

## 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 and education in the fields of **Nanophotonics & Optoelectronics**.

### 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:

- 2003- today:** **Professor**, Materials Science & Technology Department, University of Crete, and Senior Researcher at the Microelectronics Research Group of the Institute of Electronic Structure & Laser/FORTH, Heraklion, Greece, leading research in the field of Semiconductor Nanotechnology with emphasis on Optoelectronic applications.
- 2001-2003:** **Senior Researcher**, Microelectronics Research Group, Institute of Electronic Structure & Laser/FORTH, Heraklion, Greece, demonstrating tunable laser diodes and LEDs and studying semiconductor quantum dots.
- 1994-2001:** **Research Engineer** (permanent position), Laboratory of Semiconductor Physics, Department of Fundamental Research on Condensed Matter, Commissariat à l'Energie Atomique, Grenoble, France, performing optical characterization of III-nitride hetero/nano-structures and experimenting on all-optical piezoelectric modulators.
- 1993-1994:** **Postdoctoral Researcher**, Ultrafast Spectroscopy Group, Max-Planck-Institute for Solid State Research, 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**, Optical Interconnection Group, Centre National d'Etudes des Télécommunications, France-Telecom, Lannion, France, developing photorefractive quantum well devices for optical switching in telecommunications.
- 1991-1992:** **Postdoctoral Researcher**, Laboratory of Semiconductor Physics, Department of Fundamental Research on Condensed Matter, Commissariat à l'Energie Atomique, Grenoble, France, studying optical properties of II-VI semiconductor heterostructures.

### RESEARCH INTERESTS:

- a) Quantum dot-based high temperature sources of single and entangled photons.
- b) Polariton lasing and parametric scattering at room temperature.
- c) Next generation solar cells based on halide perovskites and III-V semiconductor nanostructures.
- d) 2D materials for optoelectronic applications.

## ACHIEVEMENTS:

### RESEARCH

- A total of 249 publications, including:
  - 7 patents
  - 56 publications in peer-reviewed journals
  - 64 conference papers in peer-reviewed journals
  - 2 papers in special issues
  - 1 book chapter
  - 119 abstracts in conference proceedings.
- About 3150 citations and a corresponding H-factor of 29.
- 18 invited talks in conferences/workshops and 15 invited talks in academic institutions.
- Coordination/participation in 24 national, 6 European, 1 industrial, and 4 bilateral research contracts, whose total estimated budget for the home institutions is over 4 million Euros.
- Supervised 5 post-docs, 10 PhD and 12 MSc theses. Currently supervising 3 PhD candidates.
- Evaluation expert for European and national research programs (Greece, France, Israel).
- Referee in various academic journals (PRL, PRB, PRAppl, APL, JAP, ACS Photonics, Sci. Rep.).
- Organized/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:

- Director of Technical Council, 2017-now.
- Member of Research Committee, 2012-2014.
- Responsible for the Final Reception Protocol of the new University buildings in Voutes, 2014.
- Member of New Technologies Committee, 2016-2018.

At the Region level:

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

### 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  $\mu\text{m}$ ,**

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 updated on December 2020 from *ISI-Web of Science* [v.5.30])

**57. Transparent all-oxide hybrid NiO:N/TiO<sub>2</sub> heterostructure for optoelectronic applications,**

C. Aivalioti, A. Papadakis, E. Manidakis, M. Kayambaki, M. Androulidaki, K. Tsagaraki, N. T. Pelekanos, C. Stoumpos, M. Modreanu, G. Crăciun, C. Romanitan, E. Aperathitis, *Electronics* **10**, 988 (2021).

**56. Versatile Nanografting Pathway to Functionally Embellished Fluorogenic Small-molecule on Two-dimensional Inorganic Surfaces,**

D. Gherca, D. Tsikritzis, M. Androulidaki, K. Tsagaraki, S. Kennou, N. Pelekanos, M. Vamvakaki, *Surfaces and Interfaces* **23**, 100949 (2021).

