

Biographical Note of A.G.Nasiopoulou, Director of Research at IMEL/NCSR Demokritos

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- Education:
- BSc in Physics, University of Athens 1975
(Performance: 1972 entrance examination grade 2nd among all Cypriots, scholarship for all 4 years of the University)
 - MSc (DEA) in “Electronic Materials and Structures”, Scholarship from the “Leventis” foundation, University of Paris XI, Orsay, France 1977
 - PhD, University of Paris XI, Orsay, France 1980
 - Doctorat d’ Etat Es Sciences Physiques, University of Reims, France, 1985

Professional Experience

- 1997-july 2009
- Director of the Institute of Microelectronics at NCSR “Demokritos”
(Elected by International Scientific Committee in 1997 for a mandate of 5 years, re-elected for a second mandate in 2001)
 - Member of the Board of Management of NCSR Demokritos (1997-2009)
 - Vice-President of NCSR Demokritos in 2001-2002
 - President of the Board of Research of NCSR Demokritos in 2000-2001
 - Member of the Committee of the Technology Park of NCSR Demokritos in 2001-2003, Contribution to the elaboration of the statute of legislations of NCSR Demokritos for IP and commercialization of research products
 - Member of the National Council for Research and Technology (ESET) (2001-2002)
 - Member of the Scientific Advisory Group of NMP-FP6 (Research Priority: “Nanotechnology, Materials and Production Processes”, 6th Framework Programme for Research and Technology in Europe) (2003-2005)
 - Member of the Scientific Community Council of AENEAS-ENIAC (European Technology Platform for Nanoelectronics) (2007-today)
 - Founder and currently President of the Board of the Scientific Society “Micro&Nano” (established in 2004 as a National Scientific Society, counting today as members five organizations and more than 100 scientists)
 - Head of a Research activity on Nanostructures for Nanoelectronics, Photonics and Sensors”
- 1988-1997
- Senior Researcher at IMEL/NCSR Demokritos (1988-97)
 - Head of the research activity on “Semiconductor nanostructures science and applications” (1988-97)
 - Head of the Educational Activities of IMEL (1988-96)
- 1986-88
- Senior Researcher at IMS/NCSR Demokritos (1986-88)
- 1980-86
- Associate Professor at the University of Reims-France, member of the research group on “Surface Spectroscopies and Microscopies”, teaching in the field of electronics and electron devices (1980-86)
- 1977-80
- Research associate (CNRS), University of Paris XI (1977-80)

Research experience

- Nanostructures /Nanoelectronic devices
Silicon quantum wires and dots, Si/SiO₂ superlattices (free standing silicon nanowires, quantum wires in dielectric), optical and transport properties, light emitting devices, silicon nanocrystal non-volatile memories, self-assembly, ordering of nanostructures, alumina templates on silicon for nanostructuring, nanoparticles in solution
- Porous Si
Mesoporous, macroporous, microporous, porous membranes ever cavity, applications in electronics (on-chip RF integration porous Si microplates for local RF substrate isolation), sensors (thermal sensors, microfluidics) and photonics (2-D photonic crystals)
- Microhotplate technology for thermal sensors
- Porous anodic alumina thin films on Si
Material development, applications as masking material and as template for nanostructure growth on Si, photonic crystal applications
- Silicon Sensors and Microsystems (MEMs)
Gas flow sensors, gas sensors, acceleration sensors, silicon integrated thermopiles, silicon micromachining, porous silicon technology for MEMS fabrication
- Electron Microscopy and Surface Spectroscopies (Auger, XPS, EELS, SEELS, X-ray Microanalysis, Scanning Electron Microscopy)

