SCIENTIFIC REPORT

1. Scientific part of the event

The exploratory workshop "Nanoscience and Nanotechnology" took place during 17 and 18 of September 2008, in connexion with the conference *"Diaspora in cercetarea stiintifica romaneasca"* and approached an innovative and multidisciplinary domain. Recognized scientists representants of Romanian Diaspora working in micro and nanotechnologies in Europe, Asia and USA were present. The workshop, organized by INCD Microtehnologie –IMT Bucharest, was a forum of recognized scientists from Romania and from Romanian Diaspora, presented original lectures on these topics illustrated with own results; new directions were also presented.

The workshop started with a visit in the laboratory of IMT Bucharest, in the new clean room and the new grey zone, both recently settled. This zone will be the place for the new facilities purchased (or to be purchased) in the frame of national project "Capacities" recently win by IMT Bucharest during the PN II competition. The visis were made by small group – 4 persons once -. There were visited also the microphotonics and microwave labs. These laboratories have win projects in the Capacities – Modul IV Program and purchased a Raman spectrophotometer, a vector network analyser and a "on wafer" characterization of the microwave and millimeter wave circuits up to65GHz. These two laboratories are member of an European Center of Excellency in the frame of the FP7 project MIMOMEMS – the kick-off meeting took place 2 days before the workshop. The FP7 MIMOMEMS Project will finance the purchase of other equipments.

The guests from Diaspora were imprest by the efforts done in the last years by the Romanian researchers and by the ministry of research in order to assure a decent research infrastructure.

The scientific sessions of the workshop started after the visits. The innovative topics of nanoscience and nanotechnology, with high impact on evolution of science, allow the presentation of very interesting lectures with topics related to nanomaterials, nanoparticles and naowires, nanoprocesing for acoustic devices, nanoscale CMOS and to nanobio domain.

The first session was open by Prof. Dan Dascalu, Member of the Romania Academy, General manager of IMT Bucharest, one of the promotors of micro and nanotechnologies in Romania.

The invited speakers from Diaspora were:

Dr. Andreas Wild, Freescale Semiconductor, Director, Technology Solutions Organization EMEA, USA,

Dr Wild had a fruitful activity in the Baneasa platform Hill 1981, boeing one of the best designer of integrated circuits in Romania. He worked at one of the biggest transnational company, Motorota. Now he is with the semiconductor division of Motorota, named Freescale Semiconductor , where is Director of technology solutions. In this quality he opened a research subsidiary in Romania.

In the paper "*Current Challenges of Semiconductor Technology in the Nanometric Generations"* (http://www.imt.ro/conferinta_diaspora_08/prezentari/Andrei_WILD.ppt**)** **Dr. Wild** presented a rewiev of the CMOS processes in the nanotechnology era and the challenges implied by scaling th nano dimensions. Following Moore law, the electronic components are continuous minimise there dimensions, boeing in the 100nm – 10 nm range. In the same time, the wafers used had 300mm diameter, and 450 mm diameter are in study. The present technology allow complex electronic systems to be integrated on a single chip. Future evolution has to find economic jeans fo follow the integration, combining the MOS swich with new devices, based on quantic and spin fenomena, based on chemical processes and probable biological processes. Nanodevices should be integrated monolithic or hybrid. This evolution require technological accomodation for

lithography, metalizations (new materials) fiability,, economic challenges. The need to use polimeric naterials in this technology has made the introduction to the presentation prof Prof B Simionescu.

Dr. Daniel Lapadatu, received his engineering degree from "Politehnica" University of Bucharest, in 1991, and the Ph.D. in applied sciences from Katholieke Universiteit Leuven, Belgium, in 1996, specializing in microelectronics and solid state physics. He worked since then within the Research and Technology Development Department of Infineon Technologies SensoNor. Dr Lapadatu has presented *"MEMS Development at Infineon Technologies SensoNor"* (http://www.imt.ro/conferinta_diaspora_08/prezentari/Daniel_Lapadatu.pdf) with accent on Automotive, Industrial &Multimarket: Car Electronics (power train, safety management, body & convenience, multimedia/telematics), Power control (distributed power generation, automation/motor control, transportation, power supplies, medical, building control), Chip Card & Security (communications, payment, identification, entertainment) CommunicationSolutions: Wireless communications (mobile phones,cellular base stations, cordless telephones, RF technology for short, medium and long-rangedistances, TV receivers, navigation), Wireline communications (voice communication,broadband data communication, integrated voice and data communications, wireless infrastructure, home networks). Many of these applications are using MEMS devices with nanometric dimensions.

Dr. Cristian Papusoi, presented the paper "*Memorii magnetice de tip MRAM cu scriere asistata termic - functionare si aplicatii"* ,(Thermally Assisted-MRAM. Definition, structure and principle of operation. Electric characterization, Regimes of operation. Power of the electric pulse PHP *vs.* junction temperature TAF. Exchange bias as a temperature probe. Electric pulse width d *vs.* junction temperature TAF

