



UK Nuclear Activity

April 2023 Issue 117

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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 April*

Phys. Rev. Lett. **130** 142301 (2023) (<https://doi.org/10.1103/PhysRevLett.130.142301>)
First Measurement of Λ Electroproduction off Nuclei in the Current and Target Fragmentation Regions
T. Chetry *et al.* (CLAS Collaboration)
Published 4 April 2023

Phys. Lett. B **839** 137801 (2023) (<https://doi.org/10.1016/j.physletb.2023.137801>)
First application of Markov chain Monte Carlo-based Bayesian data analysis to the Doppler-shift attenuation method
L. J. Sun *et al.*
Published 10 April 2023

Phys. Rev. C **107** 044301 (2023) (<https://doi.org/10.1103/PhysRevC.107.044301>)
First spectroscopic study of odd-odd ^{78}Cu
L. G. Pedersen *et al.*
Published 3 April 2023

Phys. Rev. C **107** 044616 (2023) (<https://doi.org/10.1103/PhysRevC.107.044616>)
Neutron-induced fission cross sections of ^{232}Th and ^{233}U up to 1 GeV using parallel plate avalanche counters at the CERN n_TOF facility
D. Tarrío *et al.* (n_TOF Collaboration)
Published 28 April 2023

Phys. Rev. C **107** 045805 (2023) (<https://doi.org/10.1103/PhysRevC.107.045805>)
 $^{179}\text{Ta}(n,\gamma)$ cross-section measurement and the astrophysical origin of the ^{180}Ta isotope
R. Garg *et al.*
Published 13 April 2023

Eur. Phys. J. A **59** 81 (2023) (<https://doi.org/10.1140/epja/s10050-023-00985-x>)

Low-energy nuclear reactions with stored ions: a new era of astrophysical experiments at heavy ion storage rings

J. Glorious and C. Bruno

Published 19 April 2023

Eur. Phys. J. A **59** 83 (2023) (<https://doi.org/10.1140/epja/s10050-023-00967-z>)

Matter radius of the doubly-magic ^{56}Ni measured in a storage ring

M. von Schmid *et al.*

Published 20 April 2023

Eur. Phys. J. A **59** 78 (2023) (<https://doi.org/10.1140/epja/s10050-023-00969-x>)

Improving fission-product decay data for reactor applications: part I—decay heat

A. L. Nichols *et al.*

Published 13 April 2023

J. Phys. G **50** 045201 (2023) (<https://doi.org/10.1088/1361-6471/acb961>)

Advances in radiative capture studies at LUNA with a segmented BGO detector

J. Skowronski *et al.*

Published 16 March 2023



2. News to Report

a. IoP Nuclear Physics Conference held in York

The UK's annual Institute of Physics conference for Nuclear Physics was held in York on the 4th-6th of April. The organising committee of the well-attended event was chaired by Dr. Mikhail Bashkanov. Attendees saw fantastic talks on subjects varying from nuclear structure and astrophysics, to hadronic physics, nuclear theory and applications. Speakers included Rutherford prize winner, Prof. Kieran Flanagan of the University of Manchester, and recent IoP

Nuclear Physics Group early-career researcher award winner, Dr. Shane Wilkins, from Massachusetts Institute of Technology.

Four PhD student contributions were awarded prizes. Kiran Nutter, from the University of Birmingham, was awarded for their presentation: *Study of the effect of cannulation on blood flow during extracorporeal membrane oxygenation using positron emission particle tracking*. Charlie Paxman from the University of Surrey was awarded for their talk on *Cross-shell interactions at the N=28 shell closure via $^{47}\text{K}(d,p)$ and $^{47}\text{K}(d,t)$ with MUGAST, AGATA and VAMOS*. Connor O'Shea of the University of

Surrey won for their poster *Investigating the key rp-process reaction $^{48}\text{Cr}(p,g)^{49}\text{Mn}$ via $^{11}\text{B}(^{40}\text{Ca},2n)^{49}\text{Mn}$ fusion-evaporation*. Nia Hunter, of the University of Glasgow, won for their poster describing *A Large Area Optical Sensor for Water Cherenkov Detectors Detecting Anti-Neutrinos*.

Contribution from Jack Henderson (University of Surrey) and Adam Featherstone (University of York)

b. Prof. Aliota gives plenary talk at DPG Spring Meeting

Professor Marialuisa Aliota from the University of Edinburgh gave a plenary talk on the Origin of the Chemical Elements at the 2023 Spring Meeting of the German Physical Society (DPG) on March 20th-24th. The meeting this year was attended by about 2300 participants. The talk led the audience from the Big Bang through to the GW170817 neutron star merger event.

Contribution from Prof. Marialuisa Aliota, University of Edinburgh

c. Dr. Kara Lynch wins L'Oréal-UNESCO award

Dr. Kara Lynch from the University of Manchester has won a L'Oréal-UNESCO For Women in Science Rising Talent Award in the Physical Sciences category. As a result, she appeared on Sky News Breakfast on the 28th of April and BBC Radio Three Counties on the 1st of May, where she discussed her work and the need for more women in science.

Details of the award can be found here: <https://www.forwomeninscience.com/article/81>

Contribution from Dr. Kara Lynch, University of Manchester

3. Outreach Activity

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4. Media Interactions

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