



Contribution ID: 1941 Contribution code: MOPG78

Type: **Poster Presentation**

Engineering of interaction region for a 200 keV inverse Compton scattering light source

Monday, 20 May 2024 16:00 (2 hours)

RadiaBeam is building an Inverse Compton Scattering (ICS) source with a complex Interaction Region to increase interaction efficiency. By colliding an infrared laser head-on with a tunable 60-100 MeV electron beam, up to 200 KeV photons are produced. This is done with a setup consisting of the final focus and recapture system, an interaction chamber, an infrared (IR) laser beam delivery system, and a dump dipole. The vacuum chambers are constructed with a central cube at the interaction point (IP) flanked by symmetric laser-injection cubes. The IR interaction laser is injected downstream of the IP and exits the vacuum envelope upstream of the IP. Multiple optical transition radiation (OTR) foils allow for tuning the electron beam for the 10-micron beam size. Alignment at the IP relies on OTR radiators and scraping pinholes.

Footnotes

Funding Agency

Department of Defense

Paper preparation format

Word

Region represented

North America

Primary author: HODGETTS, Tara (RadiaBeam)

Co-authors: MUROKH, Alex (RadiaBeam Technologies); AMOUDRY, Loïc (Université Paris-Saclay, CNRS/IN2P3, IJCLab); RUELAS, Marcos (RadiaBeam); BERRY, Robert (RadiaBeam Technologies); FOSTER, Robert (RadiaBeam); AGUSTSSON, Ronald (RadiaBeam); CHEN, Yung-Chuan (RadiaBeam Technologies)

Presenter: HODGETTS, Tara (RadiaBeam)

Session Classification: Monday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.A23 Other Linac Based Photon Sources