CHEMICAL IDENTIFICATION OF A LONG-LIVED ISOTOPE OF DUBNIUM, A DESCENDANT OF ELEMENT 115

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The recognition criterion for discovery of a new chemical element includes two aspects, the characterization properties and the assignment properties. In this presentation, we will discuss the status of element 115 experiments that have been performed in Dubna, Russia, highlighting the characterization and assignment properties as they specifically relate to a recent experiment. After presenting the status of what is known about the decay properties of element 115 [1], observed previously using the Dubna Gas-Filled Recoil Separator, we will discuss the prior chemical studies that heve been performed on the Db descendant of element 115 [2]. Following the success of that experiment, some additional chemical information was desired. A novel separation chemistry was then developed at LLNL. We utilized reversed phase chromatography to perform not only a $+4/+5$ separation, but also an intra-group separation, where Nb-like and Ta-like fractions were eluted. The results from an experiment using that chemistry for the first time during December 2005 in Dubna, Russia, will be compared with prior chemical results. We will conclude with a discussion of possible enhancements to the work already performed and the current status of the future experimental plans.

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References

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[2] S.M. Dmitriev, et al., *Mendeleev Commun.*, v. 1, p. 1-4, 2005.