

N. T. PELEKANOS

Materials Science & Technology Department, University of Crete
Microelectronics Research Group
Institute of Electronic Structure and Laser/FORTH
P.O. Box 1385, 71110 Heraklion, Greece
Phone: 30-2810-394107, Fax: 30-2810-394106
email: pelekano@materials.uoc.gr

CAREER OBJECTIVE:

Research & development in the fields of semiconductor optoelectronics and nanophotonics.

EDUCATION:

Ph.D. in Physics, Brown University, Providence (RI), USA, July 1991
Title of dissertation: "Exciton-phonon interaction effects in II-VI semiconductor heterostructures".
Scientific advisor: Professor A. V. Nurmikko
M.Sc. in Physics, Brown University, Providence (RI), USA, May 1987
B.Sc. in Physics, University of Athens, Athens, Greece, July 1985

PROFESSIONAL EXPERIENCE:

- 2009-present: Full Professor**, Materials Science & Technology Department, University of Crete, Heraklion, Greece, in the field of Semiconductor Nanotechnology with emphasis on Optoelectronics.
- 2003-2009: Associate Professor**, Materials Science & Technology Department, University of Crete, Heraklion, Greece, in the field of Semiconductor Nanotechnology.
- 2001-2003: Senior Researcher**, Foundation of Research and Technology-Hellas, Microelectronics Research Group, Heraklion, Greece, involved with the demonstration of novel optoelectronic devices and the study of semiconductor quantum dots.
- 1994-2001: Research Engineer** (permanent position), Commissariat à l'Energie Atomique, Laboratory of Semiconductor Physics, Grenoble, France, involved with optical characterization of semiconductor nanostructures and demonstration of novel optoelectronic devices.
- 1993-1994: Postdoctoral Researcher**, Max-Planck-Institute, Ultrafast Spectroscopy Group, Stuttgart, Germany, demonstrating an all-optical quantum well-based spatial light modulator for parallel image processing and carrying out ultrafast spectroscopy on II-VI heterostructures.
- 1992-1993: Research Engineer**, France-Telecom, Centre National d'Etudes des Télécommunications, Optical Interconnection Group, Lannion, France, designing photorefractive quantum well systems for optical switching in telecommunications.
- 1991-1992: Postdoctoral Researcher**, Commissariat à l'Energie Atomique, Laboratory of Semiconductor Physics, Grenoble, France, studying the optical properties of CdTe-based heterostructures.

RESEARCH INTERESTS:

- a) Quantum dot-based high temperature single-photon emitters and sources of entangled photons.
- b) Polariton lasing and condensates at room temperature.
- c) Next generation solar cells based on semiconductor nanowires.
- d) 2D materials for optoelectronic applications.

ACHIEVEMENTS:

RESEARCH

- A total of 234 publications, including:
 - 7 patents
 - 53 publications in peer-reviewed journals
 - 62 conference papers in peer-reviewed journals
 - 2 papers in special issues
 - 1 book chapter
 - 109 papers in conference proceedings.
- About 2700 citations and a corresponding H-factor of 26.
- 18 invited talks in conferences/workshops and 14 invited talks in academic institutions.
- Coordination/participation in 6 European, 18 national, 1 industrial, and 4 bilateral research contracts, whose total estimated budget for the home institutions is approximately 3.8 million Euros.
- Supervised 5 post-doctoral fellows, 8 PhD and 8 MSc theses. Currently supervising 2 PhD candidates and 2 MSc students.
- Evaluation expert for European and national research programs (Greece, France, Israel).
- Referee in prestigious academic journals (PRL, PRB, PRApl, APL, JAP).
- Co-organized 9 conferences/workshops.
- Participated in numerous electoral committees for professor/researcher positions.

ADMINISTRATIVE WORK

At the Department level:

- Chairman, 2007-2009.
- Vice-Chairman, 2004-2007.
- Director of undergraduate studies, 2004-2010.
- Evaluation Committee, 2012-2016.

At the University level:

- Committee of Research, 2012-2014.
- Responsible for the Final Reception Protocol of the new University buildings in Voutes, 2014.
- Member of New Technologies Committee, 2016-.
- Director of Technical Council, 2017-.

At the Region level:

- Member of the Regional Research and Innovation Council of Crete, 2017-.

AWARDS

- Chaire d'Excellence LANEF, funded by the French government, for a project entitled "*Nanowire Innovative Solar Cells*", 2014-2017.
- Solar Innovation 2010 Award, by the French Atomic Energy Commission for a proposal on "*III-V Nanowires for Next Generation Photovoltaics*", 2011-2013.
- Alexander von Humboldt-Stiftung fellowship, 1993-1994.
- Bourse du Ministère des Affaires Etrangères, 1991-1992.

DETAILED RECORD:

PATENTS:

7. Growth of nitride semiconductor heterostructures including Indium Aluminium Gallium Nitride alloy layers by Molecular Beam Epitaxy with RF-plasma source,

A. Georgakilas, N. Pelekanos, E. Dimakis, FORTH, Application for Greek Patent, Ref. N. 20020100376 (9-8-2002).

6. Optical semiconductor device with resonant cavity tunable in wavelength, application to modulation of light intensity,

V. Ortiz, N. T. Pelekanos, CEA/Grenoble, French Patent application Nr. 99 08783, filed July 7, 1999. Extended to the USA in June 2000, where it was granted as US 6,396,083 B1 (DoP: May 28, 2002).

5. Semiconductor laser with tunable gain spectrum,

N. T. Pelekanos, V. Ortiz, G. Mula, CEA/Grenoble, French Patent application Nr. 98 12558, filed Oct. 7, 1998. Extended to USA in 1999, where it was granted as US 6,353,624 B1 (DoP: March 5, 2002).

4. An educational crossword game,

J. Jorge Pelekanos, N. T. Pelekanos, U.S. Patent application, filed January 1996.

3. Optically-controlled light modulator device,

N. T. Pelekanos, European Patent Application #94107158.1, filed in 1994. Extended to USA in 1995, where it was granted as US 5,698,863 (DoP: Dec.16, 1997).

2. Ultrafast photorefractive cell operating at 1.55 μm ,

B. Deveaud, N. T. Pelekanos, B. Lambert, France Telecom, French Patent Nr. 9313718, filed in 1993, extended in USA in 1994.

