Project acronym	**FlexNet**
Project full title	*NoE FlexNet - Network of Excellence for building up Knowledge for improved Systems Integration for Flexible Organic and Large Area Electronics (FOLAE) and its exploitation*
Grant Agreement no.	247745
Call identifier	FP7-ICT-2009-3.3
Instrument	*Network of Excellence*
Start date of project	01.01.2010
Duration	36 month

D4.3.2

Summer or Winter school No. 2

Dissemination Level	**PU** **PU** Public **PP** Restricted to other programme participants (including the Commission Services) **RE** Restricted to a group specified by the consortium (including the Commission Services) **CO** Confidential, only for members of the consortium (including the Commission Services)
Responsible for this Deliverable	AUTh
Version	1.1
Due date of Deliverable	month 31.12.2011
Actual submission date	month 21/12/2011

On July 2011, AUTh organized the ISSON-11 Summer School at Vellideion Congress Center. During ISSON-11 the current state of knowledge in the several fields of NN for the training of the next-generation researchers and scientists in the multidisciplinary fields of NN was reviewed. The lectures were given by exceptional lecturers from Universities, Research Institutions and Industry coming from Europe and USA, and the lecture program will include plenary and parallel sessions in order for the ISSON-11 students to fix their own attendance schedule.

Figure 1: Summer School Brochure

The Summer School was divided in three parts

1. **N&N** (Nanomaterials, Nanoscale Characterization, Latest Applications): General lectures in NN
2. **Organic Electronics** (Devices, Materials, Manufacturing, Applications): Lectures focused on Organic Electronics
3. **Nanomedicine** (Nanobiotechnology, Nanomedicine, Methods, Applications)*

***** *this part of the summer school **was not** supported by FlexNet*

1. ISSON Program

The ISSON detailed program is listed below. The duration of the summer school was 3 days. In the program there also the lectures involved in the Nanomedicine part of the school.

	Saturday 9 July	
8:30-9:00	**Registrations**	
9:00-9:30	Welcome – Prof. S. Logothetidis	
9:30-10:00		
10:00-10:30		
10:30-11:00		
11:00-11:30	**Coffee Break**	
11:30-12:00	**“Atomic Force Microscopy: Principles and Applications”** S. Kassavetis, P. Karagiannidis LTFN - Aristotle University of Thessaloniki	
12:00-12:30		
12:30-13:00	**Plasmonics: Experiment, theory and applications** E. Lidorikis Uni. of Ioannina	
13:00-13:30		
13:30-14:00	**"Electron Microscopy"** C. Lioutas Aristotle University of Thessaloniki	
14:00-14:30		
14:30-15:00	**Lunch Break**	
15:00-15:30		
15:30-16:00	**"Introduction to OE"** C. Gravalidis LTFN - Aristotle University of Thessaloniki	**“Biofunctionalization and medical applications”** T. Choli-Papadopoulou Aristotle University of Thessaloniki
16:00-16:30		
16:30-17:00		
17:00-17:30	**"Molecular orientation in ultra-thin organic layers"** K. Fostiropoulos Helmholtz-Zentrum Berlin	**"Hands-on Nanomedicine by AFM"** groups of 2-3 students will perform AFM experiments on Biomaterials S. Kassavetis, P. Karagiannidis LTFN - Aristotle University of Thessaloniki
17:30-18:00		
18:00-18:30	Coffee Break	
18:30-19:00	**LAB TOUR**	
19:00-19:30		
19:30-20:00	Social Event: to know us better	

	Sunday 10 July	
8:30-9:00	**"Macromolecular design of semiconductive polymers and devices"** G. Hadziioannou Laboratoire de Chimie des Polymères Organiques - CNRS	**"Nanomedicine:From Basic Principles to Clinical Applications"** V. Karagkiozaki LTFN - Aristotle University of Thessaloniki
9:00-9:30		
9:30-10:00		
10:00-10:30	**“Physics of organic field-effect transistors” (I)** G. Horowitz Ecole Polytechnique, Palaiseau	**"Novel drug delivery systems" (I)** D. Fatouros Aristotle University of Thessaloniki
10:30-11:00		
11:00-11:30	Coffee Break	
11:30-12:00	**“Physics of organic field-effect transistors” (II)**	**"Novel drug delivery systems" (II)**
12:00-12:30	**Organic Photonics: The**	**"Plasma-Enhanced Surface Chemical Modification**

