



Project Description

Swiss Nano-Cube
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What is the Swiss Nano-Cube?

Swiss Nano-Cube is the nationwide Swiss knowledge and education platform for micro- and nanotechnology for secondary and vocational schools. The project was launched in the summer 2009 and was developed and set up together with experts of vocational training, organizations and some selected schools. It consists of the following elements:

- **Web-based educational platform:** *Education and Knowledge Portal with didactically worked up content, e-learning tools as well as different information, teaching and learning tools.* ➔ www.swissnanocube.ch
- **Training Modules:** *Thematically categorised, didactically edited, micro- and nanotechnology specific training modules and materials addressed towards a target group.* ➔ e.g. **Module "Nano-Chemistry"** (see: [Flyer page 3](#))
- **Teacher training courses:** *Courses for teachers and further education of responsible companies and associations. Since 2009 approximately 600 teachers have attended these courses.* ➔ **TeachNano-courses, SimplyNano 1[®] courses**

To whom is the Swiss Nano-Cube addressed?

Swiss Nano-Cube addresses teachers and students from vocational schools, secondary schools as well as higher professional schools. In addition, interested professional institutions as well as companies can access all information offers free of charge. Those are also available in French and Italian.

Why is Swiss Nano-Cube important for Switzerland?

Micro- and nanotechnologies (M&NT) are considered as future technologies and are already today the basis of many innovative products such as self-cleaning windows, more efficient solar panels, or ultra light materials. M&NT has enormous potential for the research and technology site of Switzerland. Due to their contribution to product and quality enhancement potential, they become more and more important in many industries. Thereby many professions and also education and further education in vocational schools, secondary schools and universities are affected.

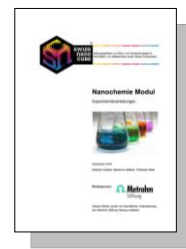
Despite the growing importance of M&NT for the industrial and research site of Switzerland, there are only very few practical teaching aids and learning materials for the secondary level II available to date. Swiss Nano-Cube closes these gaps.

What should be achieved with the Swiss Nano-Cube?

Swiss Nano-Cube is designed to help students and teachers at the secondary level to raise awareness of the increasing importance of M&NT in professional life, to adequately prepare students for dealing with this key technology and equip teachers with the necessary materials for needs-oriented and exciting classes.

For this purpose, the following training and education modules are available:

- **Nano-Basics-Module:** The module can be used as an introduction to nanotechnology and is suitable for both the middle school and the vocational school.
- **Lotus-Module:** Many nano-products are used for modifying surfaces. The lotus plant is a natural model. In the Lotus-Module experiments are presented to illustrate the principle of the Lotus-Effect®.
- **Nanochemistry-Module:** The Nanochemistry-Module explains five experiments to important effects (e.g. pyrophoric iron, ferrofluid, nano gold) of nanotechnology and is suited for teaching chemistry on the secondary level II.
- **Nanorama-Loft-Module:** The Nanorama-Loft-Module is the didactic preparation of the Nanorama-Loft-Quiz. Besides teaching suggestions and graphical material, the module contains a list of all nano-products in the loft as well as all questions and answers.
- **Nanomedicine Module:** The Nanomedicine Module introduces the applications of nanotechnology in medical treatment and provides an overview of the field of analytics as well as biological structures that move in nano- and micro dimension.
- **MEM-Module:** The module is aligned to technical professions of engineering, electrical and metal industry (MEM). It is suitable for both vocational as well as general-education (ABU) and treated MEM-specific applications as well as topics related to technology and society.
- **Module: Working safely with nanomaterials:** The module shows what dangers could arise in the workplace for health and the environment at best when dealing with nanoscale materials and how you can protect yourself in the workplace.
- **Nanosilver-Module:** The Nanosilver-Module shows advantages and disadvantages of using nanosilver. It also provides a list with nanosilver-products and outlines risk potential to human health and especially to the environment.
- **Economy-Module:** The module gives an overview of the economic and social aspects of nanotechnologies.
- **Education and Profession - Module:** The module gives insights into the educational, training and career opportunities in the field of nanosciences and nanotechnologies.



The contents of the modules and other teaching materials can be downloaded from www.swissnanocube.ch.



Who is behind Swiss Nano-Cube?

The project was launched by Innovation Society, St.Gallen and the Swiss Federal Institute for Vocational Education and Training SFIVET and the Swiss Federal Office for Professional Education and Technology (OPET) provided the start-up funding in the context of the promotion of the Swiss professional education. In addition, Swiss Nano-Cube is supported by the UBS Foundation for Social Issues and Education, by the The Federal Office for the Environment FOEN and by the Federal Office for Agriculture FOAG, as well as the Metrohm Foundation.



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Office for Professional Education and Technology (OPET)
Federal Office for Agriculture FOAG
Federal Office for the Environment FOEN



Award

The "Initiative Mittelstand" awards annually the best IT innovations with the IT Innovation Award. 2012 „Swiss Nano-Cube“ was awarded in the category „E-Learning“ with the „Best-of-2012“ rating. With this award, Swiss Nano-Cube belongs to the top group of over 2,500 applications. The competition is held under the auspices of the Commissioner of the Federal Government for Information Technology and IBM Germany.



Project coordination and contact

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