1. All-optical photodiffractive device based on GaAs/AlAs quantum filters,

N. T. Pelekanos, B. Deveaud, P. Gravey, J. M. Gérard, France Telecom, French Patent Nr. 9314789, filed in 1993, extended in USA in 1994.

PAPERS in PEER-REVIEWED JOURNALS:

(The numbers in parenthesis next to each publication correspond to the total citations taken on June 2017 from ISI-Web of Science [v.5.24])

53. Ultra-low threshold polariton lasing at room temperature in a GaN membrane microcavity with a zero-dimensional trap,

R. Jayaprakash, F. G. Kalaitzakis, G. Christmann, K. Tsagaraki, M. Hocevar, B. Gayral, E. Monroy, N. T. Pelekanos, Scientific Reports **7**, 5542 (2017), DOI:10.1038/s41598-017-06125-y.

52. Highly Uniform Zinc Blende GaAs Nanowires on Si(111) Using a Controlled Chemical Oxide Template,
S. L. Tan, Y. Genuist, E. Bellet-Amalric, M. den Hertog, H. Mariette, N. T. Pelekanos, Nanotechnology **28**, 255602 (2017).

51. Room temperature observation of biexcitons in exfoliated WS₂ monolayers,

I. Paradisanos, S. Germanis, N. T. Pelekanos, C. Fotakis, E. Kymakis, G. Kioseoglou, E. Stratakis, Applied Physics Letters **110**, 193102 (2017).

50. Enhanced Stark tuning of single InAs (211)B quantum dots due to nonlinear piezoelectric effect in zinc-blende nanostructures,

S. Germanis, C. Katsidis, S. Tsintzos, A. Stavriniadis, G. Konstantinidis, N. Florini, J. Kioseoglou, G. P. Dimitrakopoulos, Th. Kehagias, Z. Hatzopoulos, N.T. Pelekanos, Phys. Rev. Applied **6**, 014004 (2016).

49. Strained GaAs/InGaAs core-shell nanowires for photovoltaic applications,

K. Moratis, S.L. Tan, S. Germanis, C. Katsidis, M. Androulidaki, K. Tsagaraki, Z. Hatzopoulos, F. Donatini, J. Cibert, Y.-M. Niquet, H. Mariette, N.T. Pelekanos, Nanoscale Research Letters **11**, 176 (2016), DOI: 10.1186/s11671-016-1384-y. (2)

48. Structure, Strain and Composition Profiling of InAs/GaAs(211)B Quantum Dot Superlattices

N. Florini, G. P. Dimitrakopoulos, J. Kioseoglou, S. Germanis, C. Katsidis, Z. Hatzopoulos, N. T. Pelekanos, Th. Kehagias, J. of Appl. Phys. **119**, 034304 (2016). (1)

47. Assembly of quantum dots on peptide nanostructures and their spectroscopic properties,

Emmanouil Kasotakis, Athanasia Kostopoulou, Miguel Spuch-Calvar, Maria Androulidaki, Nikos Pelekanos, Antonios G. Kanaras, Anna Mitraki, and Alexandros Lappas, Appl. Phys. A-Materials Science & Processing **116**, 977-985 (2014). (2)

- 46. Extraction of absorption coefficients from as-grown GaN nanowires on opaque substrates using all-optical method,**
R. Jayaprakash, D. Ajagunna, S. Germanis, M. Androulidaki, K. Tsagaraki, A. Georgakilas, N. T. Pelekanos, *Optics Express* **22**, 19555 (2014). (3)
- 45. Recombination dynamics in piezoelectric (211)B InAs quantum dots,**
S. Germanis, A. Beveratos, C. Gauthron, A. Stavrinidis, G. Konstantinidis, Z. Hatzopoulos, N.T. Pelekanos, *Microelectronic Engineering* **112**, 179 (2013). (2)
- 44. Residual strain and piezoelectric effects in passivated GaAs/AlGaAs core-shell nanowires,**
M. Hocevar, G. Le Thuy, R. Songmuang, M. den Hertog, J. Bleuse, L. Besombes, Y-M Niquet, N. T. Pelekanos, *Appl. Phys. Lett.* **102**, 191103 (2013). (18)
- 43. All dielectric GaN microcavity: Strong coupling and lasing at room temperature,**
K. Daskalakis, P. S. Eldridge, G. Christmann, E. Trichas, R. Murray, E. Iliopoulos, E. Monroy, N. T. Pelekanos, J. J. Baumberg, P. G. Savvidis, *Appl. Phys. Lett.* **102**, 101113 (2013). (27)
- 42. Piezoelectric InAs/GaAs quantum dots with reduced fine-structure splitting for the generation of entangled photons,**
S. Germanis, A. Beveratos, G. E. Dialynas, G. Deligeorgis, P. G. Savvidis, Z. Hatzopoulos, N. T. Pelekanos, *Phys. Rev. B* **86**, 035323 (2012). (6)
- 41. Bragg polariton luminescence from a GaN membrane embedded in all dielectric microcavity,**
E. Trichas, N. T. Pelekanos, E. Iliopoulos, E. Monroy, K. Tsagaraki, A. Kostopoulos, P. G. Savvidis, *Appl. Phys. Lett.* **98**, 221101 (2011). (7)
- 40. Piezoelectric InAs (211)B quantum dots grown by molecular beam epitaxy: structural and optical properties,**
G. E. Dialynas, S. Kalliakos, C. Xenogianni, M. Androulidaki, T. Kehagias, P. Komninou, P. G. Savvidis, Z. Hatzopoulos, N. T. Pelekanos, *J. Appl. Phys.* **108**, 103525 (2010). (14)
- 39. Control of polariton scattering in resonant-tunneling double-quantum-well semiconductor microcavities,**
G. Christmann, C. Coulson, J. J. Baumberg, N.T. Pelekanos, Z. Hatzopoulos, S.I. Tsintzos, P.G. Savvidis, *Phys. Rev. B* **82**, 113308 (2010). (22)
- 38. The effect of annealing on the properties of indium-tin-oxynitride films as ohmic contact for GaN based optoelectronic devices,**
M. Himmerlich, M. Koufaki, G. Ecke, C. Mauder, V. Cimalla, J.A. Schaefer, A. Kondilis, N.T. Pelekanos, M. Modreanu, S. Krischok, E. Aperathitis, *Applied Materials & Interfaces* **1**, 1451 (2009). (11)
- 37. Resonantly enhanced selective photochemical etching of GaN,**
E. Trichas, M. Kayambaki, E. Iliopoulos, N. T. Pelekanos, P. G. Savvidis, *Appl. Phys. Lett.* **94**, 173505 (2009). (13)
- 36. Room temperature GaAs exciton-polariton light emitting diode,**
S. Tsintzos, P. G. Savvidis, G. Deligeorgis, Z. Hatzopoulos, N. T. Pelekanos, *Appl. Phys. Lett.* **94**, 071109 (2009), selected also to appear in the March 2, 2009 issue of the *Virtual Journal of Nanoscale Science & Technology*. (29)
- 35. Internal field effects on the lasing characteristics of InGaN/GaN quantum well lasers,**
G. E. Dialynas, G. Deligeorgis, M. Zervos, N. T. Pelekanos, *J. Appl. Phys.* **104**, 113101 (2008). (9)
- 34. Current transport in semiconductor nanowires with built-in barriers based on a 1D transfer matrix calculation,**
M. Zervos, N. T. Pelekanos, *J. Appl. Phys.* **104**, 054302 (2008). (2)
- 33. A GaAs polariton light-emitting diode operating near room temperature,**
S. Tsintzos, N. T. Pelekanos, G. Konstantinidis, Z. Hatzopoulos, P. G. Savvidis, *Nature* **453**, 372 (2008). (130)
- 32. Low resistance as-deposited Cr/Au contacts on p-type GaN,**
F. G. Kalaitzakis, N. T. Pelekanos, P. Prystawko, M. Leszczynski, G. Konstantinidis, *Appl. Phys. Lett.* **91**, 261103 (2007). (8)
- 31. Reduced threshold current in (111)B grown InGaAs/AlGaAs laser diodes: the positive role of piezoelectric effect,**
G. Deligeorgis, G. Dialynas, Z. Hatzopoulos, N. T. Pelekanos, *Appl. Phys. Lett.* **90**, 121126 (2007). (4)
- 30. Selective measurement of hole tunneling times through AlGaAs barriers based on the quantum confined Stark effect,**

