Contribution ID: **66**   Type: **Poster (by default)**

Multidimensional Characterization of a FEBIAD Ion Source and its Web-Interface Implementation for Offline and Online Operations

The ISAC-FEBIAD ion source is an electron impact ion source typically used to ionize radioactive molecules or isotopes of elements with ionization potentials higher than 10 eV. The source key tuning parameters are the anode voltage that defines the electron energy, and the magnetic field that controls the electron density inside the anode volume. Both values are only varied in a small and limited range. However, recent investigations have shown the need to explore the entire range of operational values accessible by the power supplies, due to the intrinsic variation from source to source arising from slight differences in manufacturing and assembling. Offline investigations led to a systematic and automatic measurement paradigm that shows how each target ion source unit can exhibit maximum efficiency in different operational settings. The online implementation has shown equivalent results on stable species. The algorithm has been implemented as a web interface thanks to the high-level application infrastructure available at TRIUMF. This work becomes relevant as the offline investigation will become crucial before operating the ion source online. By automatically scanning the operational space, it is possible to tune and optimize a stable ion beam, from which an optimal operation is expected for radioactive species of the same element.

Funding Agency

Email Address

maldonado@triumf.ca

I have read the Code of Conduct to attend ICIS2023.

Yes

Presenter if not the submitter of this abstract

Primary author: MALDONADO MILLAN, Fernando Alejandro (UVIC/TRIUMF)

Co-authors: GOTTBERG, Alexander (TRIUMF); BABCOCK, Carla (TRIUMF); KIY, Spencer (TRIUMF); DAY GOODACRE, Tom (TRIUMF)

Presenter: MALDONADO MILLAN, Fernando Alejandro (UVIC/TRIUMF)