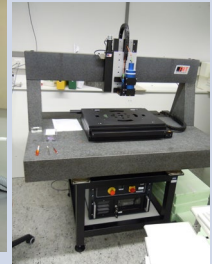
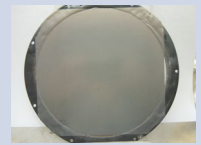


- The TargetLaboratory@FAIR/GSI provides a huge variety of methods to produce self-supporting heavy ion targets:
 - Deposition Techniques
 - Cold rolling mills
 - Mechanical Treatment
- Self-supporting films and layers over a wide thickness range are available:
 - Thin Films (10 nm -- $\sim \mu\text{m}$)
 - Cold Rolling ($0.5 \mu\text{m}$ -- $\sim 1 \text{ mm}$)
 - Massive Targets (1 mm – $\sim \text{cm}$)
- A huge variety of methods to prepare material for the heavy ion source are provided:
 - Thermal Treatment
 - Chemical Conversion
- For the analysis and quality control a huge variety of methods is available:
Optical Microscopes, Scanning Electron Microscope, Energy Dispersive X-Ray Analysis, High Precision Balances, UV-VIS Photometer, Mechanical Gauges, Optical Thickness & Surface Measurement



- The TargetLaboratory@FAIR/GSI and all its technology was developed for the original field of application research at heavy ion accelerators.
- The technology could have the following fields of application:
 - Specific coating technology especially in the field of development and production of detectors.
 - Test laboratory for analytics and quality control for new coatings and coating techniques.

Proposal SWOT Analysis

Strengths

- Huge variety of materials
- Huge variety of enriched isotopes
- Huge thickness variety
- Sophisticated analytics
- Sophisticated quality control

Weaknesses

- Only solid materials
- Not all materials are available over the whole thickness range
- No poisonous materials
- No radioactive materials beyond uranium

Opportunities

- Transfer of well-established methods to other fields

Threats

- Not known

- Advanced scientific and technical know-how proprietary to GSI.

For further information, the contact point is:

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The GSI Helmholtz Centre for Heavy Ion Research in Darmstadt operates one of the world's leading particle accelerator facilities for research. FAIR, an international accelerator center for research with antiprotons and ions, is currently being built at GSI in cooperation with international partners. It is one of the largest projects for research worldwide.

<https://fair-center.eu>; <https://www.gsi.de/en>