

Superheavy element research at GSI: recent results and future plans

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At GSI Darmstadt, a unique combination of experimental facilities is installed that allows addressing key questions in SHE research. Currently studied topics include:

- (i) synthesis of the heaviest elements
- (ii) nuclear reactions
- (iii) nuclear structure, with a focus on isomerism in $Z \sim 100 - 110$ nuclei
- (iv) direct mass measurements beyond fermium
- (v) atomic number identification of nuclides from ^{48}Ca -induced reactions on actinides
- (vi) chemical properties of the transactinide elements

I will start with a brief introduction to the current status of SHE research from a GSI perspective, also giving an overview on the GSI program and presenting recent highlights. The main part of my talk will be devoted to recent experiments performed at the gas-filled separator TASCA, dedicated to search for new elements beyond the heaviest claimed element with $Z=118$. In the last part I will discuss future perspectives for SHE research at GSI.