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## Status update of the laser-hybrid accelerator for radiobiological applications

*Tuesday 3 June 2025 16:00 (2 hours)*

The Laser-hybrid Accelerator for Radiobiological Applications (LhARA) is a transformative approach to ion-beam therapy and radiobiological research. Serving the Ion Therapy Research Facility (ITRF), LhARA proposes to use a laser-driven proton and ion source, combined with advanced beam delivery systems, to provide highly flexible, high-repetition-rate, and ultra-short ion bunches suitable for groundbreaking studies in radiobiology. Following the recent publication of the LhARA Conceptual Design Report, the LhARA/ITRF project has entered a new phase of research and development. Here, we present a status update on recent LhARA progress. Highlights include improved understanding of the simulated beam generated at the source as well as subsequent impact on beam dynamics with co-propagating electrons, the latest descriptions of the FFA magnets including simulated fields and tune calculations in particle tracking and updated to beam delivery schemes in LhARA's end stations for generating flexible beam conditions.

### Footnotes

### Paper preparation format

LaTeX

### Region represented

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### Funding Agency

**Author:** SHIELDS, William (Royal Holloway University of London)

**Co-authors:** HILL, Clive (Science and Technology Facilities Council); WHYTE, Colin (University of Strathclyde); OWEN, Hywel (Science and Technology Facilities Council); PASTERNAK, Jaroslaw (Science and Technology Facilities Council); LONG, Kenneth (Imperial College London); PEREIRA, Matthew (Royal Holloway University of London); RAZAK, Rehanah (Imperial College London); KUO, Ta-Jen (Imperial College London)

**Presenter:** KUO, Ta-Jen (Imperial College London)

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