Summer School on *Methods in Micro – Nanotechnology & Nanobiotechnology*
13 - 17 September 2010

FINAL PROGRAM

MONDAY 13 SEPTEMBER - at NCSR "DEMOKRITOS"

09:00-09:30	***Welcome***
09:30-10:00	Lecture 1.1: Principles of nanotechnology and nanobiotechnology (Dr Evangelos Gogolides)
10:00-10:45	Lecture 1.2: Cell biology principles - Part 1 (Dr Dimitris Mastellos)
10:45-11:30	Lecture 1.3: Structure of biological macromolecules (**Invited**: Prof. Elias Eliopoulos)
11:30-11:45	***Coffee Break***
11:45-12:15	Lecture 1.3: Structure of biological macromolecules (**Invited**: Prof. Elias Eliopoulos)
12:15-13:00	Lecture 1.2: Cell biology principles - Part 2 (Dr Dimitris Mastellos)
13:00-14:00	***Lunch break***
14:00-15:30	Lecture 1.4: Microelectronic Materials and Device Technology (Dr Spyros Gardelis)
15:30-15:45	***Coffee Break***
15:45-16:45	Lecture 2.2.4: Scanning Probe Microscopy in Nanobiotechnology (Dr Eleni Makarona)
16:45-18:00	Lecture 1.5: Introduction to nanobiotechnology (**Invited**: Prof. Yossi Shacham-Diamand)

TUESDAY 14 SEPTEMBER - at NCSR "DEMOKRITOS"

09:00-10:15	Lecture 2.1.2: Microfabrication technologies for plastic analytical microfluidics (Dr Angeliki Tserepi)
10:15-11:30	Lecture 2.1.1: Conventional patterning schemes for hard substrates for bioanalytic microdevices (Dr Evangelos Gogolides)
11:30-11:45	***Coffee Break***
11:45-12:30	Lecture 2.1.3: Patterning of biomolecules and other biological substances (Dr Panagiotis Argitis)
12:30-13:15	Lecture 2.3.3: Binding Assays and Immunosensors (Dr Sotirios Kakabakos, Dr Christos Mastichiadis)
13:15-14:15	***Lunch break***
14:15-15:00	Lecture 2.3.4: DNA and Protein arrays: fabrication, detection and applications (Dr Panagiota Petrou)
15:00-15:45	Lecture 3.1: Principles of Integrated Biosensing Devices (Dr Konst. Misiakos)
16:00-23:00	***Excursion & Dinner***

WEDNESDAY 15 SEPTEMBER - at NCSR "DEMOKRITOS"

10:15-12:45 **(shift 1)**	Laboratory 2.1.1: Fabrication of microfluidic devices on plastic substrates by +2.1.2 soft lithography and deep polymer plasma etching (Dr A. Tserepi, Dr E. Gogolides) Laboratory 2.1.3: SPM Techniques for molecular devices (Dr E. Makarona, Dr D. Velessiotis) Laboratory 2.3.4: Fabrication of protein microarrays using lithography (Dr A. Douvas) +2.3.5 Fluorescence detection of protein arrays (Dr P. Petrou) Laboratory 3.1: Operation of a lab-on-a-chip optical device using model assays and real time measurements (Dr K. Misiakos)
12:45-13:45	***Lunch break***
13:45-16:15 **(shift 2)**	Laboratory 2.1.1: Fabrication of microfluidic devices on plastic substrates by +2.1.2 soft lithography and deep polymer plasma etching (Dr A. Tserepi, Dr E. Gogolides) Laboratory 2.1.3: SPM Techniques for molecular devices (Dr E. Makarona, Dr D. Velessiotis) Laboratory 2.3.4: Fabrication of protein microarrays using lithography (Dr A. Douvas) +2.3.5 Fluorescence detection of protein arrays (Dr P. Petrou) Laboratory 3.1: Operation of a lab-on-a-chip optical device using model assays and real time measurements (Dr K. Misiakos)
16:15-16:30	***Coffee break***
16:30-19:00 **(shift 3)**	Laboratory 2.1.1: Fabrication of microfluidic devices on plastic substrates by +2.1.2 soft lithography and deep polymer plasma etching (Dr A. Tserepi, Dr E. Gogolides) Laboratory 2.1.3: SPM Techniques for molecular devices (Dr E. Makarona, Dr D. Velessiotis) Laboratory 2.3.4: Fabrication of protein microarrays using lithography (Dr A. Douvas) +2.3.5 Fluorescence detection of protein arrays (Dr P. Petrou) Laboratory 3.1: Operation of a lab-on-a-chip optical device using model assays and real time measurements (Dr K. Misiakos)