Dr. Ciprian Iliescu, presented *"Dielectrophoresis from 2D to 3D, from micro to nanoparticles"(http://www.imt.ro/conferinta_diaspora_08/prezentari/Ciprian_Iliescu.pdf)* . DEP force, Polarization factor, Positive and negative DEP, Classification of the DEP devices and Problems associated with DEP, Structures of DEP with 3D electrodes and asymmetric electrodes, Simulation of the electric field in DEP structures, Consideration about Joule effect, Consideration about fabrication process, Application 1: cell trapping, pplication 2: cell sorting, Sequential cells sorting in DEP with 3D electrodes, Separation under the continuous flow, Bidirectional separator, DEP for nanoparticles viruses purification, DEP filter, DEP chip for liver cells assembly and culture, Tissue Reconstruction Based on Cell Sheet Engineering

Dr. Mircea Modreanu presented "*Novel Advanced Transparent Conducting Oxides: From atoms to the Systems"*
(http://www.imt.ro/conferinta_diaspora_08/prezentari/Mircea_Modreanu.pdf) showing transparent conductive oxides (TCOs) which are remarkable materials: co-existence of optical transparency and of electrical conductivity. First principles studies of doping and alloying Cu2O prototype to propose new p-type TCO candidates, In depth studies of optical, microstructural and electrical properties of p-type TCO candidates, both as bulk and as thin films

The workshop was completed with the presentation on the Romanian scientists:

Acad. Bogdan Simionescu, Macromoleculae Institute "P Poni"of the Roamnian Academy Iasi, Romania prezented "*Polimeri functionali - elemente de constructie pentru arhitecturi macromoleculare si supramoleculare*",
(http://www.imt.ro/conferinta_diaspora_08/prezentari/Bogdan_Simionescu.ppt) with topics: Thermosensitive gels, self assembled core-shell microparticles , interconnected pore structure, Self-assembling microgels, "on-off" switching materials, controlled drug delivery and storage systems, biomacromolecules storage/release, tissue engineering, in combination with

biodegradable polymers (collagen), Functional polymers (oligomers) – versatile intermediates (building blocks) for complex, nanostructured architectures and new polymeric materials

Dr. Cristian Kusco, INCD Microtehnologie, Bucuresti, Romania in lucrarea "*Plasmon excitations in nanostructured materials"* (http://www.imt.ro/conferinta_diaspora_08/prezentari/Cristian_Kusko.ppt, The paper shows by performing FDTD simulations that a metamaterial realized from a polar dielectric, titanium oxide TiO/_2 – /anatase, mimics strong magnetic activity at terahertz frequencies.// Due to its crystal structure, TiO2 anatase presents active phonon modes in the far infrared wavelengths leading to a high dielectric constant of 50 – 120 in the range of wavelengths //l//=100 – 40 mm. This leads to the presence of Mie resonances in a periodic array of cylinders causing a strong effective magnetic response. Using the S – parameter formalism, we numerically investigate the electromagnetic properties of microstructured anatase, showing that this system presents effective negative permeability in the range of wavelengths l=80 – 40 mm. Finally, we have shown that by combining to polar dielectrics one can obtain a metamaterial with negative refractive index at terahertz frequencies/ settled

Dr. Magdalena Ciurea, INCD Fizica Materialelor, Bucuresti, Romania presented a new model for *"Efectul confinarii cuantice in structura energetica a sistemelor cu dimensionalitate redusa"* (http://www.imt.ro/conferinta_diaspora_08/prezentari/Magdalena_Ciurea.ppt) systems with nanometric dimenssions, at least in one direction. Systems 2D, QWsc and 1D were presented.

Dr. Alexandru Muller, IMT Bucharest, Romania, presented the paper "*Nanoprocesing and micromachining of WBG semiconductors for acoustic devices and UV photodetection"* (http://www.imt.ro/conferinta_diaspora_08/prezentari/Alexandru_Muller.pdf)
He presented the problems of wide band gap semiconductors and the technological problems of nanlithography on this kind of substrate, on order to obtain accoustic devices and UV photodetection. Film bulk accoustic rezonator and surface accoustic wave structures were processed on WBG materials by micro and nanoprocesing.

Dr. Oana Dragos, Technical Physiscs Institute, Iasi, Romania presented *"Single and multilayered magnetic nanowires: preparation and characterization*" (http://www.imt.ro/conferinta_diaspora_08/prezentari/Oana_Dragos.pdf) with methods of obtaining nanowires, membranes with nonopores as substarte for nanowires, array of magnetic nanowires for "spinswitch" devices. A comparative study of amorf and nanocristaline magnetic nanowire was presented.

The last session of the workshop was a round table with panel disscutions. Success models (Infineon Technologies SensoNor, Freescale Semiconductor, IMT Bucharest, Tyndall Institute, Institute of Bioengineering and Nanotechnology, Singapore, SPINTEC, CEA/CNRS, Grenoble) were presented during the scientific presentation and during the disscutions from the previous sessions. So, in the panel disscurions, Dr A Muller proposed to disscuss about publishing and patent policy in the research institute, universities and world high tec companies. The disscutions were very interseting and the representatnts of the well known transnational companies Freescale Semiconductor and Infineor Technologies, were present. The scientists were highly interested about research in the new technologies and processes, publishing policy, participation at international conferences and patent policy in high tec companies.

Dr Andreas Wild and Dr. Daniel Lapadatu presented the situation in their company. The companies are very interested that their employees publish scientific papers(in order to augment the company prestige), but the papents are preferred. It is encouraged paqrticipation at huge conferences, conferences bringing advantages for companies.

Dr Ciprian Iliescu presented the publishing policy in Institute of Bioengineering and Nanotechnology, Singapore. The researcher are evaluated each year only by the number of ISI papers.

