

## SYNTHESIS OF SUPERHEAVY ELEMENTS AT TASCA

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The superheavy elements (SHEs) Fl ( $Z = 114$ ) to Og ( $Z = 118$ ) have been discovered in  $^{48}\text{Ca}$ -induced reactions with actinide targets at the Dubna Gas-Filled Recoil Separator (DGFRS) at the Flerov Laboratory of Nuclear Reactions in Dubna, Russia [1]. Findings of these works were confirmed world-wide by different laboratories using the same reactions. With official IUPAC announcements on the discoveries and the naming of the four latest elements in 2016, the 7<sup>th</sup> row of Mendeleev's periodic table of elements has been completely filled. Accordingly, the synthesis of new superheavy elements beyond Og, which would start a new row in the periodic table, is currently a hot topic.

The gas-filled recoil separator TASCA installed at GSI Darmstadt, Germany, is one of few experimental setups where SHEs can be produced and both their physical as well as chemical properties can be studied. In the last decade, at TASCA the elements Fl, Mc ( $Z=115$ ) and Ts ( $Z = 117$ ) were synthesized [2-5]. Two experiments on the synthesis of elements with  $Z=119$  and 120 have been undertaken [6].

I will give an overview on the results of these experiments and an outlook on the ongoing physics program of the SHE-Chemistry group of GSI.

### References

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