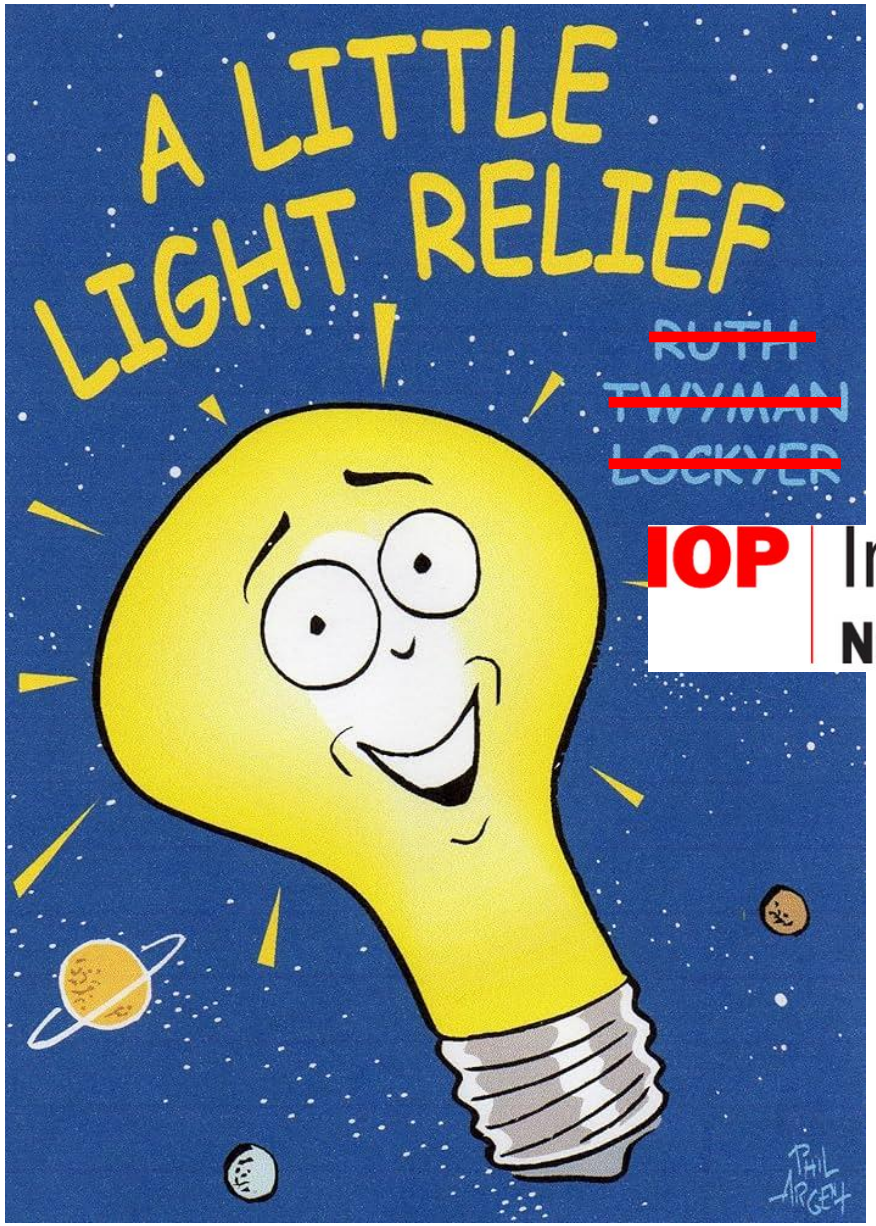

IOP Institute of Physics
Nuclear Physics Group

*AGM: Wednesday lunch (Huxley 406) – 12:45

IOP Institute of Physics
Nuclear Physics Group

IOP Nuclear Physics Group Committee

Who are we?

Committee is diverse with members from academia and industry

Dr Jack Henderson – Chair
Dr Kara Lynch – Secretary
Dr Liam Gaffney – Treasurer
Dr Iain Darby – Member
Dr David Lee – Member
Dr Andrew Petts – Member
Dr Rachel Montgomery – Member
Dr Liliana Teodorescu – Member
Dr Philippos Papadakis – Member
Dr Daniel Pittman-Weymouth - Member
Miss Bethany Slingsby– Member
Miss Hannah Gill – Early Career Physicist

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Nuclear Physics Group

Event Funding

What does the IOP Nuclear Physics Group Committee Do?