Participation in European Projects, bi and multilateral cooperation was also disscuss.

The Romanian scientists presented at the workshop their own research and also thei **established new contacts in the nanoscience and nanotechnologies**. New contacts and cooperation were disscused. A young physicist from IMT will be learned 6 month at Institute of Bioengineering and Nanotechnology, Singapore on magnetophoresys of red and white blood cells. INCD Fizica Tehnica, Iasi has established scientific contacts with the group of Dr C Papusoi from SPINTEC, CEA/CNRS, Grenoble.

Cooperation between IMT and Freescale semiconductor regarding WBG semiconductor technologies will be disscuss. Dr Wild can give advices in exploitation of the results of this research. Freescale Semiconductor is also inteserted by new materials obtained at INCD Fizica materialelor. Contacts between IMT and Sensonor, Infineon in sensors topics were made.

Durable scientific and technical cooperation between Romanian and Diaspora will be made in the topics of nanoscience and nanotechnology

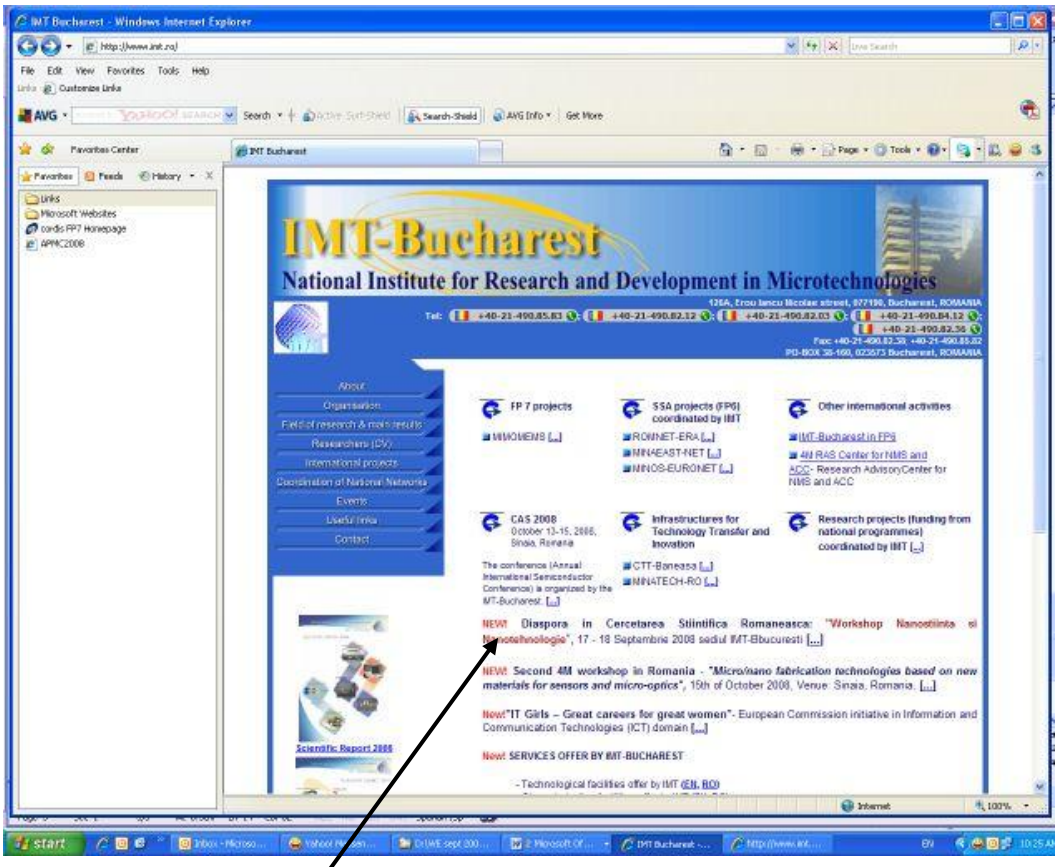
2. The organization of the event

The exploratoy workshop “Nanoscience and Nanotechnologies’ was organized during 17 and 18 of September 2008 by R&D National Institute for Microtechnology (IMT Bucharest). The workshop was in connection with thye conference “Diaspora in cercetarea stiintifica romaneasca”. Original lectures on nanoscience and nanotechnology were presented.