N. Le Thomas, N.T. Pelekanos, Z. Hatzopoulos, Phys. Rev. B **72**, 235323 (2005).

29. Micro-Raman characterization of InGaN/GaN/Al₂O₃ heterostructures,

A.G. Kontos, Y.S. Raptis, N.T. Pelekanos, A. Georgakilas, E. Bellet-Amalric, D. Jalabert, Phys. Rev. B **72**, 155336 (2005). (36)

28. Tunable laser diodes by Stark effect,

N. Le Thomas, N.T. Pelekanos, Z. Hatzopoulos, Appl. Phys. Lett. **83**, 1304 (2003), selected also to appear in the Virtual Journal of Nanoscale Science & Technology **8**, Issue 8 (2003). (7)

27. Direct comparison of recombination dynamics in cubic and hexagonal GaN/AlN quantum dots,

J. Simon, N.T. Pelekanos, C. Adelman, E. Martinez-Guerrero, R. André, B. Daudin, Le Si Dang, H. Mariette, Phys. Rev. B **68**, 035312 (2003). (140)

26. Piezoelectric effect on the optical phonon modes of strained cubic semiconductors: case of CdTe quantum wells,

V. Stergiou, N.T. Pelekanos, Y.S. Raptis, Phys. Rev. B **67**, 165304 (2003). (7)

25. Widely tunable light-emitting diodes by Stark effect in forward bias,

N. Le Thomas, N.T. Pelekanos, Z. Hatzopoulos, E. Aperathitis, R. Hamelin, Appl. Phys. Lett. **81**, 1582 (2002), selected also to appear in the Virtual Journal of Nanoscale Science & Technology **6**, Issue 10 (2002). (9)

24. Tunable piezoelectric semiconductor laser controlled by the carrier injection level,

V. Ortiz, N.T. Pelekanos, G. Mula, Le Si Dang, Appl. Phys. Lett. **77**, 788 (2000). (8)

23. Self-assembled zinc blende GaN quantum dots grown by molecular beam epitaxy,

E. Martinez-Guerrero, C. Adelman, F. Chabuel, J. Simon, N.T. Pelekanos, G. Feuillet, B. Daudin, H. Mariette, Appl. Phys. Lett. **77**, 809 (2000) (69)

22. Self-assembled InGaN quantum dots grown by molecular beam epitaxy,

C. Adelman, J. Simon, G. Feuillet, N.T. Pelekanos, B. Daudin, G. Fishman, Appl. Phys. Lett. **76**, 1570 (2000). (118)

21. Spontaneous polarization effects in GaN/AlGaIn quantum wells,

J. Simon, R. Langer, A. Barski, N.T. Pelekanos, Phys. Rev. B **61**, 7211 (2000). (48)

20. Preferential nucleation of GaN self-assembled quantum dots at the edge of AlN threading dislocations,

J.L. Rouvière, J. Simon, G. Feuillet, N.T. Pelekanos, B. Daudin, Appl. Phys. Lett. **75**, 2632 (1999). (64)

19. Giant electric fields in unstrained GaN single quantum wells,

R. Langer, J. Simon, V. Ortiz, N.T. Pelekanos, A. Barski, R. André, M. Godlewski, Appl. Phys. Lett. **74**, 3827 (1999). (151)

18. High reflectivity GaN/GaAlN Bragg mirrors at blue/green wavelengths grown by molecular beam epitaxy,

R. Langer, A. Barski, J. Simon, N.T. Pelekanos, O. Konovalov, R. André, Le Si Dang, Appl. Phys. Lett. **74**, 3610 (1999). (62)

17. Blue-light emission from GaN self-assembled quantum dots due to giant piezoelectric effect,

F. Widmann, J. Simon, B. Daudin, G. Feuillet, J.L. Rouvière, N.T. Pelekanos, G. Fishman, Phys. Rev. B. Rapid Comm. **58**, R15989 (1998). (245)

