

**UK Accelerator Institutes  
Seminar Series Autumn 2024  
(Session 11)**

**Report of Contributions**

Contribution ID: 1

Type: **not specified**

## LCLS-II Commissioning Results and Lessons Learned

*Tuesday 22 October 2024 15:30 (1 hour)*

PLEASE NOTE THE UNUSUAL DAY AND TIME OF THIS TALK. IT WILL TAKE PLACE IN THE MERRISON LECTURE THEATRE AT DARESBUURY LABORATORY AND ALSO BE BROADCAST VIA ZOOM.

In this talk, I will present the initial LCLS-II commissioning results and some lessons learned along the way. The injector and all 35 cryomodules have been operating stably for over a year up to 3.5 GeV. Starting this month (October 2024), further multipacting processing is taking place to increase the beam energy to 4 GeV. Beam performance metrics are actively being improved with further diagnostics and hardware installations, checkouts, and repairs. Initial delivery to early and in house users has taken place and is a priority for the next year as we ramp up performance.

**Presenter:** NEVEU, Nicole (Argonne National Laboratory)

Contribution ID: 2

Type: **not specified**

## The CERN Linear Accelerator for Research (CLEAR) User Facility at CERN: Status and Highlights of the Experimental Programme.

*Thursday 24 October 2024 16:15 (1 hour)*

The CERN Linear Accelerator for Research (CLEAR) is composed of a versatile 200 MeV electron linac followed by a 20 m experimental beamline, and is operated as a multi-purpose user facility at CERN. Running in parallel with the main CERN accelerator complex, but completely independent from it, CLEAR started operation in 2017 and has been providing electron beams to a large and varied range of experiments. The goal of CLEAR is to provide to users high-quality electron beams with flexible and rapidly-tunable parameters, coupled with high availability and easy access to the experimental area. The main areas of research and application include beam instrumentation R&D and prototyping, novel accelerating techniques, irradiation of equipment for radiation hardness studies and the exploration of the potential use of electron beams for radiotherapy (VHEE/FLASH). CLEAR also plays a strategic role in CERN by maintaining expertise for electron linacs linked to future collider studies and as a training infrastructure for the next generation of accelerator scientists and engineers. In this talk we will provide an outline of the facility and its operation mode, and give highlights of its past and present experimental programme, with particular attention to activities done in collaboration with the John Adams Institute for Accelerator Science.

**Presenter:** CORSINI, Roberto (CERN)

Contribution ID: 3

Type: **not specified**

## **PARTicle Therapy REsearch Center (PARTREC): From Nuclear Physics to Medicine**

*Thursday 7 November 2024 16:15 (1 hour)*

After 25 years of successful research in the nuclear and radiation physics domain, the KVI-CART research center in Groningen has been upgraded and re-established as the PARTicle Therapy REsearch Center (PARTREC). Using the superconducting cyclotron AGOR and being embedded within the University Medical Center Groningen, it operates in close collaboration with the Groningen Proton Therapy Center. PARTREC uniquely combines R&D programmes on radiation physics, nuclear physics, medical physics, biology and radiotherapy research with the main aim to improve hadron therapy technology and advanced radiation therapy for cancer. A number of further upgrades have established a wide range of irradiation modalities, such as pencil beam scanning, shoot-through with high energy protons and SOBP for protons, helium and carbon ions as well as delivery of spatial fractionation (GRID) and dose rates over 300 Gy/s (FLASH). The presentation summarizes the diverse research activities performed at PARTREC and delineates the path from accelerator and nuclear physics, to radiobiology and further to clinical treatment.

**Presenter:** GERBERSHAGEN, Alexander (PARTREC, UMCG, University of Groningen (NL))

Contribution ID: 5

Type: **not specified**

# Lasers for Accelerators and Recent Technology Development

*Thursday 14 November 2024 16:15 (1 hour)*

**Presenter:** DIVALL, Marta (Paul Scherrer Institute)

Contribution ID: 7

Type: **not specified**

## **CERN-MEDICIS: Experience of Mass-Separation with Radionuclides towards their Clinical Translation**

*Thursday 28 November 2024 16:15 (1 hour)*

CERN-MEDICIS produces radionuclides by mass separation for biomedical research. The facility exploits targets either irradiated with PS Booster high-energy proton beam or irradiated at cyclotrons and in research nuclear reactors at partner institutes that are part of the MEDICIS Collaboration. The facility extends isotope mass separation techniques towards the reliable and efficient production of radionuclides produced in batches. This triggered PRISMAP “production of radionuclides by mass separation for medical applications” funded as research infrastructure within H2020. The scope of PRISMAP+, as a follow-up programme is under development in the ERVI Roadmap.

In this context, we will report on the operational experience accumulated over the years for mass separation of various and innovative radionuclides. Indeed, radionuclides present large differences in ionization potential, degree of oxidation, volatility, which directly impact the release profile and total efficiency obtained by mass separation at MEDICIS along the past few years.

**Presenter:** STORA, Thierry (CERN)

Contribution ID: 8

Type: **not specified**

# Seminar