



Contribution ID: 177

Type: **Contribute Oral**

## Recent Research and Development of RF-Driven H-Sources at CSNS

*Tuesday, 19 September 2023 14:20 (20 minutes)*

The RF-driven ion source has been put into commissioning on China spallation neutron source (CSNS) accelerator since September of 2021. It has a service life time of more than 310 days and availability of almost 100%. To fully meet the requirements of CSNS project phase-II (CSNS-II), the beam intensity should be enhanced and the transverse emittance should be minimized. This report covers the recent research and development of the RF-driven  $H^-$  source, including the impurities elimination from the hydrogen plasma, the transverse emittance optimization, and space charge compensation study. A new test bench consisting of an ion source and an LEBT is constructed to carry out these measurements and research. A featured function of the LEBT is the electrostatic beam chopping. The influence of chopping electric field to the space charge compensation is also experimentally studied.

### Funding Agency

### Email Address

chenwd@ihep.ac.cn

### I have read the Code of Conduct to attend ICIS2023.

Yes

### Presenter if not the submitter of this abstract

**Primary author:** CHEN, Weidong (Institute of high energy physics, Chinese academy of sciences (CAS))

**Presenter:** CHEN, Weidong (Institute of high energy physics, Chinese academy of sciences (CAS))

**Track Classification:** Negative Ion Sources and Sources for Fusion Facilities