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ORAL PRESENTATION - Thermochromatography study of volatile Tellurium species in various gas atmospheres.

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Lead-Bismuth Eutectic has been proposed as spallation neutron target and as a coolant for Accelerator-Driven System. One of the main issues of using LBE is related to the production of Polonium and its potential release. Tellurium was chosen as surrogate in order to designing experimental set-ups for investigating gas-phase chemical properties of Polonium and its compounds.

Carrier-free amounts of elemental Tellurium, Tellurium oxides and hydroxides formed at 950 °C in various flowing carrier gasses were studied by thermochromatography in quartz glass columns.

Partitioning of the various compounds in quartz glass column was deduced measuring the β -emission from the long-lived ^{123m}Te at 212 KeV.

Enthalpies of adsorption of Te, TeO, TeO₂ and TeO₃ on quartz surface were deduced from the observed deposition temperatures using a Monte Carlo method. The potential chemical reactions occurring at different temperature are discussed.

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