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The New Collaboration of the JINR and the iThemba LABS for Cross-Section (n,xn) Reactions Measurements

In the recent years, scientific interest in the feasibility study of accelerator driven sub-critical systems (ADS) for transmutation of the long-lived components of radioactive wastes (RAW) is very high. ADS systems are a part of research on future reactor IVth generation. The high-energy neutrons are an ideal tool to induce fission in most transuranic isotopes. The cross-sections for nuclear reactions induced by neutrons below 30 MeV are generally considered to be reasonably well known. There is a lot of interest to measure cross-sections of neutron induced reactions in the low and high energy regions and improve nuclear models at incident energies below 30 MeV as well as above 30 MeV. We are proposing a new measuremnt programan for Y, Bi, Co, Au (n,xn) cross section. On the begining we propose experiments which requires various neutron energies; 56 MeV, 66 MeV, 100 MeV and 180 MeV.

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