

**Lifelong Learning Programme
Information and communication technologies - ICT (KA 3)**

Nano Tech Science Education

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D29. THE REPORT OF DISCUSSION PORTAL

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The report of discussion portal takes part in the Dissemination Workpackage7. FORTH (Partner 4), set up a portal system, to enable the implementers to share knowledge about the implementations. It has been used by the wider educational community to discuss project related issues. A one day workshop where local teachers, university students, local policy officials and parents plus experts were invited in order to cumulative project results and transfer them to the local level. Participants of the dissemination seminars were introduced about the discussion portal by all partners.

The report describes the portal system in the virtual laboratory to enable the implementers to share knowledge about the implementations and potential users e-mail lists including the teachers, prospective teachers and universities students provided to FORTH to let them exchange their opinion about the use and place of Nanotechnology in science education and it would be used by the wider educational community to discuss project related issues.

The blog has multilingual interface (in all partners' national languages).

Structure:

- Home page
- Introduction
- Nano forum
- Nano news
- Nano projects
- Contact us

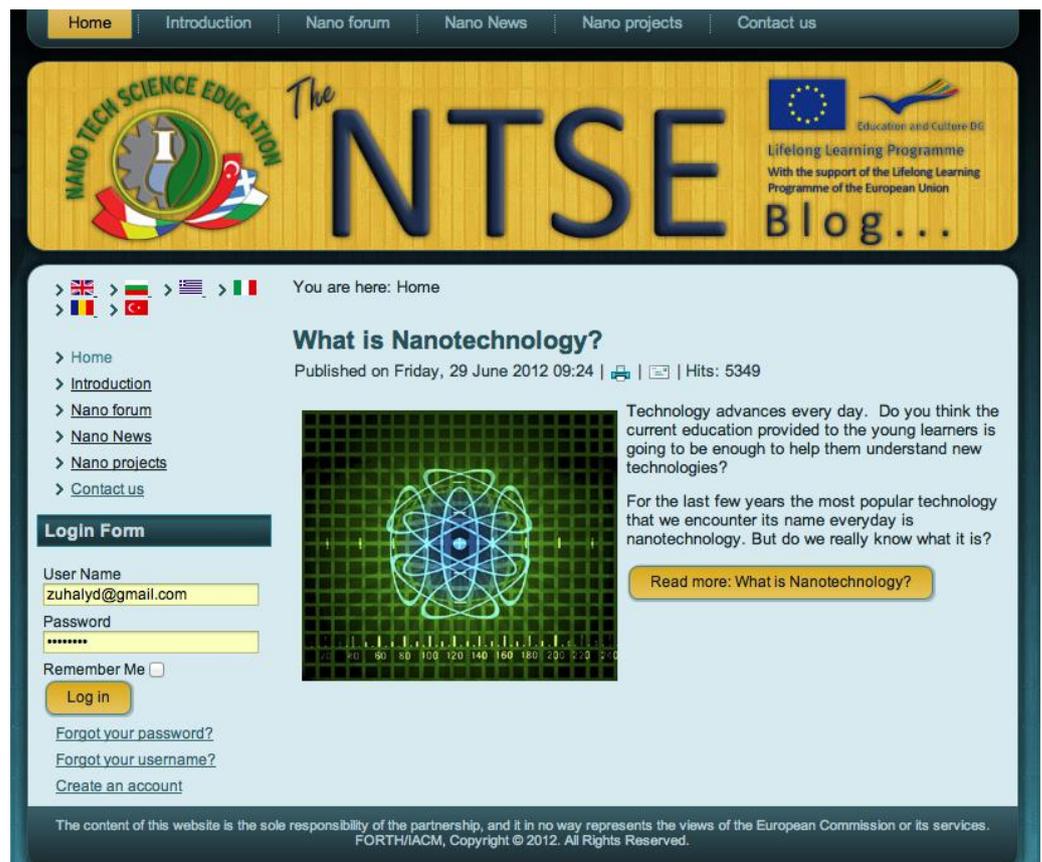


Fig. 1. Home page of the NTSE Blog

The nano-forum pages served for informing teachers about nano-science topics. Three articles were published there.

The 1st article named 'What is Nanotechnology?' illustrates the Nano Scale giving simple examples related to life. Finally, it tries to summarize and underline that nanotechnology can be defined as the technology that deals with particles sized between 1-100 nm. Nanoparticles are considered a bridge between bulk materials and atomic or molecular structures. This article has 11728 hits.

The 2nd article named as 'Nanotechnology: Ideas & concepts' based on the very earlier story of Nanotechnology. We learned that early examples of nanostructured materials were based on craftsmen's empirical understanding and manipulation of materials. Use of high heat was one common step in their processes to produce these materials with novel properties. This article has 1640 hits.

The 3rd article is named as 'Nanosciences and nanotechnologies learning and teaching in secondary education'. This literature review provides an overview of recent studies on the introduction of nanosciences and nanotechnologies in secondary education. This article has 1927 hits.