Teaching experience

1980-86	Full teaching programme in Electronics and Electron Devices at the University of Reims, France.
1986-88	<ul style="list-style-type: none">• Solid State Physics course for PhD students of IMEL/NCSR “Demokritos”• Spectroscopic, structural and electrical materials characterization course for PhD students of IMEL/NCSR “Demokritos”
1988-92	Semiconductor Physics course for Phd students of IMEL/NCSR “Demokritos”
1988-97	Electron spectroscopies and microscopies course for PhD students of IMEL/NCSR “Demokritos”
1997-today	Introduction to CMOS devices and technology – Course for MSc students of a) MSc programme on Microelectronics (University of Athens), b) MSc programme on Nanosciences and Nanotechnologies (University of Thessaloniki), c) MSc programme on Nanoelectronics, Devices and Microsystems (National Technical University of Athens)

Supervisor of the following PhD students

1. “Macroporous Si as a dielectric for local electrical isolation of Si and as a template for electrical interconnections through the wafer”, PhD thesis of F. Zacharatos. Thesis defended at the National technical university of Athens, School of Applied Mathematical and Physical Science (2009)
2. “Self - assembled porous anodic Al₂O₃ films on Si substrate and applications”, PhD thesis of V. Gianneta, PhD thesis. Thesis defended at the University of Patras (2009)
3. “Porous anodic alumina thin films on Si: Fabrication, properties, applications”, PhD thesis of M. Kokonou. Thesis defended at the National Technical Univeristy of Athens (2008)
4. "Growth and electrical characterization of Au nanowires between electrodes", PhD thesis of Argyro Zoy, Examination: National Technical University of Athens, 7-9-2007

5. "Nanocrystalline silicon for application in non-volatile memories", PhD thesis of A. Salonidou, University of Athens 17/4/2006
6. "Arrays of semiconductor nanocrystals ordered in 2-D layers within SiO₂ for application in memory devices", PhD thesis of A. Olzierski, University of Athens 6/10/2006
7. "Local thermal isolation technology in Si and application in thermal flow sensor", PhD thesis of D. Pagonis, National & Kapodistrian University of Athens, 2004
8. "Fabrication and luminescence on nanocrystalline Si/SiO₂ superstructures", PhD thesis of P. Photopoulos, National Technical University of Athens, 2003
9. "Si nanocrystalites in Si/CaF₂ multilayer films", PhD thesis of V. Tsakiri, National Technical University of Athens, 2002
10. "Vapor and vapor flow integrated sensors using porous silicon technology", PhD thesis of G.P. Kaltsas, National & Kapodistrian University of Athens, 1998
11. "Silicon nanostructures for optoelectronic applications", PhD thesis of S. Grigoropoulos, National Technical University of Athens, 1997
12. "X-ray microanalysis and microscopy of thin films", PhD thesis of E. Valamontes, University of Athens, 1992

Member of the examination committee of the following PhD theses:

1. F. Zacharatos. National technical university of Athens, School of Applied Mathematical and Physical Science, 2009
2. V. Gianneta. University of Patras, 2009
3. A. Petropoulos. National Technical University of Athens, 2009
4. A. Tsormpatzoglou, Aristotle University of Thessaloniki, Department of Physics, 2009
5. M. Kokonou. National Technical University of Athens, 2008
6. Argyro Zoy. National Technical University of Athens, 7-9-2007
7. A. Salonidou. University of Athens 17/4/2006
8. A. Olzierski. University of Athens 6/10/2006
9. M. Guendouz, Université de Rennes, France 2005
10. D. Pagonis. National & Kapodistrian University of Athens, 2004
11. D. Alquier. Université François Rabelais - Tours, France, 2004
12. P. Photopoulos, National Technical University of Athens, 2003
13. V. Tsakiri, National Technical University of Athens, 2002
14. Ph. Ferrandis. L'Institut national des Sciences Appliquées de Lyon, 2002
15. M. Nestoros, University of Cyprus, Department of Physics, 1999
16. S. Menard, Université Joseph Fourier France, 1999

Other educational activities

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| 1993-97 | Chairperson of the annual Summer School on Microelectronics every year in the period 93-97. Number of students attending every year: 70-80 |
| 1995-96 | Organization of training courses on Microelectronics for technicians from industry |
| 1998-00 | Contribution to the elaboration of the Master program on Microelectronics, initiated in 1998 at the University of Athens, currently running |