Supports conferences and workshops organised by group members – this year's budget (April onwards) being developed.

Half-day event £500 (£750 for more than one group)
One-day event* £1000 (£1500 for more than one group)
No additional funding for multi-day events

Events organised by the group *cannot receive support if there is a registration fee*

External events can also be supported, roughly in line with the above levels, but with additional support for multiple days

Total budget for group events should be comparable to that for external events

Supports early career researchers through the awards of **ECR prize**, **thesis prize** and **student conference prizes**.

IOP has small pots of money for ECRs to attend conferences, do outreach etc.

Have a look here https://www.iop.org/about/support-grants#gref

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Nuclear Physics Group

Funding for events

Half-day event £500 (£750)
One-day event* £1000 (£1500)

Contact jack.henderson@surrey.ac.uk or liam.gaffney@liverpool.ac.uk

2025 sponsored events (~£21k):

ECR Forum (Manchester)

Perspectives in Nuclear Data (Glasgow)

AI in Nuclear Physics and Applications (IoP, London)

R3B Meeting (York)

BridgCE Meeting and School (York)

UK Nuclear Science Forum (Harwell Campus)

HYPATIA Science Workshop (IoP, London)

FAUST Science Workshop (IoP, London)

Nuclear Physics in Plasma Environments (IoP, London)

2026 (~£15k) – group and external events

ECR Forum (Brighton)

NP2050 Meeting (London)

Neutron detectors (TBC)

Radiation detectors, R&D and Commercialisation (TBC)

Active targets (York?)

ePIC ECR event

New windows on fundamental physics

Exotic hadron spectroscopy

ePIC international meeting

STFC summer school

BridgCE

Cluster-26

Nuclear Science Forum

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Nuclear Physics Group

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Cluster-26

Nuclear Science Forum

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IOP Institute of Physics | Home | Register your Interest | Venue | Hotels | Contacts

UK Nuclear Data 2026: A Renaissance

8–10 September 2026
Institute of Physics, London, UK

IOP Institute of Physics
Nuclear Physics Group

New initiative
UK Nuclear Data 2026: A Renaissance

Conference co-organized with IoP Nuclear Industry Group (Chair: Andrew Petts)

Bring together stakeholders (industry and national labs), researchers and funders for a conference on UK nuclear data requirements and capabilities

September 8th-10th 2026 at the Institute of Physics building (London) – save the date

Goal is to keep costs low: anticipate no registration fee for students, ~£250-£300 for non-student members*

Organizing committee from multiple institutions:
University of Surrey, EDF, NPL, UKAEA, UKNNL, AWE, University of Manchester, University of Glasgow, University of Cambridge, University of York, University of Lancaster, …

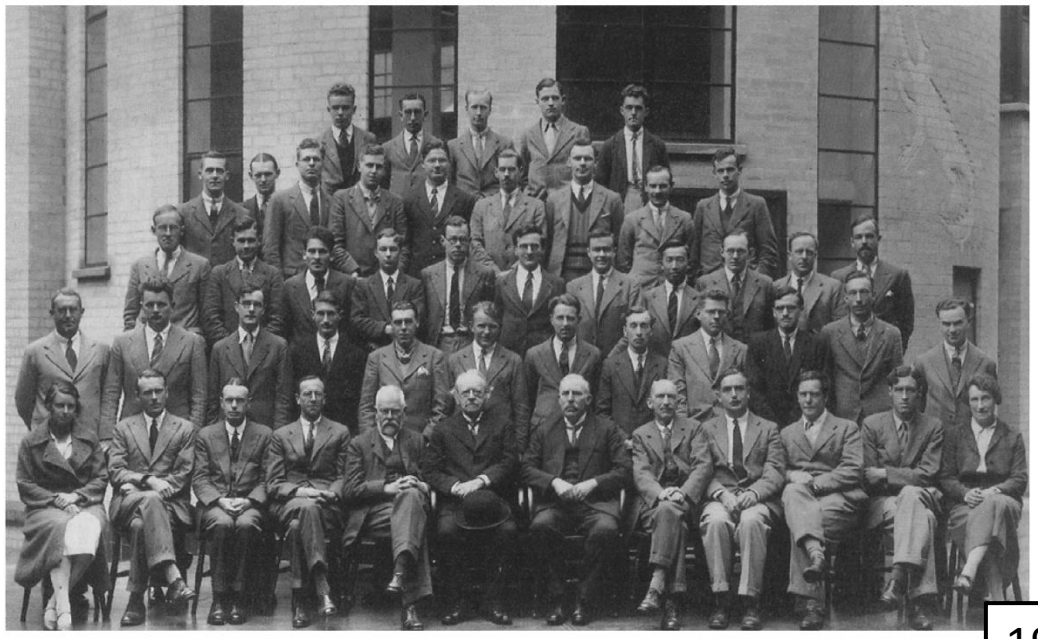
*depending on numbers and sponsorship level