The screenshot displays the NTSE Blog interface. On the left, there is a navigation menu with links for Home, Introduction, Nano forum, Nano News, Nano projects, and Contact us. Below the menu is a login form with fields for User Name and Password, a Remember Me checkbox, and a Log in button. There are also links for 'Forgot your password?', 'Forgot your username?', and 'Create an account'. The main content area features three articles:

- What is Nanotechnology?**: Published on Friday, 29 June 2012 09:24. Hits: 5340. The article includes an image of a glowing atomic model and discusses the current education provided to young learners.
- Nanotechnology: Ideas & concepts**: Published on Tuesday, 08 May 2012 10:36. Hits: 751. The article includes an image of physicist Richard Feynman and discusses his talk 'There's Plenty of Room at the Bottom'.
- Nanosciences and nanotechnologies learning and teaching in secondary education**: Published on Tuesday, 08 May 2012 10:36. Hits: 815. The article is a literature review by Bénédicte Hinganta and Virginie Albeb, providing an overview of recent studies on the introduction of nanosciences and nanotechnologies in secondary education.

Fig.2 Articles in NTSE Blog

Every article had a trigger question on the bottom to draw attention of the blog users to think about the nano topics and visit the related articles and pages of the virtual lab. All these articles were connected with the experiments presented in our virtual lab and provides background information about the nanotechnology.

Registered users were able to leave comments. In total the blog has 19 registered users; most of them are the consortium members.

<input type="checkbox"/> Name	User Name	Enabled	Activated	User Groups
<input type="checkbox"/> Alexander	a.angelov@cct.bg	✓	✓	Registered Editor
<input type="checkbox"/> Andrei Chilian	Andrei.Chilian	✓	✓	Registered Editor
<input type="checkbox"/> Arzu Aslandođdu	arzu	✓	✓	Registered
<input type="checkbox"/> Aslıhan Çelik	aslıhan	✓	✓	Registered
<input type="checkbox"/> Ercan Tatlı	Scienceeage	✓	✓	Registered Publisher
<input type="checkbox"/> Giannis	giannis_sg	✓	✓	Registered Editor
<input type="checkbox"/> İdil	Akçay	✓	✓	Registered Editor
<input type="checkbox"/> İllian	Uzunov	✓	✓	Registered Editor
<input type="checkbox"/> Laura Gorghiu	Laura.Gorghiu	✓	✓	Registered Editor
<input type="checkbox"/> Leonidas Manou	Leonidas.Manou	✓	✓	Registered Editor
<input type="checkbox"/> Nadejda Valeva	nadval	✓	✓	Registered
<input type="checkbox"/> Nasko Stamenov	Nasko.Stamenov	✓	✓	Registered Editor
<input type="checkbox"/> Orhan Selim Ergin	O. Selim Ergin	✓	✓	Registered
<input type="checkbox"/> pantelis	pantelifragias27	✓	✓	Registered
<input type="checkbox"/> Radu Lucian Olteanu	Radu.Lucian.Olteanu	✓	✓	Registered Editor
<input type="checkbox"/> Testios Testakis	Tester	✓	✓	Registered
<input type="checkbox"/> Verina	Petrova	✓	✓	Registered Editor
<input type="checkbox"/> Yorgis Androulakis	YorgisA	✓	✓	Registered Editor
<input type="checkbox"/> zuhal	yilmaz.dogan	✓	✓	Registered Editor

Fig 3: the list of registered users in blog.

Although we tried to activate experts in the internal blogs area for exchanging ideas for nanocamp activities), teachers and experts preferred other means to communicate their opinions/suggestions. Some of those opinions can be found in the short reports regarding teachers' reflections. On the other hand we can say that the blog served really well as an information channel on nanoscience-nanotechnology trends. The nano-news page is updated in a daily bases with aggregated RSS feeds from popular nanotechnology sites. So in one page, teachers can find fresh articles on nano-topics from selected sources like Phys.org, Nanowerk, MIT, Technology.org.

When we think the numbers of hits for the first article "What is nanotechnology" (this act also as a homepage) it was observed that the blog is quite active as information channel. However, in order to share experiences about poster competitions, science camp and

classroom implementations experts, teachers students prefer information channels on new trends as <https://www.facebook.com/pages/Nano-Science-Camp-Bulgaria/409485935836283?fref=ts> and <https://www.facebook.com/nano.doga?fref=ts>



Fig 4. Facebook page of Nano Science Camp

The function of the blog was put on a table in 5th PM in Crete in October 2013 and the partners decided to link the blog and web site pages of the Project with the facebook page. This page was created in June after Nano Science Camp. Currently there are 35 members and most of them are the science camp students and teachers. 118 people visited this page and liked the records and photos in this page. It was enriched with the records from the Science Camp. Still it is actively used and they are visited by the students and it welcomes the new participants to inform the new participants about the next Science Camp Event in 2014. Apart from this, one of the participants from science camp created a Nano Doga page to sustain the communication among the camp participants. It is also followed by 48 people.