

## Nuclear Data Center (NDC) of KAERI

Progress Report to the  
Technical Meeting of Nuclear Reaction Data Centers (NRDC)  
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### 1. General

Nuclear Data Center (NDC) of Korea Atomic Energy Research Institute (KAERI) has a director, 10 staff members (2 in evaluation, 2 in measurement, 1 in atomic and molecular data, 3 in processing and validation, 2 in applications), 2 postdoctoral researchers, 2 students and 1 secretary. The reactor physics laboratory was recently established in KNDC and 4 staff members joined the center.

Nuclear data are required in the R&D of nuclear technology and related fields. Its research consists on measurement, evaluation, processing and validation of nuclear data. The research is necessary to ensure safety and economics of nuclear technology. KNDC was established with the mission that is to provide nuclear data on time for nuclear power and related fields. KNDC is disseminating outcomes of international network as well as promoting domestic nuclear activities and related applications.

KAERI/NDC is performing nuclear data compilation/evaluation, processing and validation in close cooperation with the international nuclear data network, namely:

- Compilation of nuclear data into EXFOR under the guidance of IAEA/NDS
- Participating in the formal JEFF and WPEC subgroup of NEA
- Measurement of neutron capture for U-238 with EC-JRC-IRMM
- Evaluation of nuclear data for Fe-56 with BNL

### 2. EXFOR Activity

We are continuing data compilation for nuclear reaction data obtained in Korea under the guidance of IAEA/NDS.

The total 18 Entries were produced and listed in Table 1. These entries contain the

experimental data for the production cross sections by proton induced reaction and photonuclear reaction using the bremsstrahlung beam, isomeric yield ratio induced by bremsstrahlung, and the neutron capture cross section.

Table 1. Compilation statistics

#	TRANS	ENTRY	SUBJECT	STATUS
1	G033	G3113	Gamma	EXFOR
2	G033	G3114	Gamma	EXFOR
3	D099	D7011	Charged particle	EXFOR
4	G033	G3115	Gamma	EXFOR
5	G033	G3116	Gamma	EXFOR
6	G033	G3117	Gamma	EXFOR
7	G033	G3118	Gamma	EXFOR
8	D101	D7012	Charged particle	EXFOR
9	G033	G3119	Gamma	EXFOR
10	D101	D7013	Charged particle	EXFOR
11	G035	G3120	Gamma	PRELIM
12	3172	30834	Neutron	EXFOR
13	3173	30835	Neutron	EXFOR
14	D102	D7014	Charged particle	EXFOR
15	D102	D7015	Charged particle	EXFOR
16	D103	D7016	Charged particle	EXFOR
17	D103	D7017	Charged particle	EXFOR
18	D103	D7018	Charged particle	EXFOR

- **Checking Code**

The draft is checked through the following website.

<http://www.jcprg.org/exfor/tool/>

### **3. Cooperation with domestic experimental group**

The workshop on Nuclear Data Measurement and Related Subject was held on December 3 – 4 in 2015. This annual workshop was organized by Kyungpook National University (KNU) and supported by Dongnam Institute of Radiological & Medical Sciences (DIRAMS), Pohang University of Science and Technology (POSTECH), and our center (KNDC).

The purpose of the workshop is to share recent activities and achievements on nuclear data measurements and evaluations.

#### **4. Website service**

KNDC website was redesigned and updated continuously. The main aim of this update is to pack more information on one page reducing the need to search across multiple locations. The newly designed table of nuclides allows the user to easily navigate through the nuclides and will provide the following data on a page describing the nuclide.

#### **5. Facilities**

KNDC is coordinating measurements of Pohang Neutron Facility of Pohang Accelerator Laboratory (PAL), MC-50 cyclotron at Korea Institute of Radiological and Medical Sciences (KIRAMS), and proton linear accelerator of Korea Multi-purpose Accelerator Complex (KOMAC) for the measurements of nuclear reaction data. An electron linear accelerator of KAERI for the fast neutron measurement and a heavy-ion accelerator of Institute for Basic Science (IBS) are planned to be built.