12:30-13:00	**photophysics behind and the new devices** G. Lanzani Politecnico di Milano	**for Controlled Cell Attachment and Protein Secretion in Articular Cartilage by Mechanotransduction"** K. Komvopoulos Berkeley
13:00-13:30		
13:30-14:00	**"Overview of the OLED technology""** L. Vignau Uni. Of Bordeaux	**"Cytotoxicity of Biomedical Coatings"** E. Kavatzikidou LTFN - Aristotle University of Thessaloniki
14:00-14:30		
14:30-15:00	**Lunch Break**	
15:00-15:30		
15:30-16:00	**"Overview of the printing methods for Large Area Organic Electronics Manufacturing"** T. Kolbuch COATEMA	**"Hands-on Nanomedicine by AFM"** groups of 2-3 students will perform AFM experiments on Biomaterials S. Kassavetis, P. Karagiannidis LTFN - Aristotle University of Thessaloniki
16:00-16:30		
16:30-17:00	**"Flexible Displays technology overview"** P. Fischer PlasticLogic	
17:00-17:30		
17:30-18:00		
18:00-18:30		
18:30-19:00	**ISFOE OPENING**	
19:00-19:30		
19:30-20:00		

	Saturday 16 July	
8:30-9:00	**"Vacuum methods and Materials Characterization of OTFTs"** C. Gravalidis, Ch. Pitsalidis LTFN - Aristotle University of Thessaloniki	**"Tissue Engineering"** I. Misirlis Uni of Patras
9:00-9:30		
9:30-10:00	**"Barrier Film and Encapsulation for OEs"** A. Laskarakis LTFN - Aristotle University of Thessaloniki	**"Nano-assemblies for biofunctionalization of materials"** P. Lavalle Uni. Of Strassburg
10:00-10:30		
10:30-11:00	"**OVPD® Technology for Organic Electronics" (I)** N. Meyer AIXTRON	**"Nanomedicine for cancer" (I)** J. Mollenhauer Uni of Southern Denmark
11:00-11:30	Coffee Break	
11:30-12:00	"**OVPD® Technology for Organic Electronics" (II)** N. Meyer AIXTRON	**"Nanomedicine for cancer" (II)** J. Mollenhauer Uni of Southern Denmark
12:00-12:30	"**Organic light-emitting field-effect-transistors**" J. Ulanski Technical University of Lodz	**"Nanoparticles for blood brain barrier"** S. Krol Fondazione I.R.C.C.S.
12:30-13:00		
13:00-13:30	**"Nanofabrication techniques for photonics and bio related devices"** N. Kehagias Catalan Institute of Nanotechnology	
13:30-14:00		
14:00-14:30	**"Fullerenes, Carbon Nanotubes and Graphene: Synthesis-Properties & Applications"** K. Porfyrakis, University of Oxford	
14:30-15:00	**Lunch Break**	

15:00-15:30	
15:30-16:00	**"Fullerenes, Carbon Nanotubes and Graphene: Synthesis-Properties & Applications"** K. Porfyrakis, University of Oxford
16:00-16:30	**"Commercializing of Nanotechnology"** M. Chachamidou LTFN - Aristotle University of Thessaloniki
16:30-17:00	
17:00-17:30	**"Remote SPM experiments"** S. Kassavetis, P. Karagiannidis LTFN - Aristotle University of Thessaloniki
17:30-18:00	
18:00-18:30	**30min test**
18:30-19:00	**Closing Remarks**
19:00-19:30	**Awards - Closing**

2. ISSON LECTURERS

In the following lists there are the invited lecturers for the N&N and Organic Electronics part of ISSON. The lecturers involved in the Nanomedicine part of the summer school are not listed here as this part was not supported by FlexNet

2.1 N&N (Nanomaterials, Nanoscale Characterization, Latest Applications)

School 1. N&N (Nanomaterials, Nanoscale Characterization, Latest Applications)

Prof. S. Logothetidis, "Nanotechnology and Applications"

Dr. Kassavetis, “Nanotubes and Fullerenes: Synthesis - Properties and applications”

Prof. E. Lidorikis, "Plasmonics: Experiment, theory and applications “

Dr. N. Kehagias, "Nanofabrication techniques for photonics and bio related devices"

Prof. K. Porfyrakis, "Fullerenes, Carbon Nanotubes and Graphene: Synthesis-Properties & Applications"

