

www.nucleonica.com

web driven nuclear science

What is Nucleonica?

As a result of recent developments on issues such as energy security and sustainability, nuclear safety, security, and non-proliferation, and protection of the environment, we are witnessing a resurgence of interest in nuclear power and the nuclear sciences in general. The next generation of reactor energy systems aimed at addressing many of these issues – the so-called *Generation IV* systems – are expected to become available for commercial introduction in the period between 2015 and 2030 or beyond. There is also large range of “non-power” applications of radioisotopes and radiation in a variety of diverse fields such as medicine (e.g. cancer therapy), agriculture (e.g. pest population control), food irradiation (e.g. to increase shelf-life) and in industry (e.g. tracers, radiography, gauging, radiation processing, etc.), where such nuclear skills are also required. In order to support this renewed interest in the nuclear sciences, we will need a nuclear skills renaissance and it is within this context that the Nucleonica nuclear science web portal (www.nucleonica.com) has been developed. With its roots in the traditional paper-based Karlsruhe Nuclide Chart, Nucleonica has grown to become the leading online resource in the nuclear sciences. Nucleonica is particularly suitable for education and training of young scientists, engineers and technicians in the nuclear domain. A variety of our applications enable researchers and specialists to make complex and precise calculations in state-of-the-art fashion.

The Portal is already being used by thousands of scientists and students worldwide in over 92 countries. Due to its advanced IT features, user friendly and intuitive environment, the platform has recently been endorsed by the Sustainable Nuclear Energy Technology Platform (www.snetp.eu):

“Nucleonica plays ... an important role in making nuclear education more attractive and in building nuclear knowledge for a new generation of engineers and scientists”

The Nucleonica Nuclear Science Portal is an innovative professional and technical resource for knowledge creation and competence building in nuclear science for the worldwide nuclear community. Nucleonica provides a customisable, integrated environment and collaboration platform, using the latest internet “Web 2.0” dynamic technology. A unique feature of Nucleonica is its “electronic knowledge objects”, which cover web-based scientific applications, an online wiki and blog as well as forums that enable collaborative research and scientific projects in a worldwide accessible online laboratory.



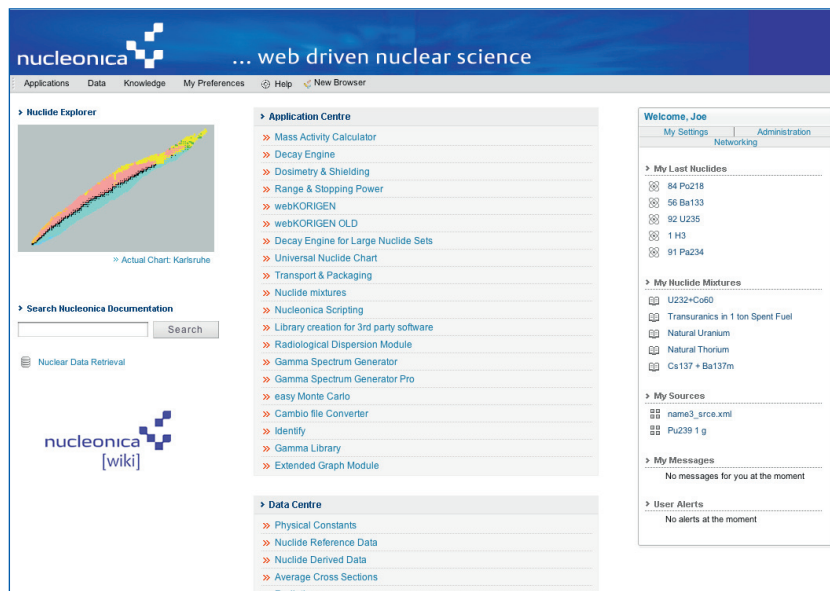
DID YOU KNOW

- Nuclear energy is currently undergoing a renaissance with more than 50 new reactors planned to come online in the next 5 years.
- Nucleonica is used by thousands of scientists and students worldwide in over 92 countries.
- Nucleonica has recently been endorsed by the Sustainable Nuclear Energy Technology Platform.

Who is Nucleonica aimed at?

Nucleonica is aimed at scientists, engineers and technical personnel working in the fields of nuclear power, health physics, radiation protection, nuclear and radiochemistry, decommissioning, nuclear medicine, etc. Nucleonica is particularly suitable for education and training of young scientists, engineers and technicians in the nuclear domain. It can also be used by professionals for everyday calculations, obtaining quick results in various fields of applications and testing, validating and verifying complex computer models.

Nucleonica also provides a range of consultancy services and industry co-operations. Examples of some recent studies include an analysis of the handling problems arising in the dismantling of radioactive sources, a decommissioning study of neutron sources, shielding analysis for a minor actinide laboratory, and a comparison of the radiotoxicities of wastes from fission, fusion, and coal fired power stations. Our clients include the Bundesamt für Strahlenschutz (BfS), Fichtner Engineering and Consulting, and Europol.



How can Nucleonica help you?

Nucleonica provides you with user friendly access to the latest reference data from internationally evaluated nuclear data. A unique feature is the wide range of web-based nuclear science applications for decay calculations, dosimetry & shielding, etc. A variety of social networking tools are provided for scientific collaboration.

In addition Nucleonica offers a range of introductory and advanced training courses in various areas of nuclear science. One of the main aims of these courses is to contribute to establishing a safety culture among the scientists and especially the younger scientists. This safety culture is a necessary prerequisite for a general acceptance of nuclear energy worldwide. Recent courses include: Illicit Trafficking and Radiological Consequences (ITRAC) with special focus on nuclear security; Nucleonica Training on Nuclear Science (NuTRONS) with special focus on environmental radioactivity; etc. Shorter courses on gamma spectrometry, nuclide charts, Karlsruhe Nuclide Chart, introduction to Nucleonica are also offered.

For more information on training courses see the Nucleonica wiki at <http://www.nucleonica.com/wiki/>

