Contribution ID: **2059** Contribution code: **MOPL118** Type: **Poster Presentation**

Status of the hydrogen gas stripper at the UNILAC at GSI

Monday, 8 May 2023 16:30 (2 hours)

High intensity heavy ion beams are a main constituent of the FAIR research program. They will be provided by the UNILAC via the high current injector HSI. Generated in high current sources, these ions originally have low charge states. To allow for efficient acceleration in the UNILAC and SIS18, a gas stripper is located at the end of the HSI to reduce the mass-to-charge ratio below 8.5. An effort has been made to enhance the stripping by introducing hydrogen instead of nitrogen as stripping target, thereby increasing the stripping efficiency by up to 60%. The main focus of the project is now on transforming the experimental setup into a system suitable for regular operation.
In 2022 the main effort was on the finalization of the technical and safety concept, which had been thoroughly revised last year and was awaiting final risk assessment. Additionally, solutions to some details had to be left open for discussion and decision with the help of external specialists. Both objectives were achieved and the technical and safety concept was approved with some modifications. Some of the planned safety measures were found to be unnecessary, resulting in a minor reduction of complexity and cost. The risk assessment was documented and the explosion safety document, relevant for later operation, compiled. Based on the design now being approved, the residual parts necessary for the gas stripper facility may be specified and procured and will be presented in this publication.

Funding Agency

Footnotes

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Session Classification: Monday Poster Session

Track Classification: MC1: Colliders and other Particle Physics Accelerators: MC1.A08: Linear Accelerators