**55. Absorption in ultrathin GaN-based membranes: The role of standing wave effects,**

E. Amargianitakis, R. Jayaprakash, F. G. Kalaitzakis, E. Delamadeleine, E. Monroy, N. T. Pelekanos, *J. Appl. Phys.* **126**, 083109 (2019). (1)

**54. Spatially Selective Reversible Charge Carrier Density Tuning in WS<sub>2</sub> Monolayers via Photochlorination,**

I. Demeridou, I. Paradisanos, C. L. Yuanyue, N. Pliatsikas, P. Patsalas, S. Germanis, N. T. Pelekanos, W. Goddard, G. Kioseoglou, E. Stratakis, *2D Materials* **6**, 015003 (2019). (2)

**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). (9)

**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). (3)

**51. Room temperature observation of biexcitons in exfoliated WS<sub>2</sub> monolayers,**

I. Paradisanos, S. Germanis, N. T. Pelekanos, C. Fotakis, E. Kymakis, G. Kioseoglou, E. Stratakis, *Applied Physics Letters* **110**, 193102 (2017). (30)

**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. Stavrinidis, G. Konstantinidis, N. Florini, J. Kioseoglou, G. P. Dimitrakopoulos, Th. Kehagias, Z. Hatzopoulos, N.T. Pelekanos, *Phys. Rev. Applied* **6**, 014004 (2016). (5)

- 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). (15)
- 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). (4)
- 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). (7)
- 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). (11)
- 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). (36)
- 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). (43)
- 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). (9)
- 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). (30)
- 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). (25)
- 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). (20)
- 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*. (36)
- 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). (10)
- 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). (178)

**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). (13)

**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). (3)

**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/Al<sub>2</sub>O<sub>3</sub> heterostructures,**

A.G. Kontos, Y.S. Raptis, N.T. Pelekanos, A. Georgakilas, E. Bellet-Amalric, D. Jalabert, *Phys. Rev. B* **72**, 155336 (2005). (47)

**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. Adelmann, E. Martinez-Guerrero, R. André, B. Daudin, Le Si Dang, H. Mariette, *Phys. Rev. B* **68**, 035312 (2003). (156)

**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). (9)

**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. Adelmann, F. Chabuel, J. Simon, N.T. Pelekanos, G. Feuillet, B. Daudin, H. Mariette, *Appl. Phys. Lett.* **77**, 809 (2000) (78)

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

C. Adelmann, J. Simon, G. Feuillet, N.T. Pelekanos, B. Daudin, G. Fishman, *Appl. Phys. Lett.* **76**, 1570 (2000). (133)

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

J. Simon, R. Langer, A. Barski, N.T. Pelekanos, *Phys. Rev. B* **61**, 7211 (2000). (49)

**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). (76)

**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). (185)

**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). (66)

**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). (263)

**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). (149)

**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). (206)

**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). (12)

**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  $\mu\text{m}$ ,**  
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). (42)

**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). (23)

**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). (46)

**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). (35)

**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). (190)

**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). (98)

**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). (37)

**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). (31)

**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). (104)

## 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 l'Académie des Sciences de Paris, special issue on Wide Gap Semiconductors, t. 1, Série IV, p.61-69, (2000). (13)

## CONFERENCE PAPERS in PEER-REVIEWED JOURNALS:

**64. Transferrable dielectric DBR membranes for versatile GaN-based polariton and VCSEL technology,**

E. A. Amargianitakis, S. Kazazis, G. Doundoulakis, G. Stavrinidis, G. Konstantinidis, E. Delamadeleine, E. Monroy, N. T. Pelekanos, Micro & Nano Engineering 2019, Rhodes, Microelectronic Engineering **228**, 111276 (2020). (1)

**\*63. Improved GaN quantum well microcavities for robust room temperature polaritons,**

E. A. Amargianitakis, F. Mizziou, M. Androulidaki, K. Tsagaraki, A. Kostopoulos, G. Konstantinidis, E. Delamadeleine, E. Monroy, N. T. Pelekanos, International Conference on Physics of Semiconductors 2018, Montpellier, Phys. Status Solidi B **256**, 1800716 (2019). (2)

**62. 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**, 1700409 (2018).

**61. 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, Journal of the Mechanical Behavior of Materials **26**, 1–8 (2017).

