# IDENTIFICATION OF NUCLIDES IN $^{237}$Np, $^{238}$U TARGETS AFTER THEIR IRRADIATION BY THE "QUINTA" NEUTRON FIELD

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The aim of this work is to study the gamma spectra of the nuclei produced in the $^{238}$U and $^{237}$Np targets. The experiments were carried out within the framework of the project "Energy and Transmutation of RAW" and aimed at solving the problem of the transmutation of actinides - neptunium, americium and plutonium.

The aim of this paper is to compare the cross sections for the capture and fission reactions at different radii of the "Quinta" setup and to determine their ratio [1] for the residual nuclei in the $^{237}$Np (Fig.1), $^{238}$U targets in the neutron field [2, 3] at different radii (R max ~ 150 mm) of uranium ($^{238}$U) assembly "Quinta" with its irradiation by protons with energy 660 MeV.

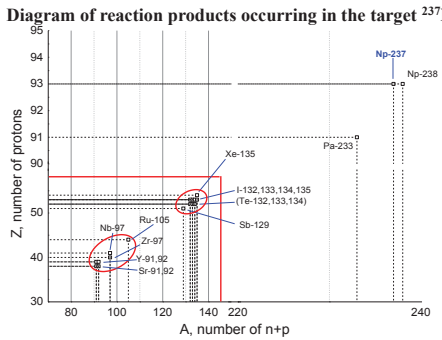


*Fig.1. Diagram of reaction products occurring in the target $^{237}$Np.*

There are two channels for the interaction of actinides with neutrons – fission and capture [1]. The activity of the formed products is determined by registration of the gamma radiation by germanium detectors.

In the report, the experimental results are compared with calculations for different neutron energies.

1. S.Kilim *et al*. // Nucleonica. 2018. V.63(1). P.17.
2. S.I.Tyutyunnikov // 24-Inter. Baldin Seminar, Russia, Dubna, September, 17-22, 2018.
3. A.A.Smirnov, V.I.Stegailov, S.I.Tyutyunnikov, *et al.* // "Nucleus2015", St-Petersb. P.257.