16. Improved quality GaN grown by molecular beam epitaxy using In as a surfactant,

F. Widmann, B. Daudin, G. Feuillet, N. Pelekanos, J.L. Rouvière, Appl. Phys. Lett. **73**, 2642 (1998). (136)

15. Growth kinetics and optical properties of self-organized GaN quantum dots,

F. Widmann, B. Daudin, G. Feuillet, Y. Samson, J.L. Rouvière, N. Pelekanos, J. Appl. Phys. **83**, 7618 (1998). (197)

14. Efficient all-optical light modulation in a piezoelectric heterostructure at room temperature,

V. Ortiz, N.T. Pelekanos, G. Mula, Appl. Phys. Lett. **72**, 963 (1998). (10)

13. Observation of two-dimensional exciton-phonon quasi-bound states,

N.T. Pelekanos, H. Haas, N. Magnea, V. Belitsky, A. Cantarero, Phys. Rev. B **56**, Rapid Comm., R10056 (1997). (4)

12. Room temperature electro-optic effect in CdHgTe multiple quantum well heterostructures at 1.5 μm,

G. Mula, N. T. Pelekanos, P. Gentile, N. Magnea, J.L. Pautrat, Appl. Phys. Lett. **70**, 856 (1997).

11. All-optical spatial light modulator with MHz modulation rates,

N. T. Pelekanos, B. Deveaud, J. M. Gérard, H. Haas, U. Strauss, W. W. Rühle, J. Hebling, J. Kuhl, *Optics Letters* **20**, 2099 (1995). (4)

10. Homogeneous linewidths of excitons in CdTe/(Cd,Zn)Te single quantum wells,
E. J. Mayer, N. T. Pelekanos, J. Kuhl, N. Magnea, H. Mariette, *Phys. Rev. B* **51**, Rapid Comm., 17263 (1995). (40)

9. Upper conduction band effects in heavily strained low-dimensional semiconductor systems,
J. M. Jancu, D. Bertho, C. Jouanin, B. Gil, N. T. Pelekanos, N. Magnea, H. Mariette, *Phys. Rev. B* **49**, Rapid Comm., 10802 (1994). (10)

8. Ultrathin pseudomorphic layers of ZnTe in CdTe/(Cd,Zn)Te superlattices: a direct optical probe of the mixed type band configuration,
N. T. Pelekanos, P. Peyla, Le Si Dang, H. Mariette, P. H. Jouneau, A. Tardot, N. Magnea, *Phys. Rev. B* **48**, 1517 (1993). (22)

7. Tunneling dynamics in CdTe/(Cd,Zn)Te asymmetric double quantum well structures,
S. Haacke, N. T. Pelekanos, H. Mariette, M. Zigone, A. P. Heberle, W. W. Rühle, *Phys. Rev. B* **47**, Rapid Comm., 16643 (1993). (43)

6. Room temperature exciton absorption engineering in II-VI quantum wells,
N. T. Pelekanos, H. Haas, N. Magnea, H. Mariette, A. Wasiela, *Appl. Phys. Lett.* **61**, 3154 (1992). (34)

5. Quasi-two dimensional excitons in (Zn,Cd)Se/ZnSe quantum wells: reduced exciton-LO-phonon coupling due to confinement effects,
N. T. Pelekanos, J. Ding, M. Hagerot, A. V. Nurmikko, H. Luo, N. Samarth, J. K. Furdyna, *Phys. Rev. B* **45**, 6037 (1992). (182)

4. Room temperature exciton absorption in (Zn,Cd)Se/ZnSe quantum wells at blue-green wavelengths,
J. Ding, N. Pelekanos, A. V. Nurmikko, H. Luo, N. Samarth, J. K. Furdyna, *Appl. Phys. Lett.* **57**, 2885 (1990). (96)

3. Hot exciton luminescence in ZnTe/MnTe quantum wells: role of confinement, excitons and disorder,
N. Pelekanos, J. Ding, Q. Fu, A. V. Nurmikko, S. Durbin, M. Kobayashi, R. L. Gunshor, *Phys. Rev. B* **43**, Rapid Comm., 9354 (1991). (34)

2. Spectroscopy in CdTe/MnTe quantum wells; a strained layer II-VI heterostructure with strong electronic confinement ,
N. Pelekanos, Q. Fu, J. Ding, W. Walecki, A. V. Nurmikko, S. Durbin, J. Han, M. Kobayashi, R. L. Gunshor, *Phys. Rev. B* **41**, 9966 (1990). (29)

1. Zinblend MnTe: epilayers and quantum well structures,
S. M. Durbin, J. Han, Sungki O, M. Kobayashi, D. R. Menke, R. L. Gunshor, Q. Fu, N. Pelekanos, A. V. Nurmikko, D. Li, J. Gonsalves, N. Otsuka, *Appl. Phys. Lett.* **55**, 2087 (1989). (97)

BOOK CHAPTER:

1. Electrically Driven Polariton Light Emitting Devices,
S. I. Tsintzos, N. T. Pelekanos, P. G. Savvidis, in “Exciton Polaritons in Microcavities”, edited by V. Timofeev and D. Sanvitto, Springer Series in Solid-State Sciences 172, (2012).

SPECIAL JOURNAL ISSUES:

2. InAs nanostructures on polar GaAs surfaces,
G. E. Dialynas, A. Pantazis, Z. Hatzopoulos, M. Androulidaki, K. Tsagaraki, G. Konstantinidis, C. Xenogianni, E. Trichas, S. Tsintzos, P. G. Savvidis, N. T. Pelekanos, *Int. Journal of Nanotechnology*, special issue on Nanotechnology in Greece, *IJNT* **6**, p.124-136 (2009). (2)

1. Structural and optical properties of self-assembled GaN/AlN quantum dots,
C. Adelman, M. Arlery, B. Daudin, G. Feuillet, Le Si Dang, H. Mariette, N. Pelekanos, J.L. Rouvière, J. Simon, F. Widmann, *Comptes Rendus de la Académie des Sciences de Paris*, special issue on Wide Gap Semiconductors, t. 1, Série IV, p.61-69, (2000). (8)

CONFERENCE PAPERS in PEER-REVIEWED JOURNALS:

62. Strain field determination in III–V heteroepitaxy coupling finite elements with experimental and theoretical techniques at the nanoscale,

N. Florini, G. P. Dimitrakopoulos, J. Kioseoglou, N. T. Pelekanos, Th. Kehagias, DeGruyter, J Mech Behav Mater **26**(1–2), 1–8 (2017).