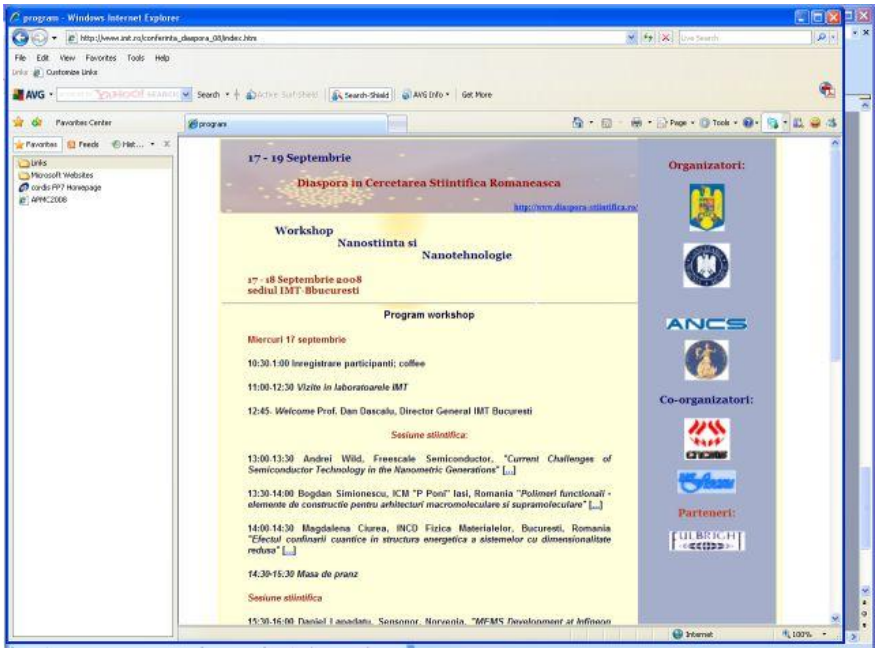
IMT Bucarest assures all the local administrative arrangements for the workshop. Before the workshop, intense e-mail communications were mede with the authors of the presentations; the final program was transmitted to the invited speakers and to the participants; announce about the hotel and transport of the speakers and all information necessary for the participants from Diaspora and Romania.

The transport on the road to IMT Bucarest is very difficult , the road is in working and the traffic is very hard, the karting tour of the workshop was delayed at 10:30 in the first day and at 10:00 in the second day.

A web page was designed and open on the IMT web page http://www.imt.ro/conferinta_diaspora_08/ presnting the program of the workshop

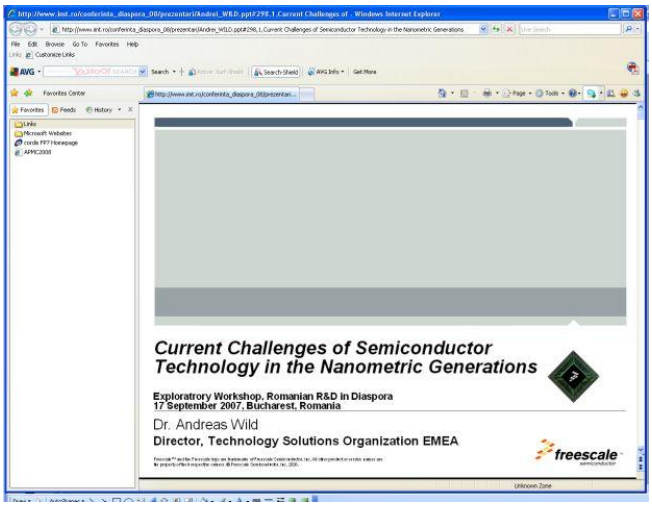


First page of www.imt.ro with link to the workshop page



The web page http://www.imt.ro/conferinta_diaspora_08/

Alter closing of the workshop, the lectures were presented on the web page



First slide of Dr Andeas Wild presentation

The poster of the workshop is presented at the end of the report.

A secretariota of the event was organizad during the workshop. Access to phone, fax, computers, printing, Internet, e-mail was assured.

IMT Bucarest organizad the transporto f the invited speakers fron aitport to hotel and from the hotel to IMT. Also IMT assured the transporto f all participants at the social events organizad during the evening in 17 and 18 of September.

3. Final; program;

Conferinta "Diaspora in cercetarea stiintifica romaneasca"
17 – 19 Septembrie, Bucuresti

Program workshop "Nanostiinta si Nanotehnologie

Organizator workshop: IMT Bucuresti
Sediul IMT Bucuresti

Miercuri 17 septembrie

10:30 – 11:00 Inregistrare participanti; coffee

11:00 – 12:30 ***Vizite in laboratoarele IMT***

12:45 – *Welcome* **Prof. Dan Dascalu,** Director General IMT Bucuresti

***Sesiune stiintifica*:**

13:00 – 13:30 **Andrei Wild,** Freescale Semiconductor, ***"Current Challenges of Semiconductor Technology in the Nanometric Generations"***

13:30 – 14:00 **Bogdan Simionescu,** ICM "P Poni" Iasi, Romania "*Polimeri functionali - elemente de constructie pentru arhitecturi macromoleculare si supramoleculare"*

14:00 – 14:30 **Magdalena Ciurea,** INCD Fizica Materialelor, Bucuresti, Romania *"Efectul confinarii cuantice in structura energetica a sistemelor cu dimensionalitate redusa"*

14:30 – 15:30 Masa de pranz

Sesiune stiintifica

15:30 - 16:00 **Daniel Lapadatu,** Sensonor, Norvegia, *"MEMS Development at Infineon Technologies SensoNor".*

16:00 - 16:30 **Cristian Papusoi,** SPINTEC, CEA/CNRS, Grenoble, Franta, "*Memorii magnetice de tip MRAM cu scriere asistata termic - functionare si aplicatii"*

16:30 - 17:00 **Cristian Kusco,** INCD Microtehnologie, Bucuresti, Romania "*Plasmon excitations in nanostructured materials"*

Joi 18 septembrie

Sesiune stiintifica

10:00 – 10:30 **Ciprian Iliescu,** Inst of Bioengineering and Nanotechnology, Singapore, *"Dielectrophoresis from 2D to 3D, from micro to nanoparticles"*

10:30 – 11:00 **Alexandru Muller,** INCD Microtehnologie, Bucuresti, Romania, "*Nanoprocesing and micromachining of WBG semiconductors for acoustic devices and UV photodetection"*

11:00 – 11:30 Coffee break

Sesiune stiintifica

11:30 - 12:00 **Oana Dragos,** INCD Fizica Tehnica, Iasi, Romania *"Single and multilayered magnetic nanowires: preparation and characterization*".