Creation and Coordination of MMN National Scientific Network

Created (1998) and coordinated (1998-2005) the National Scientific Network MMN on Microelectronics, Microsystems and Nanotechnology

Founder of "Micro & Nano" Scientific Society

Founded (2004) the Scientific Society "Micro & Nano", President of the Board (2004-today)

Organization of Conferences

- 6th International conference on Porous Semiconductor Science and Technology (PSST 2008). Conference Chairperson: A. G. Nassiopoulou. The conference was held in Mallorca, Spain in March 2008. Edition of Conference Proceedings Special Issue of *Physica Status Solidi*. Edited by: A. G. Nassiopoulou, L. T. Canham, M. Sailor and P. Schmuki, Wiley-VCH (2009)
 - 3rd International Conference on Micro-Nanoelectronics, Nanotechnology and MEMS (Micro&Nano2007). Conference Chairperson: A. G. Nassiopoulou. The conference was held in Athens, Greece in November 2007. Edition of Conference Proceedings Special Issue of *Physica Status Solidi*. Edited by A. G. Nassiopoulou, P. Argitis, N. Papanikolaou, Wiley-VCH (2008)
 - E-MRS 2006, Symposium C: Silicon Nanocrystals for Electronics and Sensing Applications, Symposia Proceedings 192 of the European Materials Research Society, Conference Chairperson: A. G. Nassiopoulou, L. Lechuga, Ph. Fauchet, Edition of Conference Proceedings Special volume of *Physica E*, Edited by: Dr A. G. Nassiopoulou (2007)
 - 5th International conference on Porous Semiconductor Science and Technology (PSST 2006). The conference was held in Sitges, Barcelona, Spain in March 2006. Edition of Conference Proceedings Special Issue of *Physica Status Solidi*. Edited by: V. Parkhutić, A. G. Nassiopoulou, Michael Sailor and L. Canham Wiley-VCH (2007)
 - 2nd International Conference on Microelectronics, Microsystems and Nanotechnology (MMN 2004). Special Issue of *Intitute of Physics*. The conference was held in Athens, Greece in November 2004. Edition of Conference Proceedings Special Issue of *Physica Status Solidi*. Edited by A. G. Nassiopoulou, N. Papanikolaou, C. Tsamis (2005)
 - 4th International conference PSST 2004 on Porous Semiconductor Science and Technology, held in Cullera-Valencia, 14-19 March 2004, Edition of Conference Proceedings Special Issue of *Physica Status Solidi*, Guest editors: L. Canham, A. G. Nassiopoulou, and V. Parkhutić, Wiley-VCH, (2005)
 - E-MRS 2002 Symposium S on Micro- and Nano-structured Semiconductors, Edition of Conference Proceedings Special Issue of *Materials Science & Engineering B*, edited by I. Berbezier, A. G. Nassiopoulou and S. Nozaki, Elsevier (2003)
 - 3rd International, Conference on Porous Semiconductors Science and Technology, held in Tenerife-Spain 10-15 March 2002, Edition of Conference Proceedings Special issue of *Physica Status Solidi*, Guest Editors: L. Canham, A. Nassiopoulou and V. Parkhutić, Wiley-VCH, (2003)
 - First Conference on Microelectronics, Microsystems and Nanotechnology MMN 2000, held in Athens, Greece in November 2000, edited by A. G. Nassiopoulou and X. Zianni, World Scientific, (2000)
 - Symposium I: “Microcrystalline and Nanocrystalline Semiconductors” held within E-MRS, June 1-4 1999 Strasbourg, France, Elsevier, 2000, Edition of Conference Proceedings Special Issue of *Materials Science & Engineering B Solid State Materials for Advanced Technology*, Guest Editors: M. Thönissen and A. G. Nassiopoulou
 - “Second International Workshop on Light Emitting Low Dimensional Silicon Structures”, Edition of Conference Proceedings Special Issue of *Physica Status Solidi*, vol. 165, Number 1 (1998), Quest Editors: A. G. Nassiopoulou and Ph. Fauchet
 - “First International Workshop on Light Emitting Low Dimensional Silicon Structures”, Edition of Conference Proceedings Special Issue of *Physica Status Solidi* (b), vol 190, Number 1 (1994), Editors: F. Arnaud d’ Avitaya and A. G. Nassiopoulos
- Chairperson of the following Conferences and Symposia:
 - Symposium on: “Microcrystalline and Nanocrystalline Semiconductors” within E-MRS 1999, Strasbourg, May 1999
 - 3rd Annual Workshop MEL-ARI OPTO (Advanced Research Initiative in Microelectronics. Optoelectronic Interconnects for Integrated Circuits), Athens, October 14-15, 1999.
 - 1st-International Workshop on Light Emitting Low Dimensional Silicon Structures, Lagonissi Attikis, 1994 (co-editor of Conference Proceedings)
 - 2nd -International Workshop on Light Emitting Low Dimensional Silicon Structures, Lagonissi Attikis, 1997 (co-editor of Conference Proceedings)
 - Symposium on “Nanoscale Materials for technologies of 2000”, NCSR “Demokritos, 1997
 - Symposium on “Microelectronics in Greece: Possibilities for Industrial Exploitation”, NCSR “Demokritos”, October 1998
 - MMN 2000 Conference: First International Conference on Microelectronics, Microsystems and Nanotechnology, Athens, November 2000 (co-editor of Conference Proceedings)
 - MMN 2004 Conference: Second International Conference on Microelectronics, Microsystems and Nanotechnology, Athens, November 2004 (co-editor of Conference Proceedings)