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

Th. Kehagias, N. Florini, J. Kioseoglou, Th. Pavludis, 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). (4)

**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). (5)

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

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**\*9. Strong room temperature exciton absorption and electroabsorption in CdTe/(Cd,Zn)Te quantum wells, at near-IR wavelengths,**

H. Haas, N. Magnea, H. Mariette, N. T. Pelekanos, Technical Digest of Quantum Electronics and Laser Science Conference, QELS'93 Baltimore, 191 (1993).

**8. Molecular beam epitaxy of Zn<sub>1-x</sub>Cd<sub>x</sub>Se/ZnSe heterostructures and their optical properties,**

H. Luo, N. Samarth, J.K. Furdyna, H. Jeon, J. Ding, N. Pelekanos, A.V. Nurmikko, Mat. Res. Soc. Symp. Proc. **228**, 301 (1992). (3)

**7. Room temperature exciton absorption and reduced exciton-phonon interaction in ZnSe-based quantum wells at blue wavelengths,**

N. Pelekanos, J. Ding, A. V. Nurmikko, H. Luo, N. Samarth, J. Furdyna, Technical Digest of Quantum Electronics and Laser Science Conference, QELS'91 Baltimore, (1991).

**6. Room temperature exciton absorption, excitonic nonlinearities and exciton-phonon interaction in (Zn,Cd)Se/ZnSe quantum wells,**

N. Pelekanos, J. Ding, A. V. Nurmikko, H. Luo, N. Samarth, J. K. Furdyna, Proc. Quantum Optoelectronics '91 Salt Lake City, (1991). (1)

**\*5. Formation of heterojunction bandoffsets: isoelectronic viewpoint in ZnSe:Te quantum wells,**

Q. Fu, J. Ding, N. Pelekanos, W. Walecki, A. V. Nurmikko, S. Durbin, J. Han, M. Kobayashi, R. L. Gunshor, Proc. 20th Int. Conf. Phys. Semiconductors, Thessaloniki, World Publishing, 1353 (1990). (1)

**\*4. Hot exciton luminescence in ZnTe/MnTe quantum wells,**

N. Pelekanos, Q. Fu, J. Ding, A. V. Nurmikko, M. Kobayashi, S. Durbin, J. Han, R.L. Gunshor, Proc. 20th Int. Conf. Phys. Semiconductors, Thessaloniki, World Publishing, (1990). (1)

**\*3. Strong electronic confinement in CdTe single quantum wells; excitonic emission from infrared to blue,**

J. Ding, N. Pelekanos, Q. Fu, W. Walecki, A. V. Nurmikko, J. Han, S. Durbin, M. Kobayashi, R.L. Gunshor, Proc. 20th Int. Conf. Phys. Semiconductors, Thessaloniki, World Publishing, 1198 (1990). (1)

**2. Hot exciton luminescence in ZnTe/MnTe quantum wells,**

N. Pelekanos, J. Ding, Q. Fu, A. V. Nurmikko, M. Kobayashi, R.L. Gunshor, Technical Digest of International Quantum Electronics Conference, IQEC'90 Anaheim, (1990).

**1. Radiative recombination in CdTe/MnTe quantum wells; emission from near infrared to blue wavelengths,**

J. Ding, N. Pelekanos, Q. Fu, A.V. Nurmikko, S. Durbin, J. Han, M. Kobayashi, R.L. Gunshor, Technical Digest of International Quantum Electronics Conference, IQEC'90 Anaheim, (1990).

## CITATIONS:

On December 2020, the total number of citations was about 3150, according to ISI Web of Science.

