Progress report on Laser Resonance Chromatography (LRC)

E. Romero-Romero[1,2], M. Block[1,2,3], E. Kim[1,2], S. Raeder[2,3], E. Rickert[1,2,3,] M. Laatiaoui[123]

Supervisor: M. Laatiaoui[123]

[1] *Department Chemie, Johannes Gutenberg-Universität Mainz, Mainz, Germany*
[2] *Helmholtz Institut Mainz, Germany*
[3] *GSI Helmholtzzentrum für Schwerionenforschung GmbH, Darmstadt, Germany*

The research of superheavy elements has been an exciting endeavour for scientists for many decades, as it enables probing the limits of nuclear existence and provides a fertile ground to advance our understanding of the atom's structure. However, the experimental access to these atomic species is very challenging and often requires the development of new technologies and experimental techniques optimized for the study of a single atomic species. Laser Resonance Chromatography (LRC) technique, was conceived to enable atomic structure investigations in the region of superheavy elements [1,2]. Here, we give an update on the experimental progress, simulations, and initial experimental results.

References

[1] J. Reader A. Kramida, Yu. Ralchenko and NIST ASD Team (2018), 2019.

[2] M. Laatiaoui et al., Physical Review Letters 125.2 (2020): 023002.