

# Eleferios Lidorikis, B.Sc., Ph.D., Assoc. Professor

## CURRICULUM VITAE

### I. Personal Information

*Name:* Eleferios Lidorikis  
*Date of Birth:* August 31<sup>th</sup>, 1969  
*Address:* Department of Materials Science and Engineering,  
University of Ioannina, GR-45110 Ioannina, Greece  
*Phone numbers:* +30-26510-07146 (office)  
*Current Professional Position:* Associate Professor of Computational Materials Science,  
University of Ioannina (Uoi), Greece  
*e-mail:* [elidorik@cc.uoi.gr](mailto:elidorik@cc.uoi.gr)  
*web:* [cmsl.materials.uoi.gr/lidorikis](http://cmsl.materials.uoi.gr/lidorikis)



### II. Education

9/1994 – 9/1999 Ph.D. in Condensed Matter Physics (honours), Iowa State University, USA  
10/1987 – 9/1993 B.Sc. in Physics, Aristotle University of Thessaloniki, Greece

### III. Research Interests and Activities

- Computational nanophotonics, plasmonics, photonic crystals, effective medium theory.
- Enhanced light harvesting, photodetection, spectroscopy and biodetection based on plasmonic nanostructures, carbon nanotube arrays, graphene.

### IV. Awards

5/2000 Iowa State University, Department of Physics and Astronomy, Research Excellence award.  
12/1999 Iowa State University, Graduate College, Research Excellence award.

### V. Employment History

9/2012- Associate Professor (tenured), University of Ioannina  
9/2009-9/2012 Assistant Professor (tenured), University of Ioannina  
3/2006-9/2009 Assistant Professor (tenure track), University of Ioannina  
1/2004-2/2006 Computational and Design Engineer, Luminus Devices Inc., Woburn, MA, USA  
11/2001-12/2004 Postdoctoral Research Fellow, RLE and Department of Physics,  
Massachusetts Institute of Technology, MA, USA  
9/1999-10/2001 Postdoctoral Research Associate, Department of Physics & Astronomy,  
Louisiana State University, LA, USA  
1/1996-8/1999 Research Assistant, Ames Laboratory-U.S. DOE and Department of Physics  
and Astronomy, Iowa State University, IA, USA  
10/1997-1/1998 Intern, Schlumberger Oil-Field Services, Houston, TX, USA  
9/1994-12/1995 Teaching Assistant, Department of Physics and Astronomy, Iowa State  
University, IA, USA

### VI. Teaching Activities

- >8 years (7 in University of Ioannina + 1.5 in Iowa State University) of teaching experience in physics and engineering. Courses included: Computer Programming I, Computer Programming II, Introduction to Materials Science, Quantum Theory of Matter, Photonic Materials (graduate level), Physics Laboratory, Introduction to Physics II.
- Author of lecture notes for Photonic Materials, co-author for Computer Programming I, Computer Programming II.
- Supervisor of: 4 Ph.D. students, 2 Postdocs

## VII. External Funding

Program	Period	Role	Title	Uoi budget
Greece: GSRT-NSRF Heracleitus II	2011-14	Coordinator	Computational study, design and applications of nanocomposite metalodielectric photonic materials	45k€
EU: FP7-NMP-2012-LARGE-6	2013-16	Partner coordinator	SMARTONICS: Development of smart machines, tools and processes for the precision synthesis of nanomaterials with tailored properties for Organic Electronics	440k€
EU: FP7-ICT-2013-FET-F	2013-16	Partner coordinator	GRAPHENE FLAGSHIP: Graphene-driven revolutions in ICT and beyond	330k€
Greece: GSRT-NSRF Synergasia 11	2013-15	Partner coordinator	NANO-HYBRID: Multifunctional NANOcoatings with HYBRID organic-inorganic interfaces	212k€
Greece: GSRT-NSRF Synergasia 11	2013-15	Partner coordinator	STSSoC: Surface treatment of multicrystalline silicon solar cells for improