Experiment Proposal: AR_2012_No8

Title	Author/Spokesperson
Scintillating Screen Response at slow/fast extraction	**A. Reiter (1431)** **B. Walasek-Höhne (1733)**

Summary & Aim

- These tests are part of **FAIR R&D Scintillating Screen Investigations**
- **Data necessary to complete measurements with slow extraction (by K. Renuka)**
- **Consistency check of screens with slow extraction required before test with fast extraction can start**
- Short summary:
  - Measurement of imaging properties of screens for fast extraction
  - Comparison of beam profiles to SEM grid data
  - Stability of light yield
  - Comparison of scintillation efficiency during fast and slow extraction (quenching)
- Fast extraction from SIS18 towards HTP beam line
- Requested beam time: 1 shift

Machine parameters

Machine	SIS18
Mode	Parasitic mode / B-exp
Exp. area	HTP
Ion species	any
Beam energy	any
Spill length	slow extraction (200 – 1500 ms)
Particle number	10^5 – 10^9
Repetition rate	0.1 Hz
Shifts	1
Beam Time Period	Autumn 2012 and later
Health & Safety	No issues

Experiment procedure

Fast extraction of ions (U, Ta) at 300 MeV/u (and other energies) towards HTP. Several screens to be investigated under bombardment with different particle numbers in spill.

Reference detector: RT and FCT, currently only NODAL readout of RT data exists!

Experiment Setup		
Exp. area	HTP	
Description of setup	Use existing setup. Screen ladder with 10 target positions. 2 CCD cameras available to cover large range of particle numbers Option: 1 CMOS camera (IDS µEye GigE) replaces 1 CCD	
Duration of setup	Permanent installation	
DAQ & Electronics **Software**	Use existing DAQ. Prepare FESA DAQ for future tests.	
Trigger	Extraction / Flat top; use appropriate delay, if needed	
Experiment Preparation / Required support **Estimated amount of time, manpower and equipment**		
Estimates or simulations	1 day	Calculation of signal (AR, BWH). Check of data with slow extraction as preparation!
Mech. Workshop	No	
Beam Line Installation	(Yes)	(Additional CMOS camera)
Electronics & DAQ	3 d	Setup of new hardware in AP container
Control System Integration	Possible	
On-site Tests	2 d	AR, BWH, CA
Modification of exp. area	No	
Dismantling of setup	No	
Remarks & Comments		

- **LAN Anschluss**
- **KISS PC für Software**
- **Aufbau Juni/Juli oder 1. Woche Sept. (FRS Beam)**