



Contribution ID: 104

Type: **Parallel Session (Contributed Oral) talk**

High Intensity High Reliability Laser Ion Source Development at IMP

Monday 20 September 2021 06:20 (20 minutes)

The capability of the high intensity high charge state ion pulse production from light to medium-mass elements had been demonstrated by the laser ion source developed at IMP. Especially in terms of C₆₊ yield, the laser ion source can meet the requirements of cancer therapy facilities for filling the synchrotrons in a single turn injection mode. But for practical applications, the capability of long-term, continuous operation, repeatability and stability of the ion source is also what one must concern with. With the help of a new-developed control system and customized targets, the continuous operation of the laser ion source with the repetition rate below 1 Hz for tens of hours has been realized. The shot-to-shot fluctuations of the main ion pulse parameters, total charge quantity, pulse duration (FWHM) and peak current, were 5%, 8% and 11.5%, respectively, which are comparable with those obtained in single-shot operation mode and acceptable for the applications of laser ion sources.

E-mail for contact person

zhaohy@impcas.ac.cn

Funding Information

Primary author: ZHAO, Huanyu (Institute of Modern Physics, Chinese Academy of Sciences)

Co-authors: Mr ZHANG, Junjie (Institute of Modern Physics, Chinese Academy of Sciences); SUN, Liangting (Institute of Modern Physics, CAS); ZHAO, Hongwei (Institute of Modern Physics)

Presenter: ZHAO, Huanyu (Institute of Modern Physics, Chinese Academy of Sciences)

Track Classification: Production of high intensity ion beams