IOP Institute of Physics
Nuclear Physics Group

New initiative
UK Nuclear Data 2026: A Renaissance

Conference co-organized with IoP Nuclear Industry Group (Chair: Andrew Petts)

Key topics: Nuclear data…
… pipeline(s) and processing,
… for fission power,
… for fusion power,
… for fundamental physics,
… for defense and security,
… for medical applications
Experimental methods in nuclear data,
Applications of nuclear theory to nuclear data



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Will include a poster session and focus will be on UK-based invited speakers

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UK Nuclear Physics in 2050:
Identifying Future Opportunities

27 March 2026
Institute of Physics, London, UK

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UK Nuclear Physics in 2050:
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IOP Institute of Physics
Nuclear Physics Group

A vision for UK Nuclear Physics in 2050: Towards an exact model of the atomic nucleus

Press release

UK's "Quantum leap" to help beat disease, deliver high-paid jobs, and strengthen national security, as first country in the world to roll out Quantum computers at scale

UK unveils new package of measures to become the first country in the world to roll out Quantum computers at scale.

Strategy

UKRI AI Research and Innovation Strategic Framework

From: UKRI
Published: 19 February 2026

National investment in quantum computing [exact many-body methods] and AI/ML [Hamiltonian development] offer the promise of an exact model of the atomic nucleus.

A national effort is required to maximise the impacts of these investments on nuclear physics [Nuclear theory] and provide a commensurate step-change in experimental capabilities

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Nuclear Physics Group

A vision for UK Nuclear Physics in 2050: Towards an exact model of the atomic nucleus

Conventional fragmentation/ISOL likely reaching the limits of their reach – novel approaches are required (discovery **or** precision): **Now** is the time to think about next-generation technologies.

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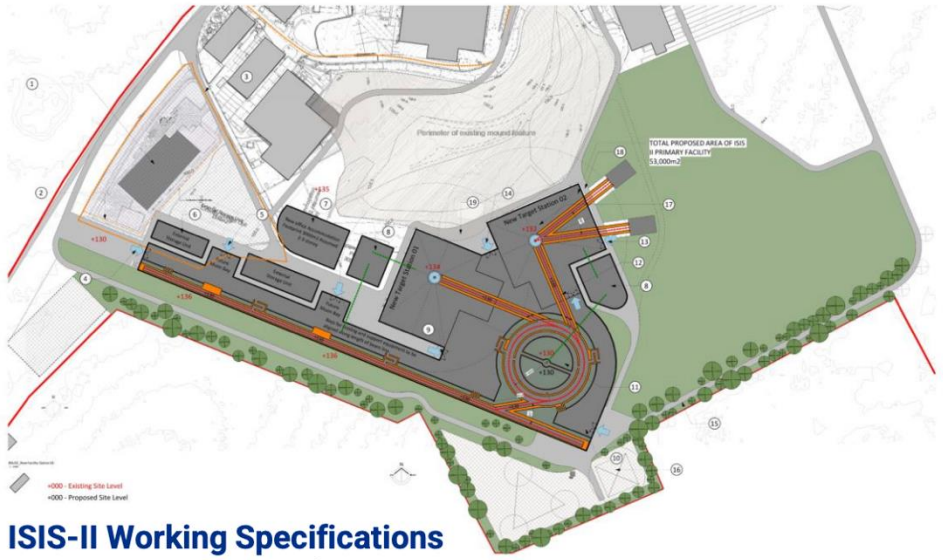

ISIS-II Working Specifications
1.25 MW proton accelerator
1.2 GeV beam on target
0.1% beam-loss

ISIS-II upgrade:

Is there a route for an ISOL-like (IGISOL?) facility? Neutron-induced spallation?

