National Nuclear Data Center

NNDC

BROOKHAVEN NATIONAL LABORATORY

NSR   XUNDL   ENSDF
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Publications

Meetings

CSWEG: Nov 2-4, 2004   Nuclear Data Portal   USNDP: Nov 3-5, 2004

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CapGam Thermal Neutron Capture Gamma-rays

CINDA Computer Index of Neutron Data

CSEWG Cross Section Evaluation Working Group

CSISRS alias EXFOR Nuclear reaction experimental data

Empire Nuclear reaction model code

ENDF Evaluated Nuclear (reaction) Data File

ENSDF Evaluated Nuclear Structure Data File

For NMMSS and DoE NMIRDC Standards for decay data

IRDF International Reactor Dosimetry File

MIRD Medical Internal Radiation Dose

NSR Nuclear Science References

Nuclear Data Sheets Nuclear structure and decay data journal

Nuclear Wallet Cards Ground and isomeric states properties

Nuclear Wallet Cards for Homeland Security

NuDat Nuclear structure and decay data

RIPL Reference Input Parameter Library

USNDP U.S. Nuclear Data Program

XUNDL Experimental Unevaluated Nuclear Data List

Coming soon: **Atlas of Neutron Resonances**

Coming soon: **Empire 2.19**

Links ordered alphabetically   Order by category

Nuclear Data Portal   www.nndc.bnl.gov

Nuclear Data Portal

New generation of nuclear data services, using modern and powerful DELL servers, Sybase relational database software, Linux operating system, and Java programming language. The Portal includes nuclear structure, decay and reaction data, as well as literature information. Data can be searched for using optimized query forms; results are presented in tables and interactive plots. Additionally, a number of nuclear science tools, codes, applications, and links are provided.

National Nuclear Data Center

The National Nuclear Data Center (NNDC) collects, evaluates, and disseminates nuclear physics data for basic nuclear research and applied nuclear technologies. Nuclear data activities started in Brookhaven National Laboratory in 1952. The NNDC has provided remote electronic access to its databases and other information since 1986. Access via the Web started in 1994. During 2003, 338,000 electronic data retrievals were carried out from the NNDC's web site, a 17% increase over the previous year.

Databases

CINDA
www.nndc.bnl.gov/cinda/

Bibliographical neutron induced reaction information, including experimental, theoretical and evaluation works. It contains references to 275,000 reactions from 55,000 works.

CSISRS alias EXFOR
www.nndc.bnl.gov/exfor/

Experimental nuclear reaction data for incident neutrons, charged particles, and photons. It covers more than 14,000 experiments and spans nearly all of neutron induced reactions experimental works.

ENDF
www.nndc.bnl.gov/endf/

Core nuclear reaction database containing evaluated (recommended) data from the ENDF/B-VI library (also JEFF, JENDL, BROND, CENDL). It uses ENDF-6 format, covering all nuclides of practical relevance (328 in total) for neutrons up to 20 MeV and partly up to 150 MeV. It serves as principal input for neutronics calculations, including nuclear reactor design and operation, national security, criticality safety, accelerator design, radiation protection, radiotherapy, and detector simulation.

ENSDF
www.nndc.bnl.gov/ensdf/

Core nuclear structure and decay database containing evaluated (recommended) data for 2,916 nuclides, organized in over 15,000 individual datasets. It serves as principal source of data for nuclear structure research, nuclear spectroscopy applications, databases MIRD and NuDat, and publications such as Nuclear Data Sheets and Table of Isotopes.

MIRD
www.nndc.bnl.gov/mird/

Evaluated nuclear decay data for over 2,100 radioactive nuclei. Data are extracted from ENSDF, processed by the program RadList, and used for medical internal radiation dose calculations.

NSR
www.nndc.bnl.gov/nsr/

Bibliographical nuclear physics information containing 175,000 nuclear science articles, indexed according to content. It spans almost 100 years of research, and currently covers 75 journals.

NuDat
www.nndc.bnl.gov/nudat2/

Evaluated (recommended) nuclear structure and decay data for more than 2,900 nuclides, about 136,000 levels, 197,000 gamma-rays, etc. Obtained from ENSDF and Nuclear Wallet Cards.

XUNDL
www.nndc.bnl.gov/ensdf/

Experimental nuclear structure and decay data, covering more than 1,100 recent nuclear structure and decay articles.

Tools

CapGam
www.nndc.bnl.gov/capgam/

Energy and intensity of gamma rays following thermal neutron capture. It contains about 58,400 gamma rays indexed by 204 different target species.

Empire
www.nndc.bnl.gov/empire/

Nuclear reaction model code using various reaction mechanisms. It consists of a number of linked FORTRAN codes, input parameter libraries, a library of experimental data (CSISRS/EXFOR), and a friendly Graphic User Interface. It provides ENDF-6 formatted files.

Publications

Nuclear Data Sheets
www.nndc.bnl.gov/nds/

Journal devoted to the publication of evaluated nuclear structure and decay data. It was first published in 1966; it is currently edited and produced by the NNDC and published by Elsevier.

Nuclear Wallet Cards
www.nndc.bnl.gov/wallet/

Up-to-date ground and isomeric states properties of all known nuclides. It is used as a decay data standard by DOE Nuclear Materials and Safeguards System. A version tailored to Homeland Security needs is also available. It is distributed as a booklet and in Palm Pilot format.