THURSDAY 16 SEPTEMBER - at ACADEMY OF ATHENS

09:00-10:30	Lecture 2.3.1: Gel-based protein analysis methods (Dr Antonia Vlahou)
10:30-11:15	Lecture 2.3.2: Non-gel based protein analysis methods (Dr Spiros D. Garbis)
11:15-11:30	***Coffee Break***
11:30-13:30 **(shift 1)**	Laboratory 2.3.1: Protein separation by two-dimensional electrophoresis (Dr Antonia Vlahou) Laboratory 2.3.2: Mass spectrometry (Dr Spiros D. Garbis) Laboratory 2.3.3: Fabrication of protein microarrays using nanoplotter (Dr George Tsangaris) Laboratory 2.3.6: Bioinformatics basic theory & laboratory (Dr Sophia Kossida) Laboratory 2.3.7: Structural Bioinformatics: Molecular Simulations and Visualization (Dr George Spyrou) Laboratory 2.3.8: State of the art fluoresence imaging & confocal microscopy of biological samples (Dr Stamatis Pagakis)

13:30-14:30	***Lunch break***
14:30-16:30 **(shift 2)**	Laboratory 2.3.1: Protein separation by two-dimensional electrophoresis (Dr Antonia Vlahou) Laboratory 2.3.2: Mass spectrometry (Dr Spiros D. Garbis) Laboratory 2.3.3: Fabrication of protein microarrays using nanoplotter (Dr George Tsangaris) Laboratory 2.3.6: Bioinformatics basic theory & laboratory (Dr Sophia Kossida) Laboratory 2.3.7: Structural Bioinformatics: Molecular Simulations and Visualization (Dr George Spyrou) Laboratory 2.3.8: State of the art fluoresence imaging & confocal microscopy of biological samples (Dr Stamatis Pagakis)
16:30-18:30 **(shift 3)**	Laboratory 2.3.1: Protein separation by two-dimensional electrophoresis (Dr Antonia Vlahou) Laboratory 2.3.2: Mass spectrometry (Dr Spiros D. Garbis) Laboratory 2.3.3: Fabrication of protein microarrays using nanoplotter (Dr George Tsangaris) Laboratory 2.3.6: Bioinformatics basic theory & laboratory (Dr Sophia Kossida) Laboratory 2.3.7: Structural Bioinformatics: Molecular Simulations and Visualization (Dr George Spyrou) Laboratory 2.3.8: State of the art fluoresence imaging & confocal microscopy of biological samples (Dr Stamatis Pagakis)

FRIDAY 17 SEPTEMBER - at NCSR "DEMOKRITOS"

09:00-09:45	Lecture 2.2.1: Drug Delivery and Targeting Systems - Focus on Liposomes (**Invited**: Prof. Sophia G. Antimisiaris)
09:45-11:00	Lecture 2.2.2: Drug Delivery and Targeting Systems - Focus on cyclodextrin delivery, studied by NMR and XRD) (Dr Konstantina Yannakopoulou, Dr Irene Mavridis)
11:00-11:15	***Coffee break***
11:15-13:45 **(shift 1)**	Laboratory 2.2.1: Drug inclusion in cyclodextrins: monitoring in situ by NMR spectroscopy, X-ray diffraction characterisation of drug inclusion and 3-D visualisation (Dr K. Yannakopoulou, Dr I. M. Mavridis) Laboratory 2.2.2: Intracellular visualisation of Porphyrin-Cyclodextrin conjugates as PDT agents/chemotherapeutic drug carriers by confocal microscopy (Dr Th. Theodosiou) Laboratory 3.2: Demonstration of a capillary fluoroimmunosensor (Dr S. Kakabakos, Dr Ch. Mastichiadis)
13:45-14:45	***Lunch break***
14:45-17:15 **(shift 2)**	Laboratory 2.2.1: Drug inclusion in cyclodextrins: monitoring in situ by NMR spectroscopy, X-ray diffraction characterisation of drug inclusion and 3-D visualisation (Dr K. Yannakopoulou, Dr I. M. Mavridis) Laboratory 2.2.2: Intracellular visualisation of Porphyrin-Cyclodextrin conjugates as PDT agents/chemotherapeutic drug carriers by confocal microscopy (Dr Th. Theodosiou) Laboratory 3.2: Demonstration of a capillary fluoroimmunosensor (Dr S. Kakabakos, Dr Ch. Mastichiadis)
17:30	***Examination***
18:00	***Closing ceremony***