

## **Cockcroft Post-Graduate Researcher Conference – Wednesday 15<sup>th</sup> October 2025**

*Merrison Lecture Theatre, Daresbury Laboratory. Breaks in the Walton room*

09:00 – 10:30: Talk Session 1 - Novel accelerators (chair Brian McNeil)

- Patrick Dalton – Manchester - Development of a laser-driven THz source using periodically-poled lithium niobate wafers
- Filip Peczek – Manchester – TBC
- William Butcher - Liverpool - Experimental Investigation Into Supersonic Gas Jet Induced Beam Perturbation
- Aras Amini – Manchester - Terahertz-controlled external injection of electron bunches into a laser-plasma wakefield accelerator

10:30 – 11:00: Coffee break

11:00 – 12:30: Talk Session 2 - Frontier accelerators (chair Andrea Santamaria Garcia)

- Rancheng Bi – Lancaster - Ion Trapping and Accumulation in EIC ERL
- Qiyuan Xu – Liverpool - Towards radiation-hard transverse beam imaging with a multimode fiber and machine learning (remote)
- Ana Maria Guisao Betancur – Liverpool - Single-shot electron bunch profile monitor based on coherent transition radiation imaging

12:30 – 13:30: Lunch

13:30 – 15:00: Second year student posters

15:00 – 15:30: Coffee break

15:30 – 16:30: Talk Session 3 - Applications (chair Kristina Small)

- Rebecca Habgood – Manchester - Designing a Compact Range Shifter for Spatially Fractionated Proton Radiobiology Research
- TBC
- TBC

16:30 – 17:00: Close-out, poster and talk prizes

17:00 – 19:00: Pizza and chat

19:00 – 22:00: PGR student escape room social - <https://cluehq.co.uk/warrington/>

## Poster List

<i>Student</i>	<i>Institution</i>	<i>Talk Title</i>
Euan Smith	Manchester	FLASH VHEE Machine System Design
Sophie Gresty	Liverpool	Use of machine learning methods for designing multipole magnets for particle accelerators
Nattaphong Nuchsirikulaphong	Manchester	Comprehensive study of the impact of filling patterns and transition sets on beam breakup instability for multi-turn energy recovery linac
Niall Rhodes	Liverpool	Simulations of Gas Jet Density Down Ramps for Laser Wakefield Acceleration at ELI
Sruthy Chandran	Liverpool	Simulation and Feasibility Analysis of a Non-invasive Cavity Bunch Charge Monitor for Low-energy Antiproton Beams
Maleesh Shehan Rathnasiri Dissanayake Mudiyansele	Lancaster	Investigating the Potential Power Reduction Strategies for the UK-XFEL LINAC
Farhana Thesni Mada Parambil	Liverpool	Gas-Jet based Ionization Profile Monitor for Proton FLASH Therapy
Jordan Byrne	Manchester	External Injection Into Plasma to Produce VHEE Beams