



Athens, Greece
EuroSensors
September 4-7, 2011



XXV

EUROSENSORS XXV SCHOOL

LECTURE PRESENTATIONS

Megaron Athens International Conference Center
Sunday, September 4, 2011

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Room MC2

09:00 - 09:15	<p>Eurosenors School Opening - Welcome Angeliki Tserepi, Eurosenors School Chair</p>
09:15 - 09:45	<p>Light on sensors development: a bit of history, perspective and opportunities, needs, obstacles Arnaldo D'Amico (University of Tor Vergata) and Lina Sarro (Delft University of Technology) EUROSENSORS Steering Committee Members</p>
09:45 - 11:15	<p>Autonomous smart sensors: sensors network to the Internet of Things Pierre-Damien Berger MINATEC CEA LETI, France</p> <ul style="list-style-type: none"> • Microsystem developed at LETI – Grenoble France • Smart devices & autonomous systems • Lower power & power management • Energy scavenging • Embedded electronics • Wireless sensor network for habitat
11:15 - 11:45	<i>Coffee break</i>
11:45 - 13:15	<p>Lab-On-Chip technologies Nikos Chronis Dept. of Mechanical Engineering, The University of Michigan, USA</p> <ul style="list-style-type: none"> • Microfluidic & Lab-on-chip Materials & Microfabrication • Microfluidics: Sensors and Actuators • Microoptics & Opto-fluidics • Integration: Lab-on-chip Systems • Lab-on-chip Research and Industrial Examples
13:15 - 14:30	<i>Lunch</i>
14:30 - 16:00	<p>MEMS/NEMS: Micro/Nanocantilever technologies Panos Datskos Oak Ridge National Laboratory & University of Tennessee, USA</p> <ul style="list-style-type: none"> • General definitions and concepts • Micro/ nanocantilever detectors • Microfabrication • Readout schemes • Figures of merit and fundamental limitations • Examples of applications of cantilever sensors • Future outlook
16:00 - 16:30	<i>Coffee break</i>
16:30 - 18:00	<p>Magnetic MEMS Dimitris Niarchos Inst. of Materials Science, NCSR "Demokritos", Greece</p> <ul style="list-style-type: none"> • Introduction to MEMS • Magnetic MEMS vs Electrostatic MEMS • Advantages and Disadvantages • Fabrication of Magnetic MEMS • Characterization Techniques • Various Applications • QUO VADIS Magnetic MEMS?

Eurosensors School Speakers

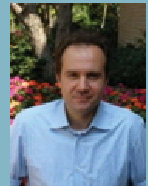


Pierre-Damien Berger
MINATEC CEA LETI, France

Dr Pierre Damien Berger was born in 1969. He graduated in optoelectronics engineer at Grenoble University France in 1993. He received his doctoral level for the work on VCSEL characterization at the LPM/INSA de Lyon, France in 1997. From 1998 to 2000, in a local public agency, he promoted the technological research from labs to industry in the sensor field. From 2000 to 2007, he has been appointed as R&D Program Manager at ATMEL Grenoble dealing mainly with CMOS Imaging sensor. He has been in charge of several European programs, and for most of them as project leader. He has also been involved as expert in the EURIMUS/EURIPIDES technical committee. From early 2007, he moved at MINATEC CEA LETI where he heads the Smart Device Programs within the System Department.

Nikos Chronis

Department of Mechanical Engineering, The University of Michigan, USA



Nikos Chronis received his B.S. and Ph.D. degrees from Aristotle University (Greece) and University of California at Berkeley in 1998 and 2004 respectively, both in mechanical engineering. In 2000, he joined the Berkeley Sensor and Actuator Center at the University of California at Berkeley as a graduate student researcher under the supervision of Luke Lee. In 2004, he worked as a postdoctoral researcher at Cori Bargmann's lab at Rockefeller University (New York) where he developed microfluidic tools for studying neural networks in the nematode *C. elegans*. In August 2006, he joined the faculty of Mechanical Engineering at the University of Michigan as an assistant professor. His research interests include BioMEMS, microfluidics, optical MEMS for lab-on-chip applications, and in-vivo imaging of neural circuits in *C. elegans*. He is the recipient of the 2009 NIH Director's New Innovator Award.

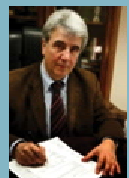


Panos Datskos
Oak Ridge National Laboratory
& University of Tennessee, USA

Panos Datskos is currently the group leader of the NanoSystems and Structures Group at Oak Ridge National Laboratory. He is also a Professor at the University of Tennessee and an Adjunct Professor at Marquette University. During his tenure at ORNL he led R&D programs covering a broad range of science and technologies in nanomaterials, MEMS and microsensors at Oak Ridge National Laboratory. He has over 20 years experience in scientific research and development that involve the physics of nanomaterials, micro and nanomechanical (MEMS/NEMS) systems, micro-mechanical physical and chemical sensors, the physics of electron transport and ionization in gases and liquids. His current research interests focus on nanostructured surfaces, MEMS and NEMS and involve the development of physical and chemical MEMS/NEMS sensors using microcantilevers, microcalorimetric spectroscopy, and uncooled MEMS infrared (IR) detectors. He has received a 2000 Discover award, and five R&D 100 Awards, which are given to the 100 best technologies of the year. He has 80 open literature publications, over 100 conference proceedings and presentations, 12 issued patents and over 5 pending patents.

Dimitris Niarchos

Inst. of Materials Science, NCSR "Demokritos", Greece



Dimitris Niarchos obtained his Ph.D. in Materials Science from Athens University (Greece) in 1978 and a Masters Degree in Management of R&D from Loyola University in 1985. From 1978 to 1981 he was Distinguished Post-Doctoral Researcher at Argonne National Lab working on Hydrogen Storage Materials and Low Tc superconductors. From 1981 to 1985 he was Assistant Professor at the Illinois Institute of Technology, Chicago Illinois, in charge of the Low Temperature Physics Lab working in the area of multilayer Metallic Thin Films. He moved to the Institute of Materials Science of the NCSR "D" in 1985 and since then he is responsible for the Magnetism and Superconductivity group working on bulk and thin films of HTS-Superconductors, Magnetic Multilayers for sensor and M-O applications and he leads a EU consortium on magnetic recording. From 1994-1999 he served as the Director of Institute of Materials Science and from 1996-1999 as Vice President of the NCSR "Demokritos". From 2005-2010 he was elected as Director and President of the Board of the NCSR "Demokritos". He developed the lab for thin film growth of magnetic and superconducting/oxide multilayers using sputtering and laser ablation. He is the author and co-author of more than 400 publications and has managed more than 30 National and EU projects with a budget of approximately 8 MEURO. He has served as advisor for the Greek Government, NATO and the EU.

For registration to the Eurosensors XXV School, please visit the EUROSENSORS XXV web page:
www.eurosensors2011.org

Eurosensors School Registration fees: 90 € (include School material, coffee breaks and lunch)

Participation to the EUROSENSORS Conference is not required for participation to the School

EUROSENSORS School addresses the fundamentals of sensor science technologies and discusses recent development/potential applications. The lectures are given at the graduate level and typically span from the scientific basic principles to the implementation in actual devices. They are intended for PhD students and young researchers in the field, researchers who have recently entered the interdisciplinary field of sensors and actuators, and for colleagues who want to brush up their fundamental knowledge in certain fields.



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