

# The next generation of implantation chambers for GPS

*Monday 17 December 2012 18:05 (1h 25m)*

In order to optimize beam-time usage and sample handling as well as radio protection a new GPS implantation chamber with advanced load-lock-system is currently being built. In addition to this implantation chamber a second chamber containing facilities for beam deceleration/acceleration with the sample held at a potential of up to  $\pm 60$  kV will be mounted right behind the first chamber. In this chamber implantations with an extended ion energy range in between  $\sim 0$  keV and 120 keV will be possible.

Both chambers are designed to enable shoot through operation and thus allow the usage of a third chamber (for bio-physics implantations, tracer diffusion etc.) without the need to remove them. The ion optics contained in the deceleration chamber can be used for improved focusing during shoot-through operation. Due to the load-lock-system in the implantation chamber samples can be interchanged in one chamber with implantations taking place simultaneously in the other chamber. The load-lock-system will also allow for implantations into tilted samples in order to avoid unwanted ion channeling.

We will discuss the chamber concept in detail and show the current state of construction.

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**Session Classification:** Poster session