61. 3-D strain fields in low-dimensional III-V semiconductors: A combined finite elements and HRTEM approach,

N. Florini, G. P. Dimitrakopoulos, J. Kioseoglou, N. T. Pelekanos, Th. Kehagias, E-MRS 2017 Spring meeting, Symposium N, Phys. Status Solidi A-Applications and Materials **215**, Article number 1700409 (2018).

60. Nanostructure and strain properties of core-shell GaAs/AlGaAs nanowires,

Th. Kehagias, N. Florini, J. Kioseoglou, Th. Pavloudis, Ph. Komninou, T. Walther, K. Moratis, Z. Hatzopoulos, N. T. Pelekanos, Microscopy of Semiconducting Materials MSM-XIX Conference, Cambridge, 2015, Semicond. Sci. Technol. **30**, 114012-114022 (2015). (1)

59. Ultra-smooth GaN membranes by photo-electrochemical etching for photonic applications,

R. Jayaprakash, F. Kalaitzakis, M. Kayambaki, K. Tsagaraki, E. Monroy, N.T. Pelekanos, International Conference on Intergranular and Interphase Boundaries in Materials, IIB2013, Halkidiki, Journal of Materials Science **49**, 4018-4024 (2014). (1)

58. Effect of boiling aqua regia on MOCVD and MBE p-type GaN surfaces and Cr/p-GaN interfaces,

F. G. Kalaitzakis, G. Konstantinidis, L. Sygellou, S. Kennou, S. Ladas, N. T. Pelekanos, Micro-Nano 2010 Athens, Microelectronic Engineering **90**, 115 (2012). (1)

57. Monolithic integration of nitride-based transistor with light emitting diode for sensing applications,

F. G. Kalaitzakis, E. Iliopoulos, G. Konstantinidis, N. T. Pelekanos, Micro-Nano 2010 Athens, Microelectronic Engineering **90**, 33 (2012). (8)

56. Single dot spectroscopy on InAs/GaAs piezoelectric quantum dots,

G. E. Dialynas, N. Hadjidimitriou, S. Kalliakos, S. Tsintzos, P. G. Savvidis, Z. Hatzopoulos, N. T. Pelekanos, Micro-Nano 2007 Athens, phys. stat. sol. (a) **205**, 2566 (2008). (3)

55. Selective photochemical etching of GaN films and laser lift-off for microcavity fabrication,

M. Trichas, M. Kayambaki, C. Xenogianni, P. Tsotsis, E. Iliopoulos, N. T. Pelekanos, P. G. Savvidis, Micro-Nano 2007 Athens, phys. stat. sol. (a) **205**, 2509 (2008). (6)

54. Towards electrically-pumped microcavity polariton lasers,

S. Tsintzos, P. G. Savvidis, G. Konstantinidis, Z. Hatzopoulos, N. T. Pelekanos, Micro-Nano 2007 Athens, phys. stat. sol. (c) **5**, 3594 (2008). (1)

53. Anti-binding of bi-excitons in (211)B InAs/GaAs piezoelectric quantum dots,

G.E. Dialynas, C. Xenogianni, S. Tsintzos, E. Trichas, P.G. Savvidis, G. Konstantinidis, J. Renard, B. Gayral, Z. Hatzopoulos, N.T. Pelekanos, MSS-2007 Genoa, Physica E **40**, 2113 (2008).

***52. InAs quantum dots grown by molecular beam epitaxy on GaAs (211)B polar substrates,**

M. Zervos, C. Xenogianni, G. Deligeorgis, M. Androulidaki, P.G. Savvidis, Z. Hatzopoulos, N. T. Pelekanos, QD-2006 Chamonix, phys. stat. sol. (c) **3**, 3988 (2006). (6)

***51. InN quantum dots grown on GaN (0001) by molecular beam epitaxy,**

E. Dimakis, A. Georgakilas, E. Iliopoulos, K. Tsagaraki, A. Delimitis, P. Komninou, H. Kirmse, W. Neumann, M. Androulidaki, N. T. Pelekanos, QD-2006 Chamonix, phys. stat. sol. (c) **3**, 3983 (2006). (4)

50. Optical emission spectroscopy during fabrication of indium-tin-oxynitride films by rf-sputtering,

M. Koufaki, M. Sifakis, E. Iliopoulos, N. Pelekanos, M. Modreanu, V. Cimalla, G. Ecke, and E. Aperathitis, E-MRS 2005 Strasbourg, Appl. Surf. Science **253**, 405 (2006). (9)

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Workshop on “Piezoelectric nanodevices: present and future”, Accademia dei Lincei, Rome, September 2012.

14. GaAs nanowires for next generation photovoltaics: progress and challenges,
9th International Conference on Nanosciences & Nanotechnologies (NN12), Thessaloniki, July 2012.

13. Next generation nanophotonic semiconductor devices,
Workshop on “Emerging Technologies in Micro and Nano Electronics and Eco-Friendly Aspects”, Heraklion, July 2011.

12. Οπτοηλεκτρονικές Διατάξεις: Νέες Κατευθύνσεις,
Δημερίδα Micro-Nano, Athens, November 2009.

11. Room temperature GaAs polariton LED: A first step towards a polariton laser?,
ICO-Photonics 2009, Delphi, October 2009.

10. Near room temperature GaAs polariton LED,
International Conference on the Physics of Semiconductors 2008, ICPS 08, Rio de Janeiro.

9. Πιεζοηλεκτρικές κβαντικές τελείες: βασική κατανόηση και φωτονικές εφαρμογές,
Δημερίδα ITE, Ανώγεια, June 2005.

8. GaN quantum dots: from basic understanding to unique applications,
Microelectronics Microsystems and Nanotechnology Conference, MMN'04, Athens (2004).

7. Stark-tunable InGaAs laser diodes,
International Semiconductor Conference, CAS'2002, Sinaia Romania (2002).

6. Piezoelectric effects in heterostructures: consequences and applications,
Novel Index Surfaces 2001, NIS'01, Aspet (2001).

5. Growth and Comparative Optical Properties of Hexagonal and Cubic GaN QDs,
European Material Research Society meeting EMRS Strasbourg (2001).

4. Comparative study of optical properties of cubic and hexagonal GaN quantum boxes, International Workshop on Physics of Light-Matter Coupling in Nitrides, Saint-Nectaire (2000).

3. Effets de polarisation dans les nitrides,
N.T. Pelekanos, Ecole Thématique du CNRS sur les Nitrides d'Eléments III, Orcières-Merlette (2000).

