

The SFiNx Detector System

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A new detector system SFiNx (Spontaneous Fission, Neutrons and X-rays) for on-line investigation of the SF properties of short-lived heavy nuclei synthesized in complete fusion reactions was created in FLNR (Fig. 1). The neutron registration efficiency is $(55 \pm 1) \%$.

As a result of an experimental series on SHELS separator, the prompt neutrons yield data from spontaneous fission obtained for heavy nuclei with $Z = 100 - 106$. The prompt neutron yields for $^{250,254}\text{No}$, ^{256}Rf and ^{260}Sg isotopes obtained for the first time and significantly refined for the isotopes $^{244,246}\text{Fm}$ and ^{252}No (Fig. 2).

Using the SFiNx system and the GRAND gas-filled separator at the JINR Superheavy Elements Factory, it will be possible for the first time to obtain data on the emission of prompt neutrons from the heaviest nuclei.



Fig. 1. The SFiNx detector system.

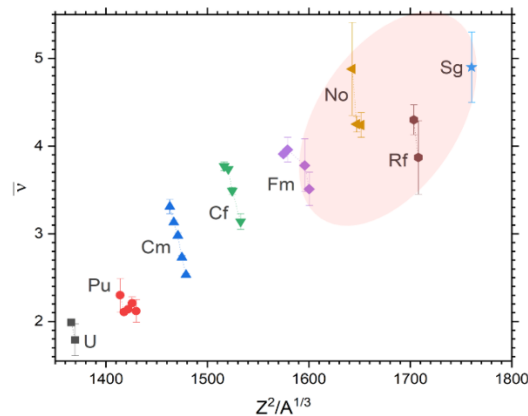


Fig. 2. Systematics of the average number of neutrons per spontaneous fission decay. The oval marks the data obtained with the SHELS separator.