

STUDY OF $^{209}\text{Bi}(\gamma, \text{xn})$ RELATIVE REACTION YIELDS IN ENERGY RANGE 35-60 MeV

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In order to study relative yields of $^{209}\text{Bi}(\gamma, \text{xn})$ reactions, samples of 99.99% pure bismuth-209 were exposed at LINAC-200 electron beam with tungsten convertor at energies 35, 40, 45, 50, 55, 60 MeV. Activities of obtained products of photonuclear reactions with different neutron multiplicity, from $(\gamma, 2\text{n})$ to $(\gamma, 7\text{n})$ were measured. Relative yields normalized to ^{206}Bi yield were calculated. Obtained yields were compared with the experimental results already available in EXFOR database.

Yields obtained by measurements were compared with the results of theoretical calculations and data from public nuclear databases such as IAEA-2019, LEND-99 and TENDL-2021. Bremsstrahlung spectra and various systematic effects were simulated by GEANT4.