RESULTS OF THE HEAVIEST SINGLE AND MULTIPLE BETA-DELAYED NEUTRON EMITTERS MEASURED SO FAR

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The β-delayed neutron emission probability, Pn, of very neutron-rich nuclei allow us to achieve a better understanding of the nuclear structure above the neutron separation energy, Sn, and astrophysical phenomena such as the rapid neutron capture process (r-process). More than 600 of the presently known isotopes are energetically allowed β–delayed neutron emitters, but the branching ratio has only been determined for around 30% of them. β-delayed one-neutron emitters (β1n) have been experimentally measured up to A~150, plus a single measurement of ^{210}Tl. Concerning two-neutron emitters (β2n), they are only known up to masses around A~100. Recent experiments performed at GSI Darmstadt (Germany) and the IGISOL facility in Jyväskylä (Finland) allowed to measure heavier isotopes and determine their Pn values with a 4pi neutron detector based on ^{3}He counters and named BELEN [2]. At GSI it was possible to measure β1n emitters for several Hg and Tl isotopes with masses beyond A>200 and N>126, and at IGISOL the heaviest β2n emitter ^{136}Sb was identified. This contribution will report these recent results of P1n and P2n values together with the new plans for β-delayed neutron emitter measurements at RIKEN (Japan). The BRIKEN project aims to perform measurements of more than a hundred of β1n, and many β2n and β3n emitters, a lot of them for the first time. These isotopes will be the most neutron-rich species measured so far.

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