## HIRSCH FACTOR ANALYSIS: <H>=28 (December 2020)

Specifically, using ISI Web of Science numbers:

1. F. Widmann et al., Phys. Rev. B. Rapid Comm. **58**, R15989 (1998). (263)
2. F. Widmann et al., J. Appl. Phys. **83**, 7618 (1998). (206)
3. N. T. Pelekanos et al., Phys. Rev. B **45**, 6037 (1992). (190)
4. R. Langer et al., Appl. Phys. Lett. **74**, 3827 (1999). (185)

5. S. Tsintzos et al., Nature **453**, 372 (2008). (178)
6. J. Simon et al., Phys. Rev. B **68**, 035312 (2003). (156)
7. F. Widmann et al., Appl. Phys. Lett. **73**, 2642 (1998). (149)
8. C. Adelmann et al., Appl. Phys. Lett. **76**, 1570 (2000). (133)
9. S. M. Durbin et al., Appl. Phys. Lett. **55**, 2087 (1989). (104)
10. J. Ding et al., Appl. Phys. Lett. **57**, 2885 (1990). (98)
11. E. Martinez-Guerrero et al, Appl. Phys. Lett. **77**, 809 (2000). (78)
12. J.L. Rouvière et al, Appl. Phys. Lett. **75**, 2632 (1999). (76)
13. R. Langer et al., Appl. Phys. Lett. **74**, 3610 (1999). (66)
14. J. Simon et al, Phys. Rev. B **61**, 7211 (2000). (49)
15. A.G. Kontos et al., Phys. Rev. B **72**, 155336 (2005). (47)
16. S. Haacke et al., Phys. Rev. B **47**, Rapid Comm., 16643 (1993). (46)
17. K. Daskalakis et al., Appl. Phys. Lett. **102**, 101113 (2013). (43)
18. E. J. Mayer et al, Phys. Rev. B **51**, Rapid Comm., 17263 (1995). (42)
19. E. Iliopoulos et al., phys. stat. sol. (a) **203**, 102 (2006). (41)
20. N. Pelekanos et al., Phys. Rev. B **43**, Rapid Comm., 9354 (1991). (37)
21. M. Hocevar et al., Appl. Phys. Lett. **102**, 191103 (2013). (36)
22. S. Tsintzos et al., Appl. Phys. Lett. **94**, 071109 (2009). (36)
23. N. T. Pelekanos et al., Appl. Phys. Lett. **61**, 3154 (1992). (35)
24. N. Pelekanos et al., Phys. Rev. B **41**, 9966 (1990). (31)
25. I. Paradisanos et al., Appl. Phys. Lett. **110**, 193102 (2017). (30)
26. G. Christmann et al., Phys. Rev. B **82**, 113308 (2010). (30)
27. M. Androulidaki et al., phys. stat. sol. (c) **3**, 1866 (2006). (30)
28. F. Widmann et al., Microelectronics J. **30**, 353 (1999). (29)
29. E. Dimakis et al., J. Cryst. Growth **251**, 476 (2003). (27)
30. B. Daudin et al., phys. stat. sol. (a) **176**, 621 (1999). (27)
31. M. Himmerlich et al., ACS Appl. Mat. & Interf. **1**, 1451 (2009). (25)
32. B. Daudin et al., Jpn. J. Appl. Phys. **40**, 1892 (2001). (23)

## INVITED TALKS in WORKSHOPS/CONFERENCES:

**18. Ultra-low threshold GaN polariton lasing in a zero dimensional trap,**  
E-MRS 2016, Fall meeting, Warsaw, September 2016.

**17. Νανοφωτονική με ημιαγωγικές νανοδομές,**  
1<sup>st</sup> Hellenic Workshop on Photonics, Athens, May 2016.

**16. Ultra-low threshold GaN polariton lasing at room temperature,**  
31<sup>st</sup> Panhellenic Conference on Solid-State Physics and Materials Science, Thessaloniki, September 2015.

