Venue

The International Workshop on Nanostructured titanium-based alloys for medical applications organized together with the 3rd General Meeting of EU FP7 ViNaT Project will be held in Ein Gedi Kibbutz Hotel, Israel. Ein Gedi is an oasis located on the rocky slopes above the Dead Sea - world's lowest and saltiest body of water, surrounded by the most breathtaking and exotic scenery.

Registration fees:

Participants:	210 EUR
Students:	75 EUR
VINAT members:	50 EUR

After 30 October 2012, the fee will increase by 50 EUR.

Chairpersons:

Dr. Irena Gotman (Israel)
Dr. Leon Mishnaevsky Jr. (Denmark)
Prof. Evgeny Levashov (Russia)

Contact:

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SEVENTH FRAMEWORK PROGRAMME

Project funded by the European Commission under the 7th Framework Programme for Research and Technological Development in the framework of Theme 4 NMP - Nanosciences, Nanotechnologies, Materials and new Production Technologies – as a Coordinated call EU-Russia 2011

Project ViNaT
Contract No.: 295322

VIRTUAL NANOTITANIUM: **THEORETICAL ANALYSIS, DESIGN AND VIRTUAL TESTING OF BIOCOMPATIBILITY AND MECHANICAL PROPERTIES OF TITANIUM-BASED NANOMATERIALS**

INTERNATIONAL WORKSHOP

NANOSTRUCTURED TITANIUM BASED ALLOYS FOR MEDICAL APPLICATIONS:

Mechanical Properties and Biocompatibility

January 21-23, 2013
Ein Gedi, Israel

Objectives and topics:

Due to the rapid aging of the world population, an increasing number of people need their failed tissues to be replaced or supported by artificial components. Titanium alloys are widely used in load-bearing orthopaedic and dental applications requiring high mechanical properties. The high strength is achieved by addition of alloying elements that lead to an impaired biological response. Nanostructuring can provide an alternative method for mechanical property enhancement of titanium, without compromising its biocompatibility. Computational modeling of mechanical properties and biocompatibility will bring nanocrystalline titanium implants closer to clinical realization as well as significantly reduce the number of animal experiments.

In order to develop computational modeling tools for the analysis of titanium based nanostructured metals for medical applications, a European FP7 research project "Virtual Nanotitanium" (VINAT) has been started in 2011. This project is carried out in collaboration with the State Contract № 16.523.12.3002 funded by the Russian Ministry of Education and Science. The International Workshop is organized in the framework of this project, and will cover the following topics:

- Modeling of mechanical behavior and biocompatibility of nanostructured Ti alloys
- Processing and mechanical properties of nanostructured Ti alloys
- Dissolution, oxidation and corrosion of nanostructured Ti alloys
- Dental and orthopaedic applications of nanostructured Ti alloys
- Modeling, properties and biocompatibility of other nanostructured materials for medical applications

Abstract Submission

Please submit an abstract (200-300 words, in MS Word format) by e-mail to lemi@dtu.dk no later than June 17, 2012. Authors will be notified of the Organizing Committee's decisions shortly thereafter.

International Scientific Committee:

- Prof. Andrey Solov'yov, Goethe University Frankfurt, Germany
- Prof. Bent F. Sørensen, Technical University of Denmark, Denmark
- Dr. Eberhard Seitz, Technische Universität Clausthal, Germany
- Prof. Elazar Gutmanas, Technion, Israel
- Prof. Javier Llorca, IMDEA, Spain
- Prof. Sergey Prokoshkin, MISIS, Russia
- Prof. Marc Seefeldt, Katholieke Universiteit Leuven, Belgium
- Prof. Dmitry Shtansky, MISIS, Russia
- Prof. Ruslan Valiev, Ufa State Aviation Technical University, Russia
- Prof. Sergey Psakhie, ISPMS, Tomsk, Russia

Key-Note Speakers and Tentative Titles of Lectures

- SPECIAL LECTURE: Dan Shechtman, Nobel Prize Laureat 2011 (Technion, Israel) on "Bioresorbable Mg alloys for medical applications" (to be confirmed)
- Gregory B. Olson (Northwestern University, Evanstone, USA) "Multistage modeling of mechanical behavior of metal alloys"
- Ruslan Valiev (USATU, Russia) "SPD Produced UFG titanium for medical applications: Structures, properties and modeling"
- Alexander Hartmaier (Ruhr-University Bochum, Germany)" Atomistic and continuum modelling of phase transformations"
- Javier LLorca (IMDEA, Spain) "High temperature mechanical properties of nanoscale metallic multilayers"
- Marc Seefeldt (Katholieke Universiteit Leuven, Belgium) "Dislocation and disclination-based mesoscopic modelling of substructure evolution and work-hardening in Ti"
- Vladimir Brailovski (L'École de Technologie Supérieure Montréal, Canada) "Superelastic Ti-based foams for biomedical applications: manufacturing, characterization and modeling"
- Eugen Rabkin (Technion, Israel) "Role of grain boundary diffusion in dissolution, oxidation and grain boundary sliding of nanocrystalline metal alloys"