2. Effets piézo-électriques géants dans les nanostructures GaN,
N.T. Pelekanos, in Workshop of Groupement de Recherches sur «Matériaux et Fonctions de l'Optique Non-Linéaire”, Saint Martin Vesubie (1999).

1. Fast Photorefractive Materials Using Quantum Wells,
N. T. Pelekanos, B. Deveaud, C. Guillemot, J. M. Gérard, P. Gravey, B. Lambert, A. Le Corre, J. E. Viallet, in European Material Research Society meeting EMRS Strasbourg (1994).

INVITED TALKS in ACADEMIC INSTITUTIONS:

14. Highly uniform GaAs nanowires for photovoltaic applications,
University of Crete, Department of Physics, December 2017.

13. Random and periodic arrays of strained GaAs/InGaAs core-shell nanowires for PV applications,
CEA/Grenoble, INAC, June 2017.

12. Ultra-low threshold GaN polariton lasing at room temperature,

CEA/Grenoble, INAC, January 2016.

11. GaN nanowires, membranes, microcavities, and hybrid devices,
EPFL Lausanne, Institut de Photonique et Electronique Quantique, May 2013.

10. III-V nanowires for next generation photovoltaics
CEA/Grenoble, LITEN, December 2010.

9. Room temperature GaAs polariton LEDs: a first step towards polaritronics?
University of Connecticut, Department of Electrical Engineering, August 2008.

7/8. Polarization effects in nitride nanostructures,
University of Athens, Department of Physics, and Institute of Microelectronics in National Research Center “Demokritus” in Athens, November 1999.

6. Giant piezoelectric and spontaneous polarization effects in GaN nanostructures,
University of Crete, Department of Physics, February 1999.

5. Novel Optoelectronic Devices based on the Piezoelectric Effect,
FORTH, May 1998.

4. Hot (e, A^0) photoluminescence as a method to determine relaxation times of hot electrons,
National Technical University of Athens, January 1998.

3. Photorefractive quantum wells,
Max-Planck-Institut für Festkörperforschung, January 1994.

2. Optical Spectroscopy of II-VI quantum well systems and exciton-phonon interaction,
CEA/Grenoble, Département de Recherche Fondamentale sur la Matière Condensée, November 1991.

1. II-VI heterostructures for blue optoelectronics,
University of Maryland, Physics Department, April 1991.

FUNDING:

European:

-Participation in European contract entitled CLERMONT 4, FP7-PEOPLE-ITN-235114, “Exciton–Polaritons in microcavities: physics and devices” (2009-2013). FORTH budget 314,570 €.

-Participation in European contract entitled ICARUS, FP7-PEOPLE-ITN-237900, “Hybrid organic-inorganic nanostructures for photonics and optoelectronics” (2009-2013). FORTH budget ~410,000€.

-Matching Funds: I have managed 99,572 € since 2001.

-Principal contractor and team coordinator in European contract entitled GaNano, NMP-2002-505641-1, “New Generation of GaN-based sensor arrays for nano- and pico-fluidic systems for fast and reliable biomedical testing” (2004-2006). FORTH budget 364,000€.

-Coordination of European contract entitled QN-Laser II, IST-2001-38982, “Quaternary nitride low-threshold laser II” (2003). FORTH budget 68,000€.

-Coordination of European contract entitled TUNE-Laser, IST-2000-31028, “Tunable laser diode based on the Stark effect” (2001-2002). FORTH budget 100,000€.

-Coordination of European contract entitled QN-Laser, IST-2000-26464, “Quaternary nitride low-threshold laser” (2001-2002). FORTH budget 100,000€.

National:

-Supervision of Doctoral Fellowship of E. Amargianitakis funded by the Hellenic Foundation for Research and Innovation, entitled “Nitride Polariton Lasers” (2017-2019). Budget 18,900 €.

-Coordination of LANEF Chair of Excellence 2014 project, funded by the French government, entitled “Nanowire Innovative Solar Cells” (2014-2017). Total budget ~300,000 €.

-Coordination of ARISTEIA II project “NILES” funded by the Greek government, on “*Nanowire Innovative Light Emitting devices and Solar cells*” (2014-2015). Total budget 245,000 €.

-Coordination of THALES project “NANOPHOS” funded by the Greek government, on “*Nanophotonic Semiconductor Devices*” (2012-2015). Total budget 540,000 €.

-Coordination of Solar Innovation 2010 Award project funded by the French government on “*III-V Nanowires for Next-generation Photovoltaics*” (2011-2013). Total budget ~250,000 €.

-Coordination of HRAKLEITOS II project funded by the Greek government, on “*Photonic Devices of Piezoelectric Quantum Dots*” (2010-2014). Total budget 45,000 €.

-Συμμετοχή στο Πρόγραμμα Πόλου Καινοτομίας Κρήτης, 2007-2008, πάνω σε χαρακτηρισμό ημιαγωγικού υλικού για χημικούς αισθητήρες. Budget 16,000 €.

-University grant from Public Investments 2006, for the purchase of a “*Femtosecond Ti:Sapphire laser system*” (2006-2007). Total budget 250,000 €.

-Coordination of PENED 2003 project funded by the Greek government, on “*Tunable wavelength semiconductor lasers*” (2006-2009). Total budget 138,480 €.

-Participation in PENED 2003 project funded by the Greek Research Council, on “*Strong coupling in GaN-based microcavities for polariton devices*” (2005-2008). Total budget 80,000 €.

-Participation in PYTHAGORAS project funded by the Greek government, on “*Exploitation of strong light-matter coupling in organic microcavities for optoelectronic devices*” (2005-2006). Total budget 80,000 €.

-Participation in PYTHAGORAS project funded the Greek government, on “*Growth and Properties on Novel III-V semiconductor heterostructures and nanostructures*” (2004-2006). Total budget 80,000 €.

-Coordination of PENED 2001 project funded by the Greek government, on “*UV-emitters*” (2003-2006). Total budget 205,430 €.

-Participation in Program of Excellence (Πρόγραμμα Αριστείας), granted to FORTH/IESL by the Greek government (2002-2006). Personal budget for building a UV micro-photoluminescence setup 100,000 €.

-Participation in program EPEAEK, funded by the Greek government in order to support the Graduate Program on Micro- and Optoelectronics of the Physics Department of the University of Crete for the period 2002-2004.

