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## Search for X-rays characteristic of element with $Z = 120$

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Super-heavy compound nuclei ( $Z = 120$  and  $124$ ) with long fission times ( $t \geq 10$ - $18$ s) have been recently evidenced through experiments [1] applying the crystal blocking technique. This method, because it requires high quality monocrystalline targets, cannot be generalized to define and locate possible islands of stability in the super-heavy region. An alternative approach is to use the fluorescence technique which looks for emission of X-rays characteristic of the compound nucleus formed. The first reaction studied in this way has been  $^{238}\text{U}+^{64}\text{Ni}$  at  $6.6$  MeV/nucleon leading to  $Z=120$  compound nuclei. We will discuss this method and its application for the very first time in the super-heavy elements region, and present our latest results and conclusions.

[1] M. Morjean et al., PRL 101 (2008) 072701

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