Akkoyun and L. La Ronde

Published 24 September 2026

Eur. Phys. J. A **62** 187 (2026) (<https://doi.org/10.1140/epja/s10050-026-01950-0>)

Identification of a nanosecond isomer of ^{164}Tb

J. P. Bormans *et al.*

Published 3 September 2026

Eur. Phys. J. C **86** 1126 (2026) (<https://doi.org/10.1140/epjc/s10052-026-16192-z>)

Measurement of isolated-prompt photon-hadron correlations in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02\text{ TeV}$

ALICE Collaboration

Published 28 September 2026

Eur. Phys. J. C **86** 1127 (2026) (<https://doi.org/10.1140/epjc/s10052-026-16235-5>)

π , K, and p production in high-multiplicity pp collisions at $\sqrt{s} = 13\text{ TeV}$

ALICE Collaboration

Published 28 September 2026

Eur. Phys. J. C **86** 1109 (2026) (<https://doi.org/10.1140/epjc/s10052-026-15943-2>)

Measurements of the production of $W^\pm$ and Z^0 bosons in pp collisions at $\sqrt{s} = 13\text{ TeV}$

ALICE Collaboration

Published 24 September 2026

Jour. Radioanal. Nucl. Chem. (2026) (<https://doi.org/10.1007/s10967-026-11140-3>)

Radioisotope research at the Birmingham accelerator facilities.

C. Wheldon and B. Phoenix

Published 23 September 2026

Nucl. Instr. Meth. B **581** 166323 (2026) (<https://doi.org/10.1016/j.nimb.2026.166323>)

Neutron production from deuterons on lithium at 9.7 and 14 MeV

L. Butt *et al.*

Published 25 September 2026

Jour. Subatomic Part. and Cosm. **6** 100541 (2026) (<https://doi.org/10.1016/j.jspc.2026.100541>)

Advancing theoretical models for exotic neutron-rich nuclei

R. Barman *et al.*

Published 25 September 2026

*Also includes missed publications from previous months

2. News to Report



a. UK Nuclear Data 2026: A Renaissance - Conference held in London

From the 8th-10th of September, the Institute of Physics building hosted [UK Nuclear Data 2026: A Renaissance](#). The UK's first Nuclear Data conference for many decades, this event brought together stakeholders in nuclear data from across the nation, with representation from medical physics, nuclear energy, security, fundamental science, and beyond.

The event was a tremendous success, with around eighty participants in all, and was made possible by support from a number of [sponsors](#). Co-organised by the IoP Nuclear Physics and Nuclear Industry special interest groups, the conference was intended to kick-start collaborations across the UK's nuclear data community. It is intended to repeat biennially, with smaller, targeted events hosted in the intervening years, also supported by the two special interest groups.

Contribution from Jack Henderson, University of Surrey

b. Joint Nuclear Physics - IPPP meeting held at the University of York

On Friday 18th September, the University of York hosted physicists from the Institute of Particle Physics and Phenomenology (IPPP), based at Durham University, for a full day workshop to discuss bridging and collaboration opportunities between our disciplines. The workshop consisted of 27 registered attendees, and was held in-person. We had a morning session dedicated to providing the IPPP with an overview of the nuclear physics research being undertaken at York across our Hadron, Nuclear Structure and Nuclear Theory groups, which consisted of talks given by Postdoctoral researchers, and leading academics. The afternoon session was dedicated to our visitors, where they gave us an overview of the IPPP, and discussed the leading developments across their Monte Carlo, Nuclear Astrophysics, and Nuclear/Particle Data research groups. Talks in the afternoon session were delivered by a mix of early career researchers, from PhD to Postdoctoral, and Professors within IPPP.

These overviews preceded a mid afternoon session dedicated to lengthy discussions about

methods of collaboration between the two universities, and sparked several ideas for future opportunities. We discussed collaborations across the Deep Underground Neutrino Experiment (DUNE), with respect to the Monte Carlo expertise that the IPPP are providing and the experimental analysis proposals and simulation studies York has performed towards Neutrino Science. We also discussed strategies of handling nuclear data from legacy experiments, for example the CEBAF Large Acceptance Spectrometer at 6 GeV (CLAS).

Contribution from Kayleigh Gates, University of York

c. Royal Society Research Grant awarded to Dr Ragandeep Singh Sidhu

Dr Ragandeep Singh Sidhu has been awarded a Royal Society Research Grant to perform direct nuclear reaction measurements at the University of Notre Dame (USA) and the GANIL laboratory (France).

