

**Ukrainian Nuclear Data Centre Progress Report, 2011/12**  
**Summary of Nuclear Data Studies by Staff of the Ukrainian Nuclear Data Centre**  
**Editor: O. Gritzay**

**Technical Meeting on the**  
**International Network of Nuclear Reaction Data Centres**  
**16 - 19 April, 2012, Issy-les-Moulineux, France**

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This report contains the short review of the main fields of nuclear data activity of the Ukrainian Nuclear Data Centre (UkrNDC) and main results obtained. UkrNDC is subdivision within the Neutron Physics Department of the Institute for Nuclear Research of the National Academy of Sciences of Ukraine. UkrNDC has 5 permanent researchers. During year under review three members of the staff were involved in experimental neutron data measurements at the Kyiv research reactor.

### **Compilation**

We continue collection and compilation of experimental neutron, charged particle and photonuclear data. Numbers of the EXFOR's entries sent to the NDS IAEA by UkrNDC are the following.

New:

- for neutron data – 1 entries (32232);
- for charged particle data – 10 entries (D5080 - D5085, D5087 - D590) 4pdf;
- for photonuclear data – 2 entries (G4034, G4035).

Improved:

- for neutron data – 1 entries (32223);
- for photonuclear data – 2 entries (G4018, G4029).

We realize review of compilation scope in home journals:

- "Nuclear Physics and Atomic Energy";
- "Ukrainian Journal of Physics";
- "Problems of Atomic Science and Technology", Series "Nuclear Physics Investigations".

### **Collaboration**

We continue our collaboration with the Nuclear Physics Department of the Taras Shevchenko National University of Kyiv.

- The teaching course “*Nuclear Data for Science and Technology and modern computer codes for nuclear data processing*” (36 hours) has been lectured in 2011-2012 for the fifth-course students of NPD KNU. This course includes the following items: ENDF/B libraries, EXFOR system, ENSDF library, the use of the PREPRO code in work with the ENDF libraries, the introduction to NJOY code system, the Network of Nuclear Reaction Data Centers and the use of the on-line services.

- The teaching course “*Experimental Methods at Atomic Power Engineering*” (36 hours) are lectured in 2012 for third-year students of NPD KNU.

We continue our collaboration with Pavel Sukhoi State Technical University of Gomel in frame of the task on development and organization of scientific methodology and information databases for nuclear technology calculations in the Republic of Belarus.

### Customer Services

- During 2011-2012 the data for user’s requests were prepared and adapted (from ENDF, ENSDF and EXFOR libraries) for our institute researchers and for ones from other institutes. The organizations, whose request on nuclear data have received and were executed:
  1. Department of the Nuclear Reactions of the Institute for Nuclear Research (INR) of NASU.
  2. Department of the Nuclear Reactions, INR.
  3. Department of the Plasma Physics, INR.
  4. Institute of Electron Physics of NASU, Uzhgorod.
- The UkrNDC site was updated. The Filter code including the special libraries was added. Ukrainian customers, especially students and those physicists, who wish to prepare the pointwise and multigroup cross sections self-dependently, but do not have a good experience in it, use this site very often. Address of the UkrNDC site: <http://ukrndc.kinr.kiev.ua>.

### Experimental Neutron Data Measurements

- The total neutron cross sections for chromium-52 were measured using the neutron filtered beam with the average energy 59 keV.
- The measurements of the total neutron cross section for natural carbon were carried out in the region of 150 keV.

### Visits and Conferences

- International Conference of Young Scientists and Post-Graduates (IEP-2011), 24 - 27 May, 2011, Uzhgorod, UKRAINE.
- Regional Workshop on Concerted Actions in Research and Applications with Neutron Beams in Europe, 1-3 June 2011, Budapest, Hungary.
- The XI-th International School-Seminar “The Actual Problems of Microworld Physics”, August 1 - 12, 2011, Gomel, Belarus.
- Technical Meeting on Catalogue of Products and Services of RRs: Applications of Neutron Beams, 5 - 7 September 2011 , Vienna Austria.
- The 60<sup>th</sup> Meeting on Nuclear Spectroscopy and Nuclear Structure “Nucleus-2011”, October 10-14, 2011, Sarov, Russia.
- Technical Meeting on Potential International Centres of Excellence Based on High Flux Research Reactor Facilities (ICERR), 10-12 April, 2012, Cadarache, France.