Dr. M. Chachamidou, " Commercializing of Nanotechnology «

Dr. Kassavetis, “Remote SPM experiments”

School 2. Organic Electronics (Devices, Materials, Manufacturing, Applications)

Dr. C. Gravalidis, "Introduction to Organic Electronics"

Dr. K. Fostiropoulos, "Molecular orientation in ultra-thin organic layers "

Prof. G. Hadziioannou, " Macromolecular design of semiconductive polymers and devices " '

Prof. J. Horowitz, "Physics of organic field-effect transistors”

Prof. G. Lanzani, "Organic Photonics: The photophysics behind and the new devices"

Dr. L. Vignau, "Overview of the OLED technology”

Dr. Th. Kolbuch, Coatema, Germany "Overview of the printing methods for Large Area Organic“

Dr. P. Fisher, "Flexible Displays technology overview “

Dr. C. Gravalidis, "Vacuum methods and Materials Characterization of OTFTs"

Dr. A. Laskarakis "Barrier Film and Encapsulation for OEs“

Dr. N. Meyer, 'OVPD® Technology for Organic Electronics'

Prof. J. Ulanski, "Organic light-emitting field-effect-transistors"

3. PARTICIPANTS

The total number of the participants attended the summer school was around 79 students, mostly from Greece and South-East Europe. Below there is the number of participants per country that attended the ISSON.

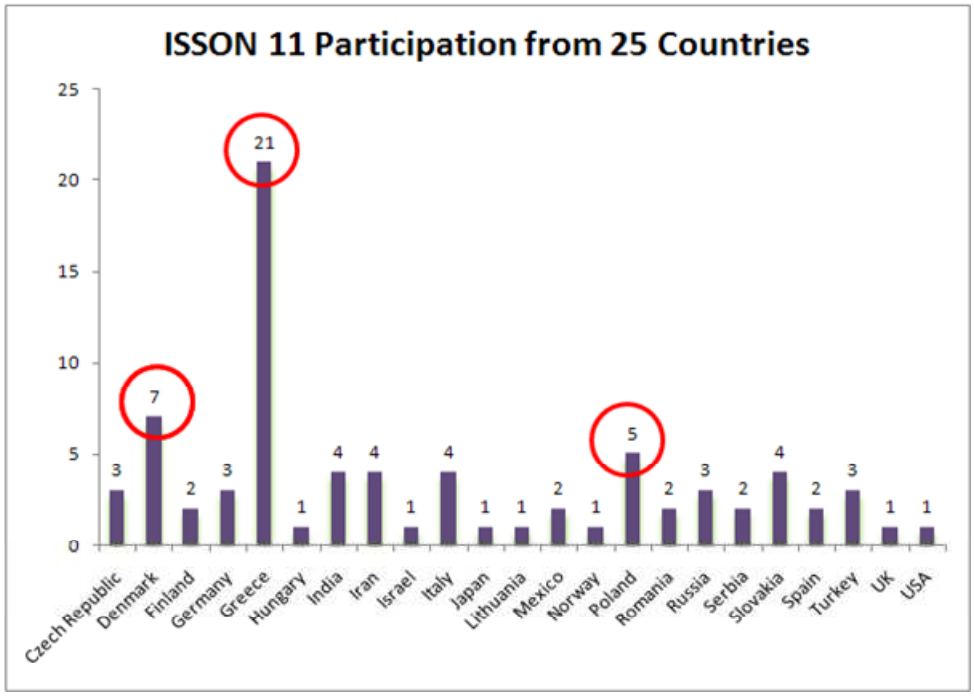

Figure 2: Diagram of the number of participants per country

4. PHOTOS

Figure 3: Photos from the 1st Day of the ISSON11 with the opening lecture and the lab visits.

Figure 4: Photo from the first and the second day of the school

5. CONCLUSIONS

The organization and the realization of the ISSON was successful taking into account the number of participants and the excellence of the invited lecturers. The participants were impessed not only from the lectures but also they had opportunity to have a close look on equipment related to Organic Electronics technology.

6. NEXT SUMMER SCHOOL

The next summer school 6th International Summer School on "N&N:Organic Electronics & Nanomedicine" (ISSON-12) will take place on 30 June, 1 July & 7 July 2012 in Thessaloniki. Again only the Organic Electronics part will be supported from FlexNet. More information about the critical deadlines you can find in the site http://nnconf.physics.auth.gr/isson.html