**15. Piezoelectric effect for improved semiconductor optoelectronics: from laser diodes and single photon emitters to solar cells,**  
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 nitrures,**

N.T. Pelekanos, Ecole Thématique du CNRS sur les Nitrures d'Éléments 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:

**15. Highly uniform GaAs/InGaAs core-shell nanowire arrays for photovoltaic applications,**

Helmholtz-Zentrum Rosendorf-Dresden, January 2018.

**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 "Demokritos" 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 108,572 € 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:

-Coordination of EDBM103 project entitled "*Nanophotonic semiconductor sources of single and entangled photons*", funded by the Greek government (2020-2021). Budget 37,000 €.

-Supervision of Doctoral Fellowship of E. Amargianitakis funded by the Stavros Niarhos Foundation, entitled "*Entangled photons in GaN Polariton Lasers*" (2019-2020). Budget 9,000 €.

-Coordination of RIS3Crete project "NANOTANDEM" funded by the Region of Crete, on "*High performance Perovskite/III-V semiconductor Nanostructure Tandem Solar Cells*" (2019-2022). Budget 212,500 €.

-Participation in Infrastructures project "INNOVATION-EL", co-financed by Greece and the European Regional Development Fund (2018-2021). Budget 25,875 €.

-Supervision of Doctoral Fellowship of G. Thyris funded by the Stavros Niarhos Foundation, entitled "*High temperature single photon emitters based on InAs piezoelectric quantum dots*" (2018-2019). Budget 11,500 €.

-Participation in KRHPIS II project "AENAO", co-financed by Greece and the European Regional Development Fund on "*Materials and Processes for Energy and Environment Applications*" (2017-2020). Budget 16,000 €.

-Supervision of Doctoral Fellowship of E. Amargianitakis funded by the Hellenic Foundation for Research and Innovation, entitled "*Nitride Polariton Lasers*" (2017-2019). Budget 23,400 €.

-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 "*Introduction in Semiconductors and Microelectronic/Optoelectronic Devices*" in the 2<sup>nd</sup> year of the undergraduate program of the Materials Science and Technology Department of Univ. of Crete (spring semester 2020).

-Course on "*Electromagnetism and Optics*" in the 3<sup>rd</sup> year of the undergraduate program of the Materials Science and Technology Department of Univ. of Crete (fall semester 2003-2018).

-Course on "*Principles of Semiconductor Physics*" in the 4<sup>th</sup> year of the undergraduate program of the Materials Science and Technology Department of Univ. of Crete (spring semester 2009-2018, fall semester 2019).

-Course on "*Semiconductor Optoelectronic Devices*" in the Microelectronics/Optoelectronics Master programs of the Physics Department and the Materials Science and Technology Department of Univ. of Crete (spring semesters 2002-2018, fall semester 2019).

- Course on “*Optoelectronics and Laser*” in the 4<sup>th</sup> 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 4<sup>th</sup> 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 2<sup>nd</sup> 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:**

13. **C. Siaitanidou**, on “*GaN polariton structures as sources of entangled photons*”, Materials Science, University of Crete (9/2020-).
12. **E. Manidakis**, on “*Innovative semiconductor double-junction photovoltaic devices*”, Materials Science, University of Crete (10/2018-).
11. **N. Chatzarakis**, on “*Single-Photon and Entangled-Photon Nanophotonic Sources Based on Innovative Semiconductor-Nanostructures*”, Materials Science, University of Crete (9/2018-).
10. **E. Amargianitakis**, on “*Nitride polariton lasers*”, Materials Science, University of Crete (4/2016-12/2020).
9. **G. Dialynas**, on “*Experimental and theoretical investigation of structural and optical properties of InAs quantum dots grown on (211)GaAs substrate*”, Physics, University of Crete (2004-2020, including a 10 year long interruption of studies due to employment in secondary education).
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 quantum emitters based on dark states and 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. Kalaitzakis**, 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:**

12. **C. Saitanidou**, on “*Towards two-dimensional GaN*”, Physics, University of Crete (2019-2020).
11. **E. Darivianaki**, on «*Hybrid nanowire/perovskite solar cells*», Materials Science, University of Crete (2018-2019).
10. **E. Manidakis**, on “*Nanowire core-shell heterostructures for photovoltaic applications*”, Materials Science, University of Crete (2017-2018).
9. **F. Miziou**, on “*Nitride microcavities for polariton devices*”, Physics, University of Crete (2016-2018).
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. Kalaitzakis**, 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 34<sup>th</sup> International Conference of the Physics of Semiconductors, held in Montpellier, France, July 2018.