-Participation in Contrat-Région funded by the French government, on “*Cubic nitride light emitting diodes*” (1998-1999).

-Participation in Contrat-Région funded by the French government, on “*Nitride nanostructures: growth and characterisation*” (1998-1999).

-Participation in PENED with National Technical University of Athens funded by the Greek government, on “*Hot electron-acceptor luminescence as a probe of dynamic relaxation processes in semiconductor heterostructures*” (1997-1999).

Bilateral:

-Coordination of Contrat Franco-Hellenique funded by the Ministries of Foreign Affairs of France and Greece, on “*Piezoelectric quantum dots for photonic applications*” (2006-2008).

-Coordination of IKYDA exchange program between Greece and Germany (Technical University of Ilmenau), funded by IKY, on “*Study for enhancing the performance of GaN-based UV photodiodes and lasers*” (2004-2006).

-Coordination of Contrat Franco-Hellenique funded by the Ministries of Foreign Affairs of France and Greece, on “*Epitaxial growth and fabrication of quaternary nitride lasers with enhanced performance in the UV*” (2003-2005).

-Coordination of Contrat Franco-Hellenique funded by the Ministries of Foreign Affairs of France and Greece, on “*Comparative study of hexagonal and cubic GaN heterostructures*” (2000-2001).

Industrial:

-Participation in research contract funded by France Telecom, on “*Photorefractive quantum wells for optical interconnects*” (1993-1995).

EDUCATIONAL WORK:

Teaching:

- Course on “*Electromagnetism and Optics*” in the 3rd year of the undergraduate program of the Materials Science and Technology Department of Univ. of Crete (fall semester 2003-2017).
- Course on “*Principles of Semiconductor Physics*” in the 4th year of the undergraduate program of the Materials Science and Technology Department of Univ. of Crete (spring semester 2009-2017).
- Course on “*Semiconductor Optoelectronic Devices*” in the Microelectronics/Optoelectronics postgraduate program of the Physics Department and the Materials Science and Technology Department of Univ. of Crete (spring semester 2002-2017).
- Course on “*Optoelectronics and Laser*” in the 4th year of the undergraduate program of the Materials Science and Technology Department of Univ. of Crete (spring semester 2007-2008).
- Course on “*Optoelectronic and Photonic materials*” in the 4th year of the undergraduate program of the Materials Science and Technology, Department of Univ. of Crete (spring semester 2005 and 2006).
- Course on “*Microelectronic, Optoelectronic and Magnetic materials*” in the 2nd year of the undergraduate program of the Materials Science and Technology Department of Univ. of Crete (spring semester 2004).
- Series of lectures on “*Semiconductor Optical Properties and Laser Diodes*” in the Summer school of the Physics Department of Univ. of Crete (July 2002 and 2003).
- Co-directed the Microelectronics’ postgraduate program of the Physics Department of the Univ. of Crete (2001-2003).
- Teaching assistant in “*General Physics*” course in the undergraduate program of the Physics Department of Brown University, USA, (1985-1987).

Supervision:

Post-doctoral fellows:

5. **Siew Li Tan**, developing “*Innovative Nanowire Solar Cells*”, CEA/Grenoble, 2014-2016.
4. **Savvas Germanis**, performing “*Micro-photoluminescence characterization of transition metal dichalcogenides*”, FORTH, 2015-2016.
3. **Charalambos Katsidis**, on “*Simulations of semiconductor nanostructures and devices*”, University of Crete, 2013-2015.
2. **Fotis Kalaitzakis**, developing and characterizing “*Polaritonic light emitting devices in the GaAs and GaN systems*”, University of Crete/FORTH, 2012-2015.
1. **Moira Hocevar**, characterizing “*III-V Nanowires for Next Generation Photovoltaics*”, CEA/Grenoble, 2012-2013.

Ph.D thesis advisor:

10. **G. Thyris**, on «*High temperature single photon emitters based on InAs piezoelectric quantum dots*», Materials Science, University of Crete (11/2017-).
9. **E. Amargianitakis**, on “*Development of nitride polariton laser structures with improved characteristics*”, Materials Science, University of Crete (4/2016-).
8. **S. Germanis**, on “*Photonic devices based on piezoelectric InAs quantum dots*”, Materials Science, University of Crete (12/2010-10/2015). Subsequently, post-doc at the Pierre et Marie Curie University in Paris, developing emitters based on quantum dot molecules.

7. **R. Jayaprakash**, on “*Novel approaches for robust polaritonics*”, Materials Science, University of Crete (1/2011-10/2015). Subsequently, post-doc at the Department of Physics & Astronomy of University of Sheffield, developing hybrid polaritonic devices.
6. **F. Kalaïtzakis**, on “*Development of technology for improved nitride based optoelectronic devices*”, Materials Science, University of Crete (2004-2011). Subsequently, post-doc at the Microelectronics Research Group (FORTH/IESL) developing nitride-based optoelectronic devices.
5. **S. Tsintzos**, on “*Polariton light emitting devices*”, Materials Science, University of Crete (2006-2010). Subsequently, post-doc at the Microelectronics Research Group (FORTH/IESL) developing polaritonic devices.
4. **G. Deligeorgis**, on “*Laser diodes with a variable internal electric field*”, Physics, University of Crete (2002-2008). Subsequently, post-doc at the Microelectronics Research Group (FORTH/IESL) developing e-beam nano-patterning technology, and at LAAS-Toulouse developing graphene-based electronics.
3. **N. Le Thomas**, on “*Diodes laser accordables en longueur d’onde à base de l’effet Stark quantique*”, Physics, Institut Polytechnique de Grenoble (1999-2002). Subsequently, post-doc at the group of U. Woggon in Univ. of Duisburg, and of Prof. Ilegems in EPFL Lausanne.
2. **J. Simon**, on “*Etude des propriétés optiques de nanostructures quantiques à base de nitrures d’éléments III*”, Physics, Université J. Fourier-Grenoble I (1998-2001). Subsequently hired by LETI in CEA/Grenoble.
1. **V. Ortiz**, on “*Etude de dispositifs optoélectroniques à base d’hétérostructures piézoélectriques*”, Physics, Université J. Fourier-Grenoble I (1996-1999). Subsequently hired at THALES Research Center.

