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## Development of Low Energy Branch at Micro Analytical Centre, Ljubljana, Slovenia

*Thursday, 11 May 2023 16:30 (2 hours)*

A Low Energy Branch is being built at Micro Analytical Centre \* that will allow us to produce a variety of high current (up to 50  $\mu\text{A}$ ) ion beams, ranging from light (i.e. H, He, C, B, 15N), mid-mass (i.e. Si) to heavy (Ag, W, Pb, Bi) ion beams in the energy range of 100 eV up to 30 keV. Ions will be produced with the use of ion sources that are currently available at the facility.

The branch will provide beams: a) for implantation of gases into solid targets, b) for the creation of Nitrogen-Vacancy centres in diamond \*\* needed for quantum computing research, c) for simulation of the effects of solar wind on the lunar surface, d) for studies of ion-gas reactions at low energies and e) for commissioning of ion optics and testing of machine learning algorithms for automatic beam control.

The branch will employ electrostatic steerers for beam position control, Einzel lenses for minimising beam size, a magnetic dipole to purify the ion beam and a Wien filter to produce ion beams with the highest possible monochromaticity.

The poster will present the progress and development of the ion optics, experimental stations and beam profile monitors designed for the above branch.

### Funding Agency

### Footnotes

- P. Pelicon et al Nucl. Instrum. Methods Phys. Res. B 332 (2014) 229–233.

\*\* S. Pezzagna et al 2010 New J. Phys. 12 065017.

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Yes

**Primary author:** BRENCIC, Ziga (Jozef Stefan Institute)

**Co-authors:** SIMCIC, Jure (Jozef Stefan Institute); SKOBE, Matevz (Jozef Stefan Institute); VENCELJ, Matjaz (Jozef Stefan Institute); KELEMEN, Mitja (Jozef Stefan Institute); PELICON, Primoz (Jozef Stefan Institute); SIRCA, Simon (University of Ljubljana); BARBA, Ziga (University of Ljubljana)

**Presenter:** BRENCIC, Ziga (Jozef Stefan Institute)

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