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Laser Resonance Chromatography

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Optical spectroscopy of superheavy elements is experimentally challenging as their production yields are low, half-lives are very short, and their atomic structure is barely known. Conventional spectroscopy techniques such as fluorescence spectroscopy are no longer suitable since they lack the sensitivity required in the superheavy element research. A new technique called Laser Resonance Chromatography (LRC) could provide sufficient sensitivity to study super-heavy ions and overcome difficulties associated with other methods. In this contribution, I will introduce the LRC technique and describe the result of the first LRC test experiments. This work is supported by the European Research Council (ERC) (Grant Agreement No. 819957).

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