

## CONTACT

Europäische Akademie  
Bad Neuenahr-Ahrweiler gGmbH

Editing and Public Relations:  
**Friederike Wütscher**  
**Katharina Mader**  
press@nanodiara.eu

Wilhelmstr. 56  
53474 Bad Neuenahr-Ahrweiler, Germany  
Phone +49 (0) 2641 973 300  
Telefax +49 (0) 2641 973 320

[www.nanodiara.eu](http://www.nanodiara.eu)

## Press Release

### **BRINGING KNOWLEDGE ABOUT NANOMEDICINE TO THE PUBLIC: SUCCESSFUL CO-OPERATION BETWEEN EU-PROJECT NANODIARA ON NANOMEDICINE AND THE ADULT EDUCATION CENTRE BERN**

*Bad Neuenahr-Ahrweiler, 12 December 2012. – NanoDiaRA, an EU-funded research project on diagnostic by using nanoparticles, and the Adult Education Center Bern recently organized a tripartite course of lectures about “Nanomedicine”. It covered many issues ranging from production to medical applications and ethical aspects.*

The first lecture was held by Professor Heinrich Hofmann (Powder Technology of the Ecole Polytechnique Fédérale de Lausanne), partner of NanoDiaRA and responsible for the nanoparticle synthesis and characterization in the project. He gave an introduction to the principles of nanotechnology and explained the very basics of the physical and chemical properties of nanoparticles and the technical challenges of their fabrication. Hofmann showed how nanoparticles can be used practically and explained their main fields of application in medicine. He also mentioned the potential risks of nanoparticles in the human body mainly appearing when nanoparticles in higher concentration are used e.g. as “trendy” nano-labelled products when it comes to textiles, household goods or food.

The second part of the series dealt with “Medical application of nanoparticles”. In the course of the so-called “Saturday University” three speakers presented an overview of the medical fields in which nanoparticle research is conducted.

Dr. Margarethe Hofmann-Antenbrink, MatSearch Consulting Hofmann and scientific co-ordinator of NanoDiaRA, gave an overview of nanomedical research in Europe. She presented various European research activities for the treatment and diagnosis for diseases and summarized promising methods like immune tests and imaging techniques, using NanoDiaRA and other projects as examples.

Dr. Christophe von Garnier, pneumologist at the Insel Hospital Bern, highlighted the latest results of the effects of nanoparticles on the immune system, in particular on the lung. This very complex research field still leaves open questions about the interaction of nanoparticles and the organism. Von Garnier’s work on the reactions of the lung and the immune system initiated by technologically used nanoparticles, promises to have an impact also on future applications of such particles in medicine.

Professor Daniel Rüfenacht (Hirslanden Clinic Zürich) presented the research in hyperthermia for cancer treatment. By using larger amounts of ferromagnetic nanoparticles, rapidly changing magnetic fields can



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cause local heating. As tumors, compared to other tissues, are more sensitive to heat, tumor cells can selectively be damaged by this mechanism. Actual developments try to minimize side effects of a free distribution of nanoparticles by using them only in a polymeric implant and by optimizing the properties of nanoparticles to improve their interaction with the tumor. If successful, a significant improvement of tumor treatment using particles could be expected.

The final talk of the course of lectures was dedicated to the ethical aspects related to nanotechnology and nanomedicine. The talk was given by NanoDiaRA's co-ordinator Priv.-Doz. Dr. Felix Thiele (Europäische Akademie Bad Neuenahr-Ahrweiler, Germany). Thiele outlined the basic ethical questions that are raised by new medical techniques like nanotechnology. Introducing fundamental philosophical distinctions such as ethics vs. morality and concepts of responsibility, risk and justice, Thiele gave an overview of current philosophical discussions in the field. In the end the talk was followed by a discussion with the audience on ethics of science and new technologies.

The outcome of this successful course of lectures will be summarized in a brochure for the public, available on [www.nanodiara.eu](http://www.nanodiara.eu) in spring 2012.

*The three sessions, organized by Alessandra Hool, MatSearch Consulting Hofmann, took place in November and December 2011, in Bern, Switzerland.*

*The project "Development of novel nanotechnology based diagnostic systems for rheumatoid arthritis and osteoarthritis (NanoDiaRA)" is funded by the 7th Framework Programme of the European Union. Its consortium consists of 15 European partners from both university and non-university institutions. The coordinator of the NanoDiaRA project is the Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen Bad Neuenahr-Ahrweiler gGmbH, Germany ([www.ea-aw.eu](http://www.ea-aw.eu)) dealing with the scientific study of the consequences of scientific and technological advances for individuals, society and the natural environment. MatSearch Consulting Hofmann, Switzerland ([www.matsearch.ch](http://www.matsearch.ch)), an independent consulting organization specialized in the field of materials science and technology, is responsible for the scientific coordination. Further information: [www.nanodiara.eu](http://www.nanodiara.eu)*