M.Sc thesis advisor:

10. **E. Manidakis**, on “*Nanowire core-shell heterostructures for photovoltaic applications*”, Materials Science, University of Crete (2017-).
9. **F. Miziou**, on “*Nitride microcavities for polariton devices*”, Physics, University of Crete (2016-)
8. **G. Thyris**, on «*Development of high temperature single photon emitters based on InAs piezoelectric quantum dots*», Physics, University of Crete (2016-2017).
7. **E. Amargianitakis**, on “*Nitride polariton structures with improved characteristics*”, Physics, University of Crete (2014-2016).
6. **S. Eftichis**, on “*Improved electrical injection of GaAs polaritonic devices*”, Physics, University of Crete (2010-2011).
5. **S. Germanis**, on “*Polarization-resolved single dot spectroscopy of (211)B InAs single quantum dots*”, Physics, University of Crete (2009-2010).
4. **S. Tsintzos**, on “*Tunable vertical-cavity surface emitting lasers*”, Physics, University of Crete (2004-2006).
3. **G. Dialynas**, on «*Influence of piezoelectric field in the lasing characteristics of InGaAs/AlGaAs quantum wells*», Physics, University of Crete (2002-2004).
2. **F. Kalaïtzakis**, on “*Fabrication and optical characterisation of laser structures with InAlGaN/GaN quantum wells in the active region*”, Physics, University of Crete (2001-2003).
1. **J. Simon**, on “*Observation par spectroscopie des effets piézo-électriques géants d’hétérostructures à base de Nitrure de Gallium*”, Physics, Université J. Fourier-Grenoble I (1998).

B.Sc diploma work advisor:

3. **E. Darivianaki**, on «*Core-shell GaAs/InGaAs nanowire-based photovoltaic devices*», Materials Science, University of Crete (2017).
2. **N. Vasilantonakis**, on «*Optical characterisation of InGaAs/AlGaAs quantum wells for use in polaritonic devices*», Materials Science, University of Crete (2009).
1. **A. Pantazis**, on «*Study of InAs quantum dots self-assembled on GaAs*», Physics, University of Crete (2002).

CONFERENCE ORGANIZING:

- International Program Committee of the 34th International Conference of the Physics of Semiconductors that will be held in Montpellier in July 2018.
- Chairman of the 30th Panhellenic Conference on Solid State Physics and Materials Science, held in Heraklion Crete, September 2014. (<http://fsk30.materials.uoc.gr/>)
- Organizing and Program Committee of the Micro & Nano 2012 Conference, held in Heraklion, Kokkini Hani, October 2012.
- International Scientific Committee of the Micro & Nano 2010 Conference, held in Athens, December 2010.
- International Scientific Committee of the ICO-Photonics-Delphi2009 Conference on “Emerging Trends and Novel Materials in Photonics” in Delphi, Greece, October 7-9, 2009.
- Co-chairman of the European Workshop on III-Nitrides Semiconductors and Devices (EW3NS), held in Hersonissos Crete, September 2006.
- Programme Committee of the Microelectronics Microsystems and Nanotechnology Conference (MMN’04), held in Athens, November 2004.
- Organizing committee of the 13th Heterostructure Technology Workshop, held in Koutouloufari Crete, October 2004.
- Organizing committee of the XVIII Panhellenic Conference of Solid State Physics, held in Heraklion Crete, September 2002.

EVALUATION EXPERT:

- External Evaluator in several EC-funded projects (2006-2015), such as for instance in Integrated project ZODIAC on quantum dot lasers.
- Evaluation Expert for EC-proposals: SEE-Eranet 2007, IST-2.5.1 “Photonic Components” 2005, IST-FET 2005, INTAS 2004, INTAS 2003.
- Demokritos internal programs 2006. Pythagoras 2003 and Heraklitos 2002 programs funded by the Greek Ministry of Education.

REVIEWING:

- Referee for Phys. Rev. Applied, Phys. Rev. Lett., Phys. Rev. B, Appl. Phys. Lett., J. Appl. Phys, phys. Stat. sol., Nanoscale Research Letters, Microelectronics Engineering.

OTHER:

- Member of the Ph.D defense committee of Ioannis Paradisanos, University of Crete, March 2018, with thesis title: “Excitons in atomically thin tungsten disulfide (WS₂) layers”.
- Member of the Ph.D defense committee of Elena Papadomanolaki, University of Crete, September 2017, with thesis title: “Epitaxial growth and characterization of III-nitride thin films and heterostructures for photovoltaic applications”.
- Member of the Ph.D defense committee of Panagiotis Tsotsis, University of Crete, February 2015, with thesis title: “Fabrication and Study of Novel Polaritonic Devices”.
- Rapporteur in the Ph.D defense committee of Thanh Giang Le Thuy, Université de Grenoble, July 2014, with thesis title: “Croissance de nanofils III-V par epitaxie par jets moléculaires”.
- Rapporteur in the Ph.D defense committee of Aparna Das, Université de Grenoble, June 2012, with thesis title: “Boîtes quantiques de semi-conducteurs nitrures pour des applications aux capteurs opto-chimiques”.

-Member of the Ph.D advisory committee of E. Trichas, University of Crete, December 2010, with thesis title: "Strong light-matter coupling in GaN microcavities".

-Member of the Ph.D advisory committee of N. Sofikiti, University of Crete, December 2009, with thesis title: "Development of chemical sensors and biosensors based on III-nitride heterostructures and nanostructures".

-Member of the Ph.D advisory committee of Z. Viskadourakis, University of Crete, June 2009, with thesis title: "Metal Oxides for Magnetotransport and Thermoelectric Applications".

-Member of the Ph.D advisory committee of E. Dimakis, University of Crete, January 2007, with thesis title: "Physical mechanisms of molecular beam epitaxy and properties of InN thin films (0001)".

-Member of the Ph.D defense committee of Stephanie Blanc, Université Paul Sabatier in Toulouse, November 2002, with thesis title: "Matériaux III-V épitaxiés sur substrats GaAs (111) pour structures lasers émettant au delà du micrometre".

-Interview for an article appeared in the July 2002 issue of "Compound Semiconductors" regarding the FORTH activity on Quaternary Nitride Low-Threshold Lasers.

-Interview for an article in Physics World (May 2008) regarding the demonstration of a near room temperature GaAs polariton light emitting device.