TASCA 26
22nd Workshop on Recoil Separator for Superheavy Element Chemistry & Physics

Experimental priorites of the Heavy Element group in Switzerland

P. Steinegger [1,2]

[1] *PSI Center for Nuclear Engineering and Sciences, Villigen PSI, Switzerland*
[2] *Department of Chemistry and Applied Biosciences, ETH Zürich, Zürich, Switzerland*

Over the past five years, the Heavy Elements group at PSI / ETH Zurich has focused its attention on two main topics, namely (1) homolog experiments with thallium on fused silica for the future chemical characterization of Nh, and (2) isothermal vacuum chromatography (IVAC) for the investigation of the shortest-lived isotopes and enabling higher stationary-phase temperatures. For both topics, the development of high-temperature α-spectroscopy using the wide-bandgap semiconductor 4H-SiC is instrumental. Together with our collaborators, we have made significant progress in these areas (see, e.g., [1,2]). While pursuing the next Nh chemistry experiments in collaboration with the Institute of Modern Physics, Chinese Academy of Sciences, in Lanzhou, China, we plan to rework the IVAC setup to meet the requirements for a first Mc experiment *in vacuo* at RIKEN (in collaboration with the Folden group at Texas A&M University, USA, and others). Furthermore, our group strives to revive the CO collaboration for next $Sg(CO)_6$ decomposition studies and is probing the waters for first electrochemistry experiments with roentgenium (together with colleagues from CTU in Prague, Czech Republic). These efforts have evolved out of experiments directed to radioanalytical applications [3,4]. This talk will highlight the current status of the projects of the Heavy Elements group at PSI / ETH Zurich and discuss the next steps we plan to take together with our collaborators.

References

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