3rd Nano2life Summer school on
Methods in Micro – Nanotechnology and Nanobiotechnology

The 3rd advanced Nano2life Summer school on *Methods in Micro – Nanotechnology and Nanobiotechnology* took place from June 25th to July 6th in the National Center of Scientific Research "Demokritos", Athens, Greece. Institutes of *MicroElectronics, Physical Chemistry, Material Science, Biology* and *Radioisotopes and Radiodiagnostic Products* as well as the *Foundation for Biomedical Research of the Academy of Athens* collaborated in the organization.

24 participants from several European Institutes (20 from Nano2Life) followed the summer school.

The school program including lectures (45 hours) and hands-on experiments (30 hours) covered three sections:

Section 1: Principles of biochemistry, cell biology, physics and microelectronics

Section 2: Core Nanobiotechnology methods and practices
- Unit 2.1: Micro and Nano-fabrication science and technology
- Unit 2.2: Nanomaterials for bio-applications, Characterization, Imaging
- Unit 2.3: Molecular and Cellular biology and Applications

Section 3: Towards Integrated Nanobiotechnology systems

The instructors of the lectures and laboratories (see program at http://www.imel.demokritos.gr/SummerSchool2007/index.htm) were scientists from the organizing institutes. In addition, lecturers from Nano2Life partners and some other academic institutes as well as the industry were invited. The invited speakers were Professor Yossi Shacham-Diamand (Tel-Aviv University, Israel), Dr Joel Rossier (DiagnoSwiss, Switzerland), Dr Martin Bennink (Twente University, The Netherlands), Professor Elias Eliopoulos (University of Athens, Greece), Dr Anna Mitraki (University of Crete, Greece), Dr Maria I. Klapa (University of Patras, Greece) and Professor G. C. Papaefthymiou (Villanova University, USA – IMS, NCSR Demokritos).

The main comments of the participants are presented below. They seemed to be satisfied with the school program and especially with the experience they gained through the laboratory courses. Most of lectures and lab courses were evaluated with very high scores.

In addition to the academic activities, the social activities (excursion at Mycenae - Epidaurus and one to Cape Sounion, where the school dinner took place) brought the participants closer and offered them the opportunity to discover some places in Greece. Finally, participants had the chance to socialize in characteristic places of Athens after the course hours.

EVALUATION

On usefulness, understanding, meeting expectations, quality and speed
1=poor, 5=excellent

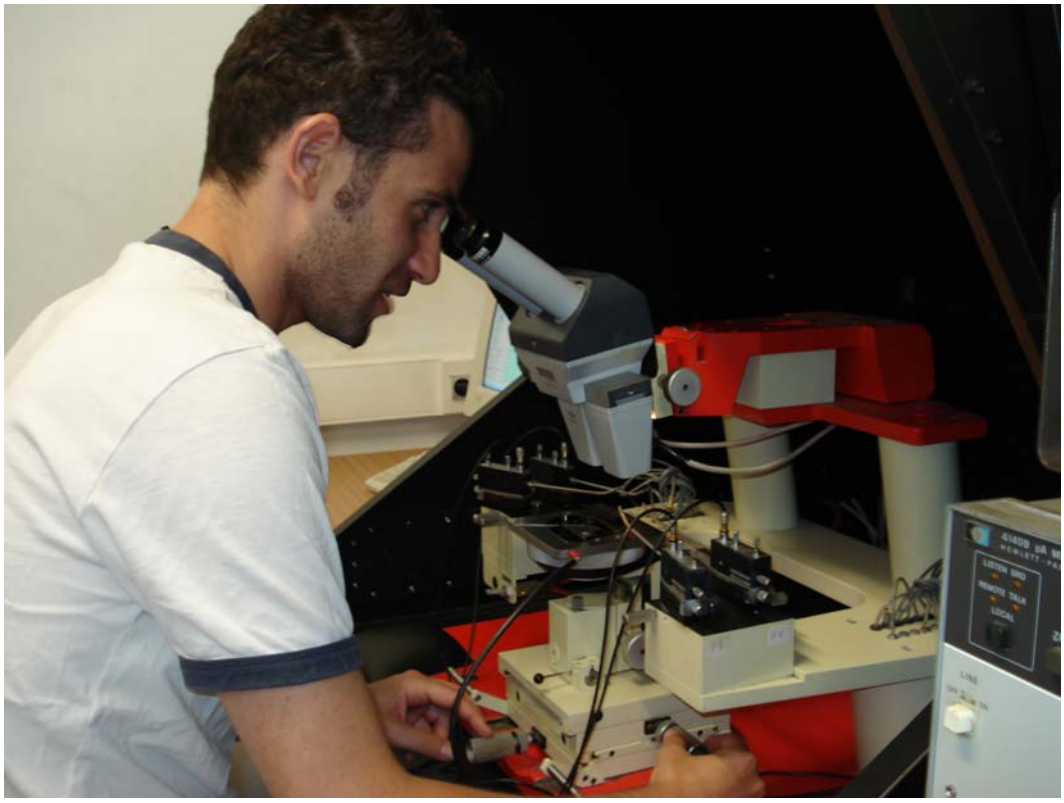
SECTIONS			AVERAGE
Section 1:		Principles of biochemistry, cell biology, physics and microelectronics.	4.05
Section 2:	**Unit 2.1:**	Micro and Nano-fabrication science and technology ***(lectures)***	3.88
	Unit 2.1:	Micro and Nano-fabrication science and technology ***(labs)***	3.74
	Unit 2.2:	Nanomaterials for bio-applications, Characterization, Imaging ***(lectures)***	3.58
	Unit 2.2:	Nanomaterials for bio-applications, Characterization, Imaging ***(labs)***	3.59
	Unit 2.3:	Molecular and Cellular biology and Applications ***(lectures)***	3.87
	Unit 2.3:	Molecular and Cellular biology and Applications ***(labs)***	3.91
Section 3:		Towards Integrated Nanobiotechnology systems ***(lectures)***	3.66
Section 3:		Towards Integrated Nanobiotechnology systems ***(labs)***	3.65

COMMENTS of PARTICIPANTS
Lectures
+ Some of the lectures were quite impressive especially some of the invited speakers presented very interesting material.
+ In general the speakers are very clear and easy to understand.
The level and depth of some talks could be higher.
Laboratories
+ I was very impressed. They were fascinating.
+ Interesting and well organized.
+ Generally good. The labs provided a good overview of the equipment that is used during the specific techniques.
- More interaction with techniques, less demonstration.
+ Very good idea to shorten lab time by having already prepared samples.
School Program
+ Very well organized so as to include so many lectures and labs at 2-week period.
+ Very interesting and a lot of different topics are covered during these 2 weeks.
+ Biological introduction might be shortened, 2nd part was very good and well organized, 3rd part should be improved with more specific & deeper topics.
- The program is quite full. Finishing after 17:00 is not very desirable for a lot of us.
- It would be perfect if the level would be slightly raised.
It was well oriented although most of the methods were more *micro* than *nano*.

PHOTOS

In the lecture hall

During the lab : Fabrication of plastic microfluidic devices by lithography and deep polymer plasma etching techniques.



During the lab : Electrical characterization of tunneling devices based on organic molecules or biomolecules

During the lab : Fabrication of microfluidic devices on plastic substrates by lithographic techniques

Excursion to Sounion

Dinner

In the classroom for the certificate award

Certificate award from School organizer Dr E. Gogolides and NCSR “Demokritos” head of education division Dr Ch. Tsamis