



Contribution ID: 899

Type: **Plenary**

Superheavy Element Chemistry –from history to future

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

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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.

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Session Classification: Plenary

Track Classification: Chemistry of Actinide and Trans-actinide Elements