



Key aspects for the production of the ideal actinide target for the production of superheavy elements

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All isotopes of the elements with atomic numbers $Z \geq 114$ as well as many of the longer-lived isotopes also of lighter superheavy elements (SHE) are only accessible in fusion reactions with actinide targets. Accordingly, the production of actinide targets is an important topic in the field of SHE research. Relevant aspects that affect the production of the “ideal target” include:

- Availability of sufficient amounts of the isotope of interest, ideally in highly-enriched form
- In the absence of capabilities to produce self-supporting targets: the choice of the backing material and thickness
- Efficient production methods for the target layer, applicable to rare isotopes
- Production of the target layer in adequate areal density and elemental purity
- Beam-resistance of the backing/target combination
- Possibility to recycle the actinide material

I will discuss the actinide target production at the Department of Chemistry in Mainz and highlight topics that should be addressed by the community on the way to the “ideal” target for next-generation heavy-ion accelerator facilities serving a SHE program.