HIGH INTENSITY METALLIC ION BEAMS FOR SUPERHEAVY ELEMENTS

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The studies of heavy and superheavy elements (SHE) did widely benefit form intense beams of doubly magic 48Ca. This enabled synthesis of new elements up to Oganesson *(Og, Z=118)*[1] using ^{48}Ca beam on actinides targets up to Californium[1,2] as well as Spectroscopic studies of very heavy elements (VHE) up to Lawrencium *(Lr, Z=103)* using ^{48}Ca beam associated to stable targets up to Lead and Bismuth[3]. Production of heavier elements needs metallic beams of ^{50}Ti, ^{51}V and ^{54}Cr to overcome the natural limits set by the actinide and lead targets. The MIVOC[4] technique enables good production efficiency of these beams with low material consumption. Isotopic MIVOC compounds of $^{50,47,46}Ti$, ^{51}V and ^{54}Cr were produced at IPHC Strasbourg. This enabled the first prompt spectroscopy of a super-heavy element: ^{256}Rf *(Z=104)* at the University of Jyväskylä.[5,6] High intensity MIVOC Beams were then successfully accelerated in FLNR Dubna,[7] GANIL Caen[8] and in RILAC at RIKEN.[9] Prospects for metallic beams for SHE synthesis with intensity up to several particle micro ampere using MIVOC and new inductive oven methods will be discussed.

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