12:00 - 12:30 **Mircea Modreanu**, Tyndall, Cork, Irlanda, "*Novel Advanced Transparent Conducting Oxides: From atoms to the Systems"*
"

13:00 – 14:00 Masa de pranz

14:00 – 16:00 ***Discutii in panel, prezentare „Modele de succes"*** (ICM „Petru Poni" Iasi, Infineon Technologies SensoNor, Freescale Semiconductor, IMT Bucuresti, Tyndall,.....)

16:00 - 16:30 Concluzii, inchiderea workshopului

4 **(keyspeakers) –;**

Nr	Title	Name	First name	Country	Organization	Address	Tel Fax	e-mail
1	Dr	Ciurea	Lidia Magdalena	Romania	INCD Fizica Materialelor	105 bis Atomistilor Street, Bucharest-Magurele, 077125	+ 40 21 493 0195 FAX : + 40 21 4930267	ciurea@infim.ro
2	Dr	Dragos	Oana	Romania	INCD Fizica Tehnica, Iasi	, 47 Mangeron Blvd., P.O. Box 833,	232 430680	odragos@phys-iasi.ro
3	Dr	Iliescu	Ciprian	Singapore	Inst of Bioengineering and Nanotechnology	Floravale, Blk. 226, Westwood Ave, #08-17, Singapore648357,	+65-68247137	ciliescu@ibn.a-star.edu.sg;
4	Dr	Kusko	Cristian	Romania	INCD Microtehnologie	str Erou Iancu Nicolae 32 B,	tel 021 4908212 fax 021 4908238	Cristian.kusko@imt.ro
5	Dr	Lapadatu	Daniel	Norvegia	Infineon Technologies SensoNor,	Knudsrødveien 7 P.O.Box 196 N-3192 Horten Norway	+474888 2224	daniel.lapadatu@sensonor.no
6	Dr	Modreanu	Mircea	Irlanda	Tyndall National Institute, University College Cork,	Tyndall Institute "Lee Maltings" Prospect Row Cork Ireland.	+353 21 4 904177 Fax: +353 21 4270271	mircea.modreanu@tyndall.ie
7	Dr	Muller	Alexandru	Romania	INCD Microtehnologie	str Erou Iancu Nicolae 32 B,	tel 021 4908581 fax 021 4908238	Alexandru.muller@imt.ro,
8	Dr	Papusoi	Cristian	Franta	CEA, Grenoble,	81 Abbe Gregoire, 38000 Grenoble, France	+33628684816	cristian_papusoi@yahoo.com
9	Acad	Simionescu	Bogdan	Romania	Academia Romana - Institutului de Chimie Macromoleculara "Petru Poni"	700487 Iasi, Romania	Tel.: (40)-232-217454; (40)-744-507077, Fax: (40)-232-211299	bcsimion@icmpp.ro
1	Dr	Wild	Andreas	USA	EMEA, Freescale Semiconductor		+ 49 172 941 9008	Andreas.Wild@freescale.com

Dr. Andreas Wild is the R&D Director of Freescale Semiconductor in EMEA, leading the research laboratories located in Europe. He is one of the pioneers of the Crolles2 Alliance STMicroelectronics and Philips, and a Director of Freescale's entity in Crolles.
Andreas Wild has a Ph.D. degree from the Institute of Atomic Physics in Bucharest, and has a MS from the Polytechnic Institute Bucharest, Romania.
He started his career as an R&D engineer with the Baneasa S.A. company in Bucharest, working both process development, then in IC design. In parallel, he was an Associate Professor of the Polytechnic Institute Bucharest. He joined Motorola in Munich, Germany, in 1982, where he worked in quality assurance and product analysis, IC design, and eventually as Engineering Manager of the European ASIC Operation.
1993 he joined the central R&D laboratories of Motorola's Semiconductor Products Sector in Phoenix, Arizona, as a R&D Lab manager in the Advanced Design Technologies, then in the Advanced Custom Technologies laboratories. His last function before the Sector reorganization was the Chief Technologist of Sector Technology.
After the reorganization, Dr. Andreas Wild became Chief Scientist and Director of Engineering for Motorola SPS in Latin America. He established Freescale centers for technology development, for IC design and software development, in Brazil, Chile, Mexico, and Romania. He joined the European organization in his current function in 2000.
Dr. Andreas Wild authored 21 patents (15 in USA), and has more than 50 publications.

Dr. Mircea Modreanu, Tyndall National Institute, University College Cork, Ireland, e-mail mircea.modreanu@tyndall.ie received the M.Sc. degree in physics from the University of Bucharest, Romania, in 1993, and the Ph.D. in physics from the same university in 2002. He is currently researcher at Tyndall National Institute, University College Cork, Irlanda.
Expertise in deposition of thin films, vapour phase chemical deposition with applications in micr- and nanoelectronics, optoelectronics, microsystems, new materials for the last CMOS generation, new transparent semiconductors materials, characterization of thin films and ultra thin films, photometric and ellipsometric spectroscopy, infra red spectroscopy and Raman spectroscopy.
He has published 47 papers in ISI papers and 60 international conference papers (6 invited).