- 3rd International Conference on Porous Semiconductors Science and Technology, held in Tenerife-Spain 10-15 March 2002 (co-chairperson) (co-editor of Conference Proceedings)
- E-MRS2002 Symposium S on Micro- and Nano-structured Semiconductors, Strasbourg May 2002 (co-chairperson) (co-editor of Conference Proceedings)
- 4th International conference of PSST on Porous Semiconductor Science and Technology, held in Cullera-Valencia, 14-19 March 2004 (co-chairperson) (co-editor of Conference Proceedings)
- Member of the International Scientific Committees of Several Conferences. Indicatively:
 - International Conference “Nanomeeting 99”, Minsk, Belarus, 17-21 May 1999
 - International Conference OPTDIM-99, Kiev, 7-9 October 1999
 - International Conference on Porous Semiconductors Science and Technology, Mallorca, Spain 16-20 March 1998.
 - 2nd International Conference on Porous Semiconductors Science and Technology, Madrid, Spain, 12-17 March 2000
 - 3rd European Workshop on Microelectronic Education, Aix-en-Provence, France, May 18-19, 2000
 - Member of the programme Committee, XVI National Conference on Solid State Physics, Nafplio, 17-20 September 2000
- Member of the organizing Committee of the:
 - International Conference on Micro-and Nanoengineering 97, Athens, September 15-18, 1998
 - 2nd European Workshop on Microelectronic Education, The Netherlands, 14-15 May 1998
 - International Symposium on Si Heterostructures: From Physics to Devices, Crete, Greece, 1995
- Conference Session Chair
 - EMRS 98, Symposium on “Light emission from silicon: Progress towards Si-based Optoelectronics, Strasbourg 16-99 June 1998.
 - 188th Electrochemical Society Fall Meeting, Chicago, October 1995
 - 1st International Conference on Porous Semiconductors Science and Technology, Mallorca, Spain 1998
 - 2nd International Conference on Porous Semiconductors Science and Technology, Madrid, Spain 2000
 - International Conference OPTDIM-99, Kiev 1999
 - International Conference “Nanomeeting 99, Minsk, 1999
 - Symposium on Microcrystalline and Nanocrystalline Semiconductors within E-MRS’99
 - NATO/EC Advanced Research Workshop on “Frontiers of Nano-Optoelectronic Systems: Molecular Scale Engineering and Processes, Kiev, May 2000.
 - Different National Conferences on Solid State Physics
 - National Conference on “Technologies of the Archipelagos”, TEI of Athens, October 1997 (also member of the Scientific Committee)
 - Symposium on the achievements of NCSR Demokritos, within the exhibition on “Research & Technology- EPET II”, Zappio, 19 May 2000.