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

Contribution from Ragan Sidhu, University of Surrey

d. UK Contributions to “Physics and Chemistry of the Heaviest Elements”



The International Workshop on “The Physics and Chemistry of the Heaviest Elements” took place at the European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*) in Trento, Italy, 14-18 September 2026. In this workshop, senior and junior researchers (34) have critically assessed recent advances in

superheavy element research and the challenges hindering further progress to identify the best pathways to push our knowledge beyond current frontiers.

The main topics of the meeting were (i) Chemistry of superheavy elements, (ii) Structure and decay of superheavy elements, and (iii) Production mechanisms.

The Surrey nuclear physics group led this initiative, as Dr Alexis Diaz-Torres was the main organiser of the meeting, and Prof. Zsolt Podolyak and Dr. Nicholas Thomson contributed to the scientific programme of the workshop with interesting presentations on the structure of neutron-rich heavy nuclei and a quantum dynamical modelling of multinucleon transfer reactions, respectively. Most participants agreed that the workshop was a great success, from its organisation to the high quality of both the presentations and scientific discussions.

Contribution from Alexis Diaz-Torres, University of Surrey

e. Neutron Detector and Facility Workshop

The [Neutron Detector and Facility Workshop](#) was held on 17-18th September at the IOP's London headquarters. A total of 43 delegates attended across the two days, representing universities, national laboratories and the nuclear industry. The workshop brought these communities together to discuss current activity in neutron detection.

Invited talks were delivered by Carlo Cazzaniga (RAL), Jack Bishop (University of Birmingham), Gemma Wilson (UKAEA), Kerri Loughney (AWE NST), Giuseppe Lorusso (NPL), Stewart Freeman (University of Glasgow) and David Sharpe (Rapiscan). They covered a broad range of topics, including current and future neutron-producing facilities, as well as detector groups' efforts to apply established and emerging technologies to their respective challenges.

The programme also featured 10 contributed talks. Questions from the audience demonstrated strong engagement with the recent measurements and breakthroughs presented, and prompted valuable discussion of the challenges raised. Six contributed

posters were displayed throughout the workshop, enabling detailed conversations about the presenters' upcoming work.

Contribution for Joey O'Neill, University of Birmingham

The event was supported by the IOP Nuclear Physics Group.



f. Neutron Users Club - 25/11/2026

The Neutron Users' Club (NUC) is an annual meeting dedicated to the production, measurement and application of neutron fields. Now in its 32nd year, it remains a key forum for the UK neutron community, offering a technical programme in a welcoming and collaborative setting.

This year's event will be held at the National Physical Laboratory on Wednesday the 25th of November. There will also be an optional evening reception after the event until 18:30.

This year's programme features presentations from a wide range of organisations across the neutron community, including NPL, Sellafield Ltd, Cavendish Nuclear, NRS Dounreay, AN Technology Ltd, Science and Technology Facilities Council (STFC), UKHSA, Mirion Technologies Ltd, Berthold Technologies and the University of Surrey. Attendees will hear practical updates, technical developments and real-world applications from across industry, academia and national laboratories.

Registration details and other information can be found [here](#).

Contribution from Michael Bunce, National Physical Laboratory

g. BridgCE meeting held at University of Hertfordshire

This year's BRIDGCE Annual Meeting was hosted by the University of Hertfordshire from the 16th - 18th September 2026. BRIDGE the Disciplines related to Galactic Chemical Evolution is a UK-based network aiming to facilitate collaboration between the disciplines involved in studying the origin of the elements, including nuclear physics, stellar evolution, galactic chemical evolution and more.



Over 50 researchers attended the Annual Meeting in person and online. The programme consisted of 7 invited and 30 contributed talks on a broad range of subjects related to chemical evolution, this year expanding the topics discussed with invited talks on atomic physics and exoplanet chemistry. Early career researchers contributed a significant 84% of the talks. The conference also included a careers session with an invited talk giving advice to early career researchers on how to

get jobs in astronomy followed by a Q&A session.

In the evenings, social events were held, including a trip to the University of Hertfordshire's Bayfordbury Observatory and a dinner in the nearby city of St Albans.

The local organising committee thanks the IoP Nuclear Physics Group, EMMI at GSI and the University of Hertfordshire for their support.

Contribution from Alice Ferreira, University of Hertfordshire

3. Outreach Activity

4. Media Interactions