Would also provide access to studies of *novel radioisotopes*

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Nuclea

A vision for UK Nuclear Physics in 2050: Towards an exact model of the atomic nucleus

Conv tion/ISOL likely reaching the limits of their reach – novel approaches are requi recision): **Now** is the time to think about next-generation technologies.

EPAC | Extreme Photonics Applications Centre

EPAC is a new UK user facility at the CLF.

Article | Open access | Published: 01 April 2026

Single-event fast neutron time-of-flight spectrometry with a petawatt-laser-driven neutron source

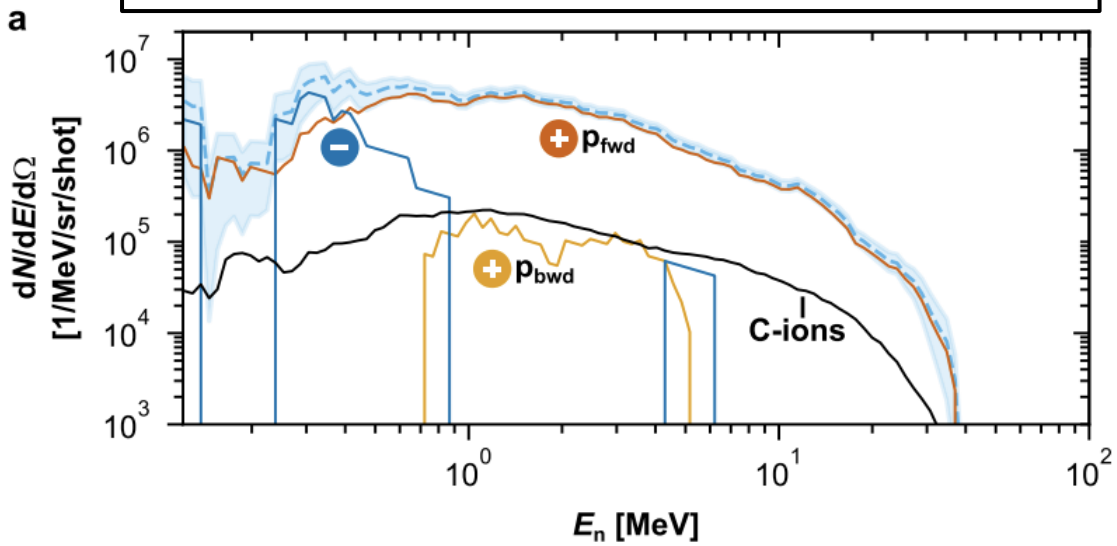
Article | Open access | Published: 24 January 2025

Stable laser-acceleration of high-flux proton beams with plasma collimation

Article | Open access | Published: 13 May 2024

Laser-driven high-energy proton beams from cascaded acceleration regimes

Millan-Callado, Nat. Comm. **17** 3154 (2026)