Dr. Daniel Lapadatu, SensoNor, Norway, +47 4888 2224, email: daniel.lapadatu@sensonor.no received his civil engineering degree from "Politehnica" Univeristy of Bucharest, Romania, in 1991, and the Ph.D. in applied sciences from Katholieke Universiteit Leuven, Belgium, in 1996, specializing in microelectronics and solid state physics. He worked since then within the Research and Technology Development Department of Infineon Technologies SensoNor. He has managed several SensoNor's subprojects dealing with tire pressure monitoring systems, pressure monitoring devices for medical applications, accelerometers for air bag systems, inclinometers and angular rate sensors for roll-over detection, etc. Since 2003, Mr Lapadatu has been responsible with running SensoNor's Multi Project Wafer (MPW) service and co-ordinating Infineon's activities within several European projects, such as Europractice, microBUILDER and STIMESI. Mr Lapadatu has authored and co-authored tens of articles about micromachined mechanical sensors and MEMS-related technologies. He has authored and co-authored specialised chapters in various scientific books, the most recent being chapter 5.1, "Bulk Micromachining", in "Sensors for Automotive Technology" published by Wiley-VCH in 2002. He is a member of the Industrial Advisory Board of the NoE Patent DfMM

Dr. Cristian Papusoi, SPINTEC, CEA/CNRS URA 2512, Bat 1005, 17 r des Martyrs, 38054, Grenoble, France, email: cristian_papusoi@yahoo.com received the M. Sc. Degree in physiscs from "A.I. Cuza" University, Iasi in 1992 and the PhD in physics, from the same university in 1999. He was lecturer at the Electricity and Electronics Physics Chair at "A.I.Cuza" university. He was post doctoral researcher at Information Storage materials Lab, Toyota Technol. Inst, Nagoya, Japan between 2000 and 2003, at Center for Materials for Information Technology, Alabama Univ., Tuscalosa, USA between 2004 and 2006. Now he is researcher at SPINTEC, CEA/CNRS, Grenoble, France. He is specialized in theoretical models for FC/ZFC processes for nanoparticles of g-Fe_2O_3, modelling of AC transversal susceptibility for recording media.

He has expertise in thin films deposition, MBE, PVD, CVD, nanostructurations, UV lithography, e-beam, ionic and reactive etching, characterization techniques: Xray diffraction, SQID, VSM, AGFM, MOKE magnetometry, torsions magnetometry, Auger spectrometry, SEM, AFM, elipsometry, prophilometry.

Dr. Ciprian Iliescu, Inst of Bioengineering and Nanotechnology, Floravale, Blk. 226, Westwood Ave, #08-17, Singapore 648357, +65-68247137 E-mail: ciliescu@ibn.a-star.edu.sg;
received the M.Sc. degree at "Politechnica" University, Bucharest, Romania, in 1989, and the Ph.D in mechanical engineering from the same university in 1999. Intre 2001 and 2003 he was lecturer at Nanyang Technological Univ., Singapore and from2003 he is researcher at the Institute of Bioengineering and Nanotechnology, Medical Devices Group, Singapore. He is specialized in wet etching processes, PECVD for amphoros silicon, silicon and glass, bonding processes. MEMS and BioMEMS packaging. He is expert in microneedles array with biodegradable tips for transdermal drug delivery, fabrication method of low stress PECVD SiN_x layers for biomedical application, and bidirectional field flow particle separation method in a dielectrophoretic chip with 3D electrodes

Dr. Alexandru Muller, National Institute for R&D in Microtechnologies (IMT-Bucharest), Erou Iancu Nicolae 32 B, tel 021 4908581, e-mail: Alexandru.muller@imt.ro received his PhD in Semiconductor Physics from the University of Bucharest, Romania, in 1990. He is currently senior researcher and head of RF MEMS Laboratory \from the National R&D Institute in Microtechnologies (IMT Bucharest), Bucharest. He is President of the scientific council of IMT Bucharest. His main expertise is in MEMS for applications in microwave devices - design and manufacturing of membrane supported millimeter wave filters, antennae and receiver modules based on silicon as well as on GaAs micromachining, acoustic devices on Wide band Gap (WGB) materials, GaN, AlN.
He was coordinator of the FP4 European Project INCO Copernicus Project 'MICROMACHINED CIRCUITS FOR MICROWAVE AND MILLIMETER WAVE APPLICATIONS – MEMSWAVE" (1998-2001). The project was nominated between the first 10 European research projects at the 2002 call for the DESCARTES Prize. From 2004 he was the leader of IMT-Bucharest team in the "AMICOM" FP6 European Project NoE in RF MEMS (2004-2007) coordinated by LAAS Toulouse; member in the Board of Directors of AMICOM.
Dr Muller is the coordinator of the FP7 European Project (FP7-REGPOT-2007-1) "European Centre of Excellence in Microwave, Millimeter Wave and Optical Devices, based on Micro-Electro- Mechanical Systems for Advanced Communication Systems and Sensors – MIMOMEMS" (2008-2010) FP7 Capacities and is involved in the research team of IMT Bucharest in the winning FP7 STREP "MEMS 4 MMIC" call ICT 2 (2008-2011)
Dr A. Muller is member of the Steering Committee of the Annual "Micromechanics Europe"(MME) Workshop from 2002. He is reviewer at some IoP journals and at Sensors and Actuators. He is member of the Technical Program Committee and Paper Review Board of the International Semiconductor Conference (CAS- IEEE event). In 2003 he was Invited "Directeur de Recherche" at LAAS-CNRS Toulouse". He is author of more than 100 papers published in ISI journals and Conference Proceedings. He is referent for projects under PNCDI I, CEEX and PNCDI II. He received "Tudor Tanasescu" Academy prize in 2003.

