



Contribution ID: 899

Type: **Plenary**

## Superheavy Element Chemistry –from history to future

*Monday, 16 May 2022 09:30 (30 minutes)*

A. Yakushev<sup>1,2</sup>, Ch.E. Düllmann<sup>1,2,3</sup> for the TASCA collaboration

<sup>1</sup>GSI Helmholtzzentrum für Schwerionenforschung GmbH, 64291 Darmstadt, Germany

<sup>2</sup>Helmholtz-Institut Mainz, 55099 Mainz, Germany

<sup>3</sup>Johannes Gutenberg University Mainz, 55099 Mainz, Germany

Chemical studies of the transactinide elements chemistry began 60 years ago with studies of the first transactinide element, rutherfordium (Rf,  $Z = 104$ ). An experimental method of gas chromatography was applied for chemical separations of many superheavy elements up to element 115, moscovium, the first chemical study of which was recently performed at the recoil separator TASCA at GSI Darmstadt, Germany. The chemical studies of the heaviest elements are subject to drastically decreasing production rates and lifetimes with increasing  $Z$ . This calls for developments of new highly efficient and fast techniques. This talk presents a brief historical overview of achievements in the chemical studies of the superheavy elements in the gas phase, recent results, and new developments for future experiments by the TASCA chemistry collaboration.

**Primary authors:** YAKUSHEV, Alexander (GSI Helmholtzzentrum für Schwerionenforschung GmbH); DÜLLMANN, Christoph

**Presenter:** DÜLLMANN, Christoph

**Session Classification:** Plenary

**Track Classification:** Chemistry of Actinide and Trans-actinide Elements