

**Ukrainian Nuclear Data Centre Progress Report, 2018/19**  
**Summary of Nuclear Data Studies by Staff of the Ukrainian Nuclear Data Centre**  
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**Technical Meeting on the**  
**International Network of Nuclear Reaction Data Centres**  
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Ukrainian Nuclear Data Centre (UkrNDC) is subdivision within the Neutron Physics Laboratory at the Institute for Nuclear Research of the National Academy of Sciences of Ukraine. UkrNDC has 3 permanent researchers.

### **Compilation**

We continue collection and compilation of experimental neutron, charged particle and photonuclear data. Number of the new/renew EXFOR's entries sent to the NDS IAEA by UkrNDC is the following:

- for neutron data – 3 entries (32223, 32246, 32237);
- for charged particle data – 40 entries (D5076, D5084, D5100, D5137, D5139, D5141÷D5173);
- for photonuclear data – 14 entries (G4028, G4038, G5058, G4060÷G4070,).

We realize review of compilation scope in home journals and scientific issues:

- Nuclear Physics and Atomic Energy;
- Ukrainian Journal of Physics;
- Problems of Atomic Science and Technology, Series Nuclear Physics Investigations;
- Uzhhorod University Scientific Herald. Series Physics;
- Bulletin of Taras Shevchenko National University of Kyiv Series: Physics & Mathematics;
- East European Journal of Physics.

### **Collaboration**

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

- The teaching course “*Nuclear Data for Science and Technology and modern computer codes for nuclear data processing*” (38 hours) has been lectured in 2018 for the fifth-course students of NPD KNU. This course includes the following items: ENDF/B libraries, EXROR 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 Centres and the use of the on-line services.

We start our activity within the framework of educational and scientific program of the Institute for Nuclear Research of the National Academy of Sciences of Ukraine on the preparation of a doctor of philosophy in specialty 104 (Physics and Astronomy).

- The teaching course “*Experimental Methods at Atomic Power Engineering*” (60 hours) was prepared and it will be lectured during April-May 2019 for post-graduated students in the 2<sup>nd</sup> year of study.

### **Customer Services**

- During 2018-2019 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 requests on nuclear data have arrived and were executed in the accounting period:
  1. Department of Theoretical Physics of the Institute for Nuclear Research of NASU.
  2. Uzhgorod Institute of Electron Physics of NASU.
  3. Scientific and Technical Complex "Nuclear Fuel Cycle" of the KPTI of NASU.
- The UkrNDC site is operating. Ukrainian customers, especially students and those physicists, who wish to prepare the point-wise and multi-group 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 and Computational Activity**

Determination of the total neutron cross section for  $^{52}\text{Cr}$  on the filtered neutron beam with the energy 145 keV was done.

Computer code FOR\_Spectrum (for reduction and transformation of the output files after operation of the FILTER-8 code) was created.

Neutron spectra after the composite interference filter that have been used in the experiments at the Kyiv research reactor were recalculated and prepared for input into EXFOR using a new keyword – SUPPL-INF (Supplemental information).