Prof. Bogdan Simionescu, correspondent member of the Romanian Academy si general manager of the Institute for macromolecular Chemistry "Petru Poni", 700487 Iasi, Romania Tel.: (40)-232-217454; (40)-744-507077 Fax: (40)-232-211299 E-mail: bcsimion@icmpp.ro .
He is professor of polymer science at the natural and Synthetic Polymers Chair at the technical University "Gh. Asachi" Iasi. He is specialized in radical polymerization and co-polymerisation, Plasma induces polymerization, radical neconventional polymerization, combined technics for the synthesis of macromolecular compounds, polymers with ultra-high molecular mass, solutions for macromolecular components ; polisiloxani; poli(N-acil iminoetylen) block copolymers, macromolecular arhitectures, self-assembly phenomena. He is referent for CNCSIS grants, projects under PNCDI I, CEEX and PNCDI II.

Prof. Simionescu is member of the editorial board at "Revue Roumaine de Chimie", "Carbohydrate Polymers"“Materiale Plastice” “Fungi and Mycotoxins”, “Environmental Engineering and Management Journal”. He is author of over 220 ISI papers. He received the Romanian Academy Prize for Chemistry in 1985.

Dr Oana Dragos, Institutul Naţional de Cercetare- Dezvoltare pentru Fizică Tehnică – IFT Iaşi, 47 Mangeron Blvd., P.O. Box 833, has expertize in wires, and plate amorphous materials, nanomaterials research, nanostructured and nanocomposite materials, study of magnetic, electric, structural of amorphous materials.

Dr. Cristian Kusko, researcher at National Institute for R&D in Microtechnologies (IMT-Bucharest), Erou Iancu Nicolae 32 B, tel 021 4908212, e-mail: cristian.kusko@imt.ro received the M.Sc. degree in physics from the University of Bucharest, Romania, in 1991, and the Ph.D. in physics at Northeastern University, Boston, USA in 2003. In 203 he was as postdoctoral researcher at the Physics Dept, Northeastern University, Boston where he investigated the interaction of photons with reduced dimensional systems in photoemission processes. He is specialists in the theory of condensed matter – structure and electronic properties of the strong correlated fermions. His activity was mainly theoretical: physics many-body methods in the dynamics of electronics, magnetic and superconductive states in the strong correlated electrons systems and their impact on different types of spectroscopy. He published 11 papers in the condensed matter physics domain (Phys. Rev. Lett., Phys. Rev. B, J. Appl. Phys, Appl. Phys. Lett., Rev. Sci. Inst). From 2004 he is researcher in IMT Bucharest, Micro and Nanophotonics lab. He works in modeling and simulations of photonics circuits based on circular resonators, investigation of electromagnetic radiation with nanostructured systems focalized on metamaterials with negative refraction in THz and IR range. He is referent at Physical Review Letters si Physical Review B. He received the “Serban Titeica” Prize at the National Teoretical Physics Conference, 2004.

Dr Magdalena Ciurea, senior researcher I at INCD Fizica Materialelor, ciurea@infim.ro , had obtain the PhD in physiscs, in 1981 and has expertise in nanoclistaline structures and materials based on silicon, electrical phenomena in nanoclistaline structures, transport phenomena, photoelectric phenomena in nanocristaline structures, capture levels, photoluminiscent properties of nanocristaline structures. She is member of European Physics Society, of the Romanian Physics Society, NEXUS. She is Director at Subprogram 9 in MATNANTECH Programme. She received the “Constantin Miculescu” Prize of the Romanian Academy in 1998. She isrefferent at Physica Status Solidi, Romanian Journal of Physics, Electron Device Letters, Solid State Electronics, Journal of Applied Physics, Journal of Optoelectronics and Advanced Materials

