

# The development of a laser-hybrid approach to the delivery of ion beams for biomedical application

*Thursday 18 July 2024 15:15 (15 minutes)*

The “Laser-hybrid Accelerator for Radiobiological Applications”, LhARA, is being developed to serve the Ion Therapy Research Facility (ITRF). ITRF/LhARA will be a novel, uniquely-flexible facility dedicated to the study of the biological impact of proton and ion beams. The technologies that will be demonstrated can be developed to transform the clinical practice of proton and ion beam therapy (PBT) by creating a fully automated, highly flexible laser-driven system to:

\* Deliver multi-ion PBT in completely new regimens at ultra-high dose rate in novel temporal-, spatial- and spectral fractionation schemes; and

\* Make PBT widely available by integrating dose-deposition imaging with real-time treatment planning in an automatic, triggerable system.

The status of the ITRF/LhARA project will be described along with the collaboration’s vision for the development of a transformative proton- and ion-beam system.

## Alternate track

1. Technology Applications and Industrial Opportunities

## I read the instructions above

Yes

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**Session Classification:** Technology and Industrial Applications

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