Edition of Book and Conference Proceedings

1. Special issue on "Nanotechnology in Greece", published in the International Journal of Nanotechnology, vol. 6 (Nos 1/9) 2009, Editors: A. G. Nassiopoulou, C. Fotakis
2. Edition of the Proceedings of the 6th International conference on Porous Semiconductor Science and Technology (PSST 2008). Special Issue of Physica Status Solidi. The conference was held in Mallorca, Spain in March 2008. Edited by: A. G. Nasiopoulou, L. T. Canham, M. Sailor and P. Schmuki, Wiley-VCH (2009)
3. Edition of the Proceedings of the 3rd International Conference on Micro-Nanoelectronics, Nanotechnology and MEMS (Micro&Nano2007). Special Issue of Physica Status Solidi. The conference was held in Athens, Greece in November 2007. Edited by A. G. Nassiopoulou, P. Argitis, N. Papanikolaou, Wiley-VCH (2008)
4. Edition of the Proceedings of E-MRS 2006, Symposium C: Silicon Nanocrystals for Electronics and Sensing Applications, Symposia Proceedings 192 of the European Materials Research Society, Special volume of Physica E, Editor: Dr A. G. Nassiopoulou (2007)
5. Edition of the Proceedings of the 5th International conference on Porous Semiconductor Science and Technology (PSST 2006). Special Issue of Physica Status Solidi. The conference was held in Sitges, Barcelona, Spain in March 2006. Edited by: V. Partkhtic, A. G. Nasiopoulou, Michael Sailor and L. Canham Wiley-VCH (2007)

6. Edition of the Proceedings of the 2nd International Conference on Microelectronics, Microsystems and Nanotechnology (MMN 2004). Special Issue of Intitute of Physics. The conference was held in Athens, Greece in November 2004. Edited by A. G. Nassiopoulou, N. Papanikolaou, C. Tsamis (2005)
7. Edition of the Proceedings of the 4th International conference PSST 2004 on Porous Semiconductor Science and Technology, held in Cullera-Valencia, 14-19 March 2004, Special Issue of Physica Status Solidi, Guest editors: L. Canham, A. G. Nasiopoulou, and V. Partkhutic, Wiley-VCH, (2005)
8. Edition of the Proceedings of E-MRS 2002 Symposium S on Micro- and Nano-structured Semiconductors, special issue of Materials Science & Engineering B, edited by I. Berbezier, A. G. Nassiopoulou and S. Nozaki, Elsevier (2003)
9. Edition of the Proceedings of the 3rd International, Conference on Porous Semiconductors Science and Technology, held in Tenerife-Spain 10-15 March 2002 Special issue of Physica Status Solidi Guest Editors: L. Canham, A. Nassiopoulou and V. Parkhutik, Wiley-VCH, (2003)
10. Edition of the Proceedings of the First Conference on Microelectronics, Microsystems and Nanotechnology MMN 2000, held in Athens, Greece in November 2000, edited by A. G. Nassiopoulou and X. Zianni, World Scientific, (2000)
11. Edition of the Proceedings of Symposium I: "Microcrystalline and Nanocrystalline Semiconductors" held within E-MRS, June 1-4 1999 Strasbourg, France, Special Issue of Materials Science & Engineering B Solid State Materials for Advanced Technology, Elsevier, 2000, Guest Editors: M. Thönissen and A. G. Nassiopoulou
12. Edition of the "Proceedings of the II International Workshop on Light Emitting Low Dimensional Silicon Structures", Special Issue of Physica Status Solidi, vol. 165, Number 1 (1998), Quest Editors: A. G. Nassiopoulou and Ph. Fauchet
13. Edition of the "Proceedings of the I International Workshop on Light Emitting Low Dimensional Silicon Structures", Special Issue of Physica Status Solidi (b), vol 190, Number 1 (1994), Editors: F. Arnaud d' Avitaya and A. G. Nassiopoulos