

## Report on EXFOR Compilation 2016 from the RIBF

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Nuclear reaction data are used in various fields (nuclear physics, engineering research, medical, etc.) and can be accessed through the Internet from a nuclear database when a computer is connected. The database is constructed in a special format called EXFOR (EXchange FORmat for experimental nuclear reaction data)<sup>1)</sup> which is designed to accommodate experimental data with corresponding bibliographies and experimental descriptions including error analysis for proper interpretation of the stored experimental data.

EXFOR is maintained by the International Atomic Energy Agency (IAEA)<sup>2)</sup> and the International Network of Nuclear Reaction Data Centres (NRDC). The NRDC collaborates in the compilation of experimental data and development of related software for compilation and dissemination. The Hokkaido University Nuclear Reaction Data Centre (JCPRG)<sup>3)</sup> is a member of NRDC and has contributed about 10% of the charged-particle nuclear reaction data in the EXFOR library. JCPRG provides the compiled nuclear reaction data in both the international (EXFOR) and domestic (NRDF)<sup>4)</sup> formats through an online search system.

Under collaboration with the NRDC network, experimental data published in scientific journals are continuously surveyed. Among the data obtained, the data on charged-particle and photon induced reactions obtained from the facilities in Japan should be compiled by JCPRG. We assign new papers for the compiler and check all papers finalized for compilation by the JCPRG members. For improving the quality of contents, we contact authors to provide the original numerical data plotted in each figure to ensure the accuracy of data compiled in the NRDF and the EXFOR library. If the original data cannot be obtained from the corresponding author, we digitize numerical data from the plotted figures with the digitization software GSYS<sup>5)</sup>.

We have also cooperated with the RIKEN Nishina Center for compilation since 2010. The purpose of the cooperation is to increase the availability of the nuclear reaction data produced at the RIBF. The compiled files of nuclear data produced at the RIBF are translated into the EXFOR format for the benefit of nuclear data users. In this article, we report our activities in 2016, especially the compilation of experimental nuclear reaction data from the RIBF.

In 2016, we compiled 37 new papers reporting experiments performed in Japan. Among them 15 papers

were based on RIBF data and those data satisfy the compilation scope of the EXFOR library. All data are accessible by the entry numbers listed in Table 1.

We have established an effective procedure to compile all of the new publications during the last six-year collaboration with the RIKEN Nishina Center. Therefore, most of the recent experimental nuclear reaction data are provided by the authors but we digitized numerical data of E2487<sup>9)</sup> and E2488<sup>10)</sup> entries using the digitization software GSYS. Such additional information is also available with a list of compiled RIBF data on the JCPRG website<sup>6)</sup>.

Table 1. Entry numbers with references compiled from RIBF data in 2016

Entries	E2483 <sup>7)</sup>	E2485 <sup>8)</sup>	E2487 <sup>9)</sup>
	E2488 <sup>10)</sup>	E2592 <sup>11)</sup>	E2493 <sup>12)</sup>
	E2495 <sup>13)</sup>	E2500 <sup>14)</sup>	E2504 <sup>15)</sup>
	E2506 <sup>16)</sup>	E2507 <sup>17)</sup>	E2511 <sup>18)</sup>
	E2515 <sup>19)</sup>	E2516 <sup>20)</sup>	E2522 <sup>21)</sup>
Total	15		

### References

- 1) <http://www.jcprg.org/exfor/>
- 2) <http://www-nds.iaea.org/>
- 3) <http://www.jcprg.org/>
- 4) <http://www.jcprg.org/nrdf/>
- 5) <http://www.jcprg.org/gsys/>
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