

## Project fact sheet 6

# Nanotechnology education

- Development of an education strategy and action plan
- 7 school workshops and 3 teach-the-teacher workshops organised in Austria, Germany and Poland
- School competition
- Students as journalists video contest

NanoDiode has developed an education strategy and action plan, selecting best practices on the basis of previous European experience with nanotechnology education. This strategy formed the basis for a series of education activities focusing on secondary education, including hands-on activities in schools, teach the teacher-workshops, a school competition and a 'students as journalists' video contest.

The **workshops in schools** intended to familiarise school children with nanotechnologies. Starting with a questionnaire and a short presentation on nanotechnologies, students were introduced to the topic and discussed different applications of nanotechnology. During the workshops, various experiments and on-site visits were performed to provide more insight into the use of nanotechnologies in research and industries. School workshops have been



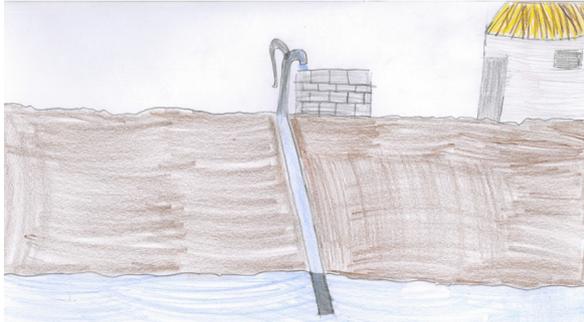
*School workshop in Graz, Austria*

performed in Austria, Germany and Poland, in cooperation with researchers from local organizations such as universities and research facilities. Overall, more than 300 school children participated in these workshops.

The objective of the **teach the teacher-workshops** was to train teachers on how to work with selected nanotechnology education materials and to motivate them to discuss new science topics to their students. NanoDiode presented a self-standing teaching module to support teachers in integrating the topic in their upcoming classes. A total of 43 teachers specialised in different science subjects took part in the one day workshops held in Austria, Germany and Poland. All participants stated that they appreciated the workshop as it allowed them to gain more insight in the topic and enabled them to include nanotechnology in their curriculum.

Additional education initiatives sought to engage school children in the debate on nanotechnologies. The NanoDiode **innovative ideas competition** invited school children across Europe to describe their ideas on how nanotechnologies could be applied for a sustainable European future. The aim of the competition was to encourage students to develop their views on how nanotechnologies might shape our future societies. Over 50 youngsters from Italy, Germany, Spain and Austria submitted their ideas using text, pictures, video and other media.

*Innovative ideas competition, idea Nano-Brunnen*



The **'students as journalists' video contest** invited students to reflect on the question: "What kind of nanotechnologies do we want?" In this competition, students were asked to play the role of journalists and produce short videos focusing on nanotechnology from their own perspective, which products using nanotechnology they already know and use, and what kind of applications of nanotechnology they would or wouldn't like to have in the future.

These experiences within the NanoDiode project hold lessons for future nanotechnology education activities:

- Educational materials have to be firmly grounded in educational theory. The desire to create new materials has sometimes come at the cost of careful consideration of learning objectives, styles and outcomes. 'Best practices' in nanotechnology education incorporate the latest insights from educational theory.
- The teaching material should present nanotechnology in a balanced way. In line with the all-partial perspective of NanoDiode as a multi-stakeholder consortium, the objective of nanotechnology education should not be to single-mindedly pro-

*School workshop in Graz, Austria*



mote nanotechnologies. It should enable students to form a well-informed opinion on nanotechnologies, including the science behind it, broader societal impacts and the assessment of foreseen benefits and risks.

- Educational materials should be directed at the long-term uptake in educational programmes. They should be presented in such a way that teachers will be encouraged to take them up in their regular teaching activities. This way, the activities become embedded in school programmes and will continue after the project ends.
- The materials should take the various constraints of the school situation into account, including time constraints, limited resources, the need to comply with national curricula and the specific interests of students and teachers.

#### MORE INFORMATION



BioNanoNet Forschungsgesellschaft mbH  
Andreas Falk  
+ 43 699 155 266 10  
andreas.falk@bionanonet.at  
www.bionanonet.at

NanoDiode is a project for outreach and dialogue on nanotechnologies, funded by the European Commission. From July 2013 to June 2016, NanoDiode has organised a range of engagement activities across Europe, involving stakeholders in a dialogue on the funding, performance and outcomes of nanotechnologies research.

The NanoDiode fact sheets present the different activities carried out as part of the project and discuss the main findings and recommendations. This is nr 6 of a series of 14 fact sheets, see: [www.nanodiode.eu/factsheets](http://www.nanodiode.eu/factsheets).



NanoDiode is a Coordination and Support Action funded by the European Union under the NMP Cooperation Work Programme, Grant Agreement n° 608891.