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## JENDL PHOTONUCLEAR DATA FILE

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Nuclear data for photonuclear reactions are required in the field of shielding design of high-energy electron accelerators and high-energy gamma-ray therapy. In the former field, it is highly desirable to perform accurately shielding design of an accelerator building in order to thin the shielding walls as much as possible. In high-energy electron accelerators, the shielding designers mainly analyzed behavior of electrons and bremsstrahlung photons until now. It is, however, clear that neutrons from photonuclear reactions by the bremsstrahlung photons must be also considered for the purpose of precise estimation of the influence of secondary radiations. In the latter field, it is also important to estimate dose from photoneutrons in order to avoid undesirable irradiation. From these demands for the photonuclear data, a working group on nuclear data evaluations for photonuclear reactions has been organized under an activity in Japanese Nuclear Data Committee (JNDC). From a survey of many literatures, we reached the conclusion that it is difficult to construct the photonuclear data file if we adhere to evaluation method to use measured cross sections only, since there are not sufficient experimental data necessary for the evaluation. For instance, there scarcely exist energy spectra and double-differential cross sections (DDX) for emitted particles which were measured using quasi mono-energetic gamma-rays. We were therefore proceeding the evaluation work with the help of theoretical calculation based on statistical nuclear reaction models. The photonuclear cross sections that are to be contained in the forthcoming data file are as follows: photoabsorption cross sections, yield cross sections and DDX for photoneutrons, photoprotons, photodeuterons, phototritons, photo-<sup>3</sup>He-particles and photoalpha-particles, isotope production cross sections. For the actinide nuclides, physical quantities related to photofission reaction are also included. The maximum energy of incident photons is 140 MeV because the evaluation work becomes very hard once the pion production channel opens.

The JENDL Photonuclear Data File is planned to be constructed using ENDF-6 format and to be released as soon as possible after review processes. Now we have compiled the photonuclear data for 68 nuclides from H-2 to Np-237.