

High current machine campaign with various ion species at GSI UNILAC

Tuesday 27 August 2024 16:00 (2 hours)

After dedicated machine upgrade measures at the GSI UNILAC, a high current beam campaign has been performed recently. The presented results were accomplished - among other things - with newly installed electrodes for the superlens (short RFQ-type matching section), working completely fault free.

Beam experiments have been conducted with high intensity proton beam (1.2 mA), carbon (1 mA $^{12}\text{C}^{6+}$) and nitrogen beam (5.4 mA $^{14}\text{N}^{7+}$) dedicated for pion production. A record argon beam intensity of 28 mA ($^{40}\text{Ar}^{11}$) has been obtained at gas stripper section. A sufficiently high stripping efficiency of 35% applying a pulsed N_2 gas stripper target could be realized. By achieving high-current performance for medium-heavy ions, a further step has been taken towards fulfilling the FAIR requirements for high-current operation. In this contribution the results of machine experiments are summarized, in particular the performance enhancement at the High Current Injector section (HSI).

Footnotes

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