

**PHOTONEUTRON CROSS SECTIONS MEASUREMENTS IN ^9Be
WITH THERMAL NEUTRON CAPTURE GAMMA-RAYS**

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Photoneutrons cross sections measurements of ^9Be have been obtained in energy interval between 2 and 10,8 MeV, using neutron capture gamma-rays with high resolution in energy (3 a 21 eV), produced by 22 target materials, placed inside a tangential beam port, near the core of the IPEN/CNEN-SP IEA-R1 (2MW) research reactor. The sample have been irradiated inside a 4π geometry neutron detector system “Long Counter”, 520,5 cm away from the capture target. The capture gamma-ray flux was determined by means of the analysis of the gamma spectrum obtained by using a Ge(Li) solid-state detector (EG&G ORTEC, 25 cm³, 5%), previously calibrated with capture gamma-rays from a standard target of Nitrogen (Melamine). The neutron photoproduction cross section has been measured for each target capture gamma-ray spectrum (compound cross section). A methodology for unfolding the set of experimental compound cross sections, have been used in order to obtain the cross sections at specific excitation energy values (principal gamma line energies of the capture targets). The cross sections obtained at the energy values of the principal gamma lines were compared with experimental data reported by other authors, with have employed different gamma-ray sources. A good agreement was observed among the experimental data in this work with reported in the literature.