Area of UK leadership – laser accelerated ion/electron[photon] beams

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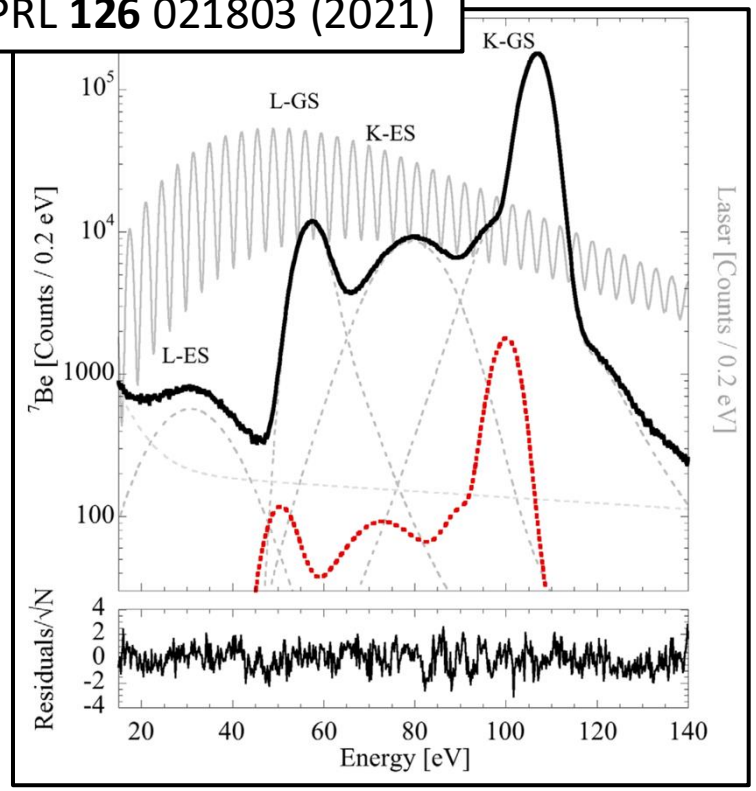
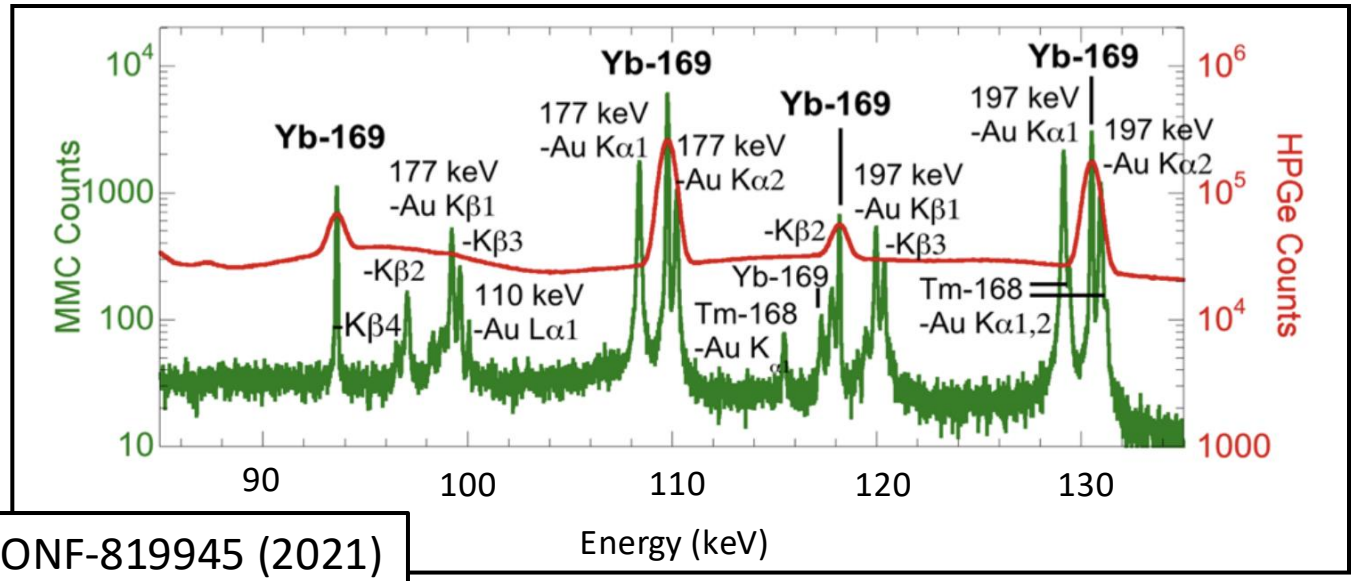
Friedrich PRL **126** 021803 (2021)



Quantum sensors (STJs & MMCs) provide exceptional resolution and sensitivity.

At present: **very** limited UK capacity (NPL).



Friedrich LLNL-CONF-819945 (2021)

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~~Welcome to the UK XFEL programme.~~

IOP Institute of Physics
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A vision for UK Nuclear Physics in 2050: Towards an exact model of the atomic nucleus

Few-page report incoming… [pending CG fatigue]

Meeting on 27th of March to pull together strands.

Summary/plan largely agreed.

Intended to be a *starting point* for future plans – not a comprehensive list.

Thanks to:
Philippos Papadakis (Daresbury-STFC)
Jack Bishop, Esra Yuksel, James Cubiss, Matteo Vorabbi, Tom Day Goodacre, Toby Wright, Kara Lynch, Ragan Singh Sidhu, Liam Gaffney, Robin Smith, Rachel Montgomery, Pascal Reiter, Carlo Bruno, Andy Briscoe, Frank Browne, Chris Cousins, Siddharth Doshi, Jacob Heery, Calum Jones, Joseph O'Neill, Connor O'Shea, Jagjit Singh

Thank you!