



Contribution ID: 1993 Contribution code: MOPR66

Type: Poster Presentation

Progress on the capillary plasma discharge source at UCLA

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

At UCLA, a plasma source using capillary discharge has been developed and studied for its potential use in plasma wakefield experiments at MITHRA and AWA facilities. This compact, 8-cm long source, has the ability to create plasmas covering a wide range of densities, making it suitable for various experiments involving plasma wakefield acceleration (PWFA). With a 3-mm aperture, it can transmit high-aspect ratio beams, and its adjustable density feature allows for a detailed exploration of the shift from linear to nonlinear PWFA stages. In this paper, we will delve into the construction and evaluation of this capillary discharge plasma source, as well as the utilization of an interferometric diagnostic system for measuring plasma density.

Footnotes

Funding Agency

This work was performed with support of the US Dept. of Energy, Division of High Energy Physics, under contract no. DESC0017648 and DESC0009914

Paper preparation format

LaTeX

Region represented

North America

Primary author: MANWANI, Pratik (University of California, Los Angeles)

Co-authors: CHOW, Derek (Particle Beam Physics Lab (PBPL)); ANDONIAN, Gerard (University of California, Los Angeles); ROSENZWEIG, James (University of California, Los Angeles); MAJERNIK, Nathan (SLAC National Accelerator Laboratory); KANG, Yunbo (Particle Beam Physics Lab (PBPL)); SAKAI, Yusuke (University of California, Los Angeles)

Presenter: MANWANI, Pratik (University of California, Los Angeles)

Session Classification: Monday Poster Session

Track Classification: MC3: Novel Particle Sources and Acceleration Techniques: MC3.A22 Plasma Wakefield Acceleration