5 Participants list

Participants list, except the invited speakers

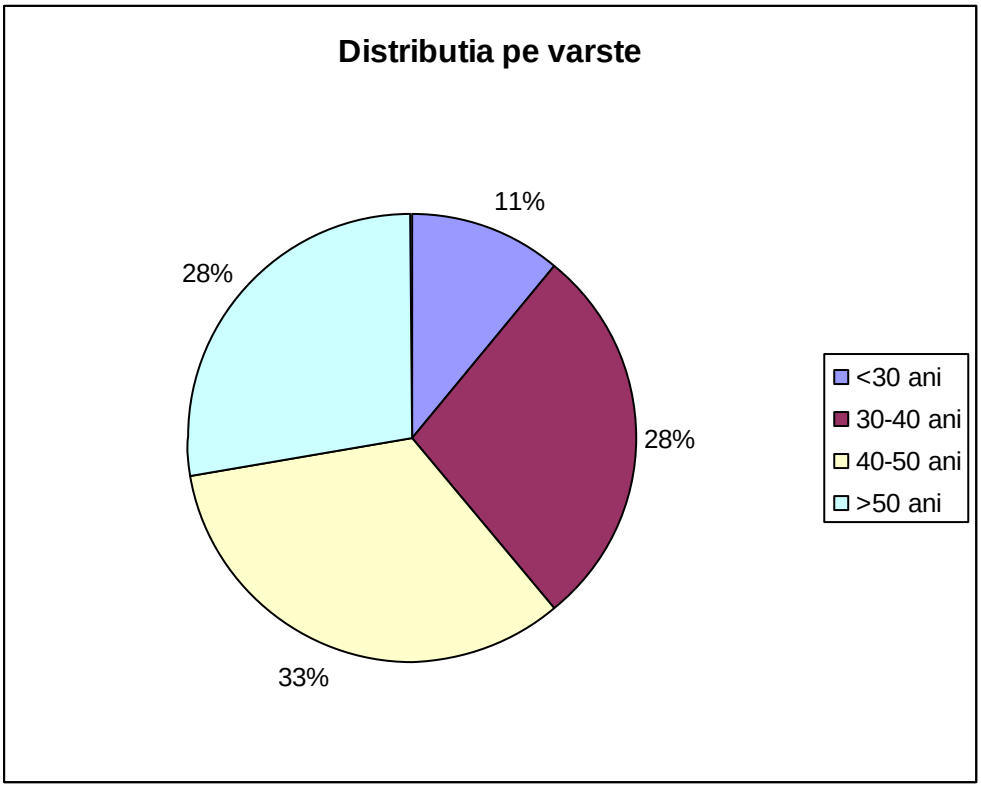
Nr	Title	Name	First name	Country	Organization	Address	Tel Fax	e-mail
11.	Dr	Anton	Cornel	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Cornel.anton@imt.ro
12.	Prof	Bacivarov	Ioan	Romania	EUROQUALROM, UPB		0766345575	bacivaro@euroqual.pub.ro
13.	Dr	Beca	Paul	Romania	INCD Mecanica Fina		0722717551	
14.	Dr	BORBATH	ISTVAN	Romania	S.C. ROSEAL S.A		0266 215998 0266 215912	office@roseal.topnet.ro
15.		Buiculescu	Cristina	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Cristina.buiculescu@imt.ro
16.	Dr	Ciobanu	Constantin	Romania	P Poni Iasi		0723533391 0232211299	constantinsciobanu@yahoo.com
17.	Dr	Cismaru	Alina	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Alina.cismaru@imt.ro
18.		Comanescu	Florin	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Florin.comanescu@imt.ro
19.		Craciunoui	Florin	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Florin.craciunoiu@imt.ro
20.	Dr	Cristea	Dana	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 0214908238	Dana.cristea@imt.ro
21.	Acad	Dascalu	Dan	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Dan.dascalu@imt.ro
22.		Danila	Mihai	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Mihai.danila@imt.ro
23.		Eftime	Laura	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Laura.eftime@imt.ro
24.		Fartat	Bogdan	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Bogdan.fartat@imt.ro
25.	Dr	GHENGHEA	LAURENTIU DAN	Romania	UNIVERSITATEA TEHNICA DIN IASI	, B-dul D. Mangeron nr. 59, 700050, Iasi	0744991807 0232217290	lghenghe@tcm.tuiasi.ro
26.	Dr	GHEORGHE	Gh. Ion	Romania	INCD Mecanica Fina		0722717558	
27.		Iancu	Daniela	Romania	S.C. ROSEAL S.A		0266 215998 0266 215912	office@roseal.topnet.ro
28.	Dr	Kleps	Irina	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Irina.kleps@imt.ro
29.	Dr	Miu	Mihaela	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax	Mihaela.miu@imt.ro

							0214908238	
30.		Mocanu	Gabriela	Romania	Inst Metrologie		0724321807	germocanu@yahoo.com
31.	Dr	Muller	Raluca	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Raluca.muller@imt.ro
32.		Munteanu	Iulian Sorin	Romania	INCD Mecanica Fina			Munteanu75@gmail.com
33.	Dr	Obreja	Paula	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Paula.obreja@imt.ro
34.		Petrini	Ioana	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Ioana.petrini@imt.ro
35.	Dr	Popa	Radu	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Radu.popa@imt.ro
36.	Dr	Plugaru	Rodica	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Rodica.plugaru@imt.ro
37.		Staicu	Liana	Romania	INCD Microtehnologie	32 B Erou Iancu Nicolae, 077190	0214908212 Fax 0214908238	Liana.staicu@imt.ro

6. Statistical dates

5 invited speakers from Diaspora from 5 countries and 3 continents (Europe, Asia and America) and 5 from Romania participated. The invited speakers from Diaspora are from Norway, Ireland, France, USA and Singapore.

Age distribution, invited speakers and participants, is presented below:



7. Other materials

Acad Dan Dascalu, opening the workshop

Acad Dan Dascalu – opening speach

Dr Andreas Wild, Freescale Semiconductor

Dr Daniel Lapadatu, Infineon Technologies SensoNor, Norway,

Dr Cristian Kusko, IMT Bucharest

Dr Cristian Papusoi, SPINTEC, CEA/CNRS, Grenoble,

Dr Ciprian Iliescu, Institute of Bioengineering and Nanotechnology, Singapore

Dr Alexandru Muller, IMT Bucharest

Dr Mircea Modreanu, Tyndall Institute, Cork, Irlanda

Dr Magdalena Ciurea, INCD Material Physics si Dr Alexandru Muller,

Project Manager,

Acad. Dan Dascalu