THE PHYSICS COLLOQUIUM

Thursday 14 November 2024, 4:00 p.m.
Nijenborgh 4, Lecture Hall 5111.0080

From Polonium to Oganesson - Chemistry at the far End of the Periodic Table

Patrick Steinegger

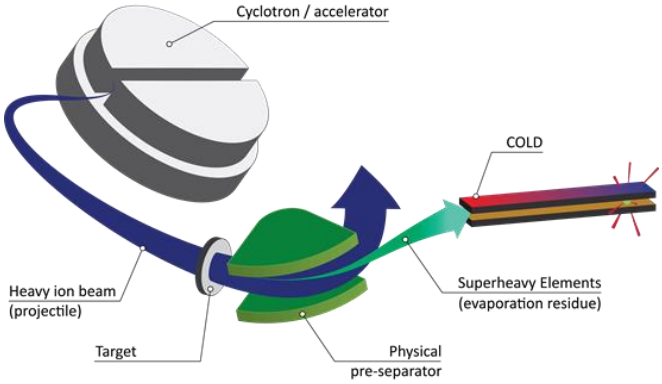
ETH Zürich

The chemical characterization of superheavy elements (Z > 103) helps us to understand how relativistic effects influence the chemistry of the heaviest elements. Since there is no evidence for their existence in nature, isotopes of these exotic elements must be produced at the single atomic level with intense heavy ion beams from large accelerators and in combination with heavy actinide targets. Due to the low production rates and short half-lives of the produced radionuclides, a suitable chemistry experiment has to be tuned for highest efficiencies and fast processing times.

This talk will first focus on the basics of gas phase chemistry experiments with superheavy elements including some examples.

The main part of the talk will be devoted to the chemical characterization of nihonium (Nh, Z = 113) and our future experimental plans with other superheavy elements.

Lastly, I will shortly discuss how we can connect this rather fundamental research topic with more applied fields of radiochemical research.



Join us for coffee starting 3:30 p.m. Refreshments will be served after the lecture.

For more information contact the host: Anastasia Borschevsky (a.borschevsky@rug.nl)
Website: http://www.rug.nl/research/vsi/colloquia/