United States nuclear structure data program (USNDP) and evaluated nuclear structure data file (ENSDF) at Texas A&M University

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Since 2005 we have been an important partner in the nationwide *United States Nuclear Data Program* (USNDP), which is part of the *Nuclear Structure and Decay Data* (NSDD) international nuclear data evaluation network. USNDP is in fact the backbone of the NSDD network, making the greatest effort in completion of the goals of the nuclear-structure data-evaluation communities. Nuclear data evaluation is a national-interest activity financed by DOE, through which relevant nuclear-science results in virtually all world publications are retrieved and put together in a large *Evaluated Nuclear Structure Data File* (ENSDF) database according to *general policies,* a set of rules that make possible a standard approach through which the data are uniformly evaluated.

This activity is carried by a relatively small group of professionals located mostly in national institutes but also hosted by a few universities. The nuclear data network is the nodal point for the wide dissemination of nuclear knowledge to many users, from those in basic science to those engaged in commercial applications in American and international businesses. The output is published in the Nuclear Data Sheets, an Elsevier publication, and also is disseminated by different on-line databases, which can be retrieved at the NNDC site (http://www.nndc.bnl.gov), IAEA Vienna's site (http://www-nds.iaea.org) and several other locations.

For eight years now at Texas A&M we have covered mass chains from essentially all the regions of the periodic table. Up to the past year we have published in Nuclear Data Sheets the superheavy A=252 mass chain [1]; the very data-rich mid-mass chains, A=147 [2] and A=140 [3]; the relatively lighter chains, A=97 [4] and A=84 [5]; and, in collaboration with B. Singh and a group of authors from McMaster University, Canada, we also published the A=77 [6], A=37 [7], A=36 [8], and A=34 [9] chains. Another mass chain, A=148, which was completed then, is now in the process of final corrections after the review process. Since nuclear-data evaluation depends critically on the experience of the evaluator, with a veteran evaluator typically completing only a couple of mass chains per year, coverage of such a wide range of A chains in a short time at a contracted effort of 0.67 FTE per year is a considerable accomplishment.

During the past year we covered a relatively heavy mass chain, A=141, which has been submitted and is currently being reviewed. We have also started the evaluation of A=158, by considering all world publications since 2003, when the previous full evaluation of this mass chain was published. The chain includes Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, and W, a total of 16 nuclei. More than 250 papers have been published during this interval. The work is in progress.

[1] N.Nica, Nucl. Data Sheets **106**, 813 (2005).
[2] N.Nica, Nucl. Data Sheets **110**, 749 (2009).

[3] N.Nica, Nucl. Data Sheets **108**, 1287 (2007).
[4] N.Nica, Nucl. Data Sheets **111**, 525 (2010).
[5] D.Abriola *et al.*, Nucl. Data Sheets **110**, 2815 (2009).
[6] B. Singh, N.Nica, Nucl. Data Sheets **113**, 1115 (2012).
[7] J. Cameron, J. Chen, B. Singh, and N. Nica, Nucl. Data Sheets **113**, 365 (2012).
[8] N. Nica, J. Cameron, and B. Singh, Nucl. Data Sheets **113**, 1 (2012).
[9] N. Nica and B. Singh, Nucl. Data Sheets **113**, 1563 (2012).