-Chairman of the 30<sup>th</sup> 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 13<sup>th</sup> 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 multiple EC-funded projects (2006-2015), such as for instance in Integrated project ZODIAC on quantum dot lasers.
- Evaluation Expert for EC-proposals such as SEE-Eranet 2007, IST-2.5.1 “Photonic Components” 2005, IST-FET 2005, INTAS 2004 and 2003. Also, evaluated proposals for French (ANR) and Israeli (ISF) funding agencies.
- Reviewer/evaluator in several Greek-funded projects/proposals, such as for instance 2019 Metadidaktories, 2018 IKY, and 2017 ΕΔΒΜ34.

## REVIEWING:

- Referee for Phys. Rev. Lett., Scientific Reports, ACS Photonics, Phys. Rev. B, Phys. Rev. Applied, Appl. Phys. Lett., J. Appl. Phys, phys. Stat. sol., Nanoscale Research Letters, Microelectronic Engineering.

## OTHER:

- Ph.D defense committee of **Perrakis Georgios**, University of Crete, April 2021, with thesis title: “Photonic approaches for the thermal control of photovoltaics”.
- Ph.D defense committee of **Demeridou Ioanna**, University of Crete, March 2021, with thesis title: “Pulsed Laser Induced Doping of Two-Dimensional Crystals”.
- Ph.D defense committee of **Florini Nikoletta**, Aristotelian University of Thessaloniki, January 2021, with thesis title: “Study of structure and mechanical behavior of low-dimensional III-V semiconductor heterostructures”.
- Ph.D defense committee of **Doundoulakis George**, University of Crete, November 2019, with thesis title: “Realization and physical analysis of field-effect transistors based on GaN nanofins and vertical nanowires”.
- Ph.D defense committee of **Gagaoudakis Emmanuel**, University of Crete, November 2019, with thesis title: “Study of thermo-chromic materials with low growth temperature based on the vanadium oxide (VO<sub>2</sub>)”.
- Ph.D advisory committee of **Paschos Ioannis**, University of Crete, April 2019, with thesis title: “Development of prototype polaritonic devices exploiting the macroscopic bosonic properties of polaritons in semiconductor microcavities”.
- Ph.D defense committee of **Tzimis Alexandros**, University of Crete, March 2019, with thesis title: “Study of parabolic quantum well microcavities and terahertz time domain spectroscopy in the bosonic cascade regime”.
- Ph.D defense committee of **Savvas Eftychis**, University of Crete, December 2018, with thesis title: “Spontaneous and selective growth of GaN nanowires on Si (111) substrates by molecular beam epitaxy”.
- Ph.D defense committee of **Kyriaki Savva**, University of Crete, July 2018, with thesis title: “Laser assisted development of Graphene and Transition Metal Dichalcogenide nanomaterials”.

- Ph.D defense committee of **George Kakavelakis**, University of Crete, May 2018, with thesis title: “Advanced interface engineering for solution-processable photovoltaics”.
- Ph.D defense committee of **Ioannis Paradisanos**, University of Crete, March 2018, with thesis title: “Excitons in atomically thin tungsten disulfide (WS<sub>2</sub>) layers”.
- 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”.
- 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”.
- Ph.D advisory committee of **E. Trichas**, University of Crete, December 2010, with thesis title: “Strong light-matter coupling in GaN microcavities”.
- 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”.
- Ph.D advisory committee of **Z. Viskadourakis**, University of Crete, June 2009, with thesis title: “Metal Oxides for Magnetotransport and Thermoelectric Applications”.
- 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)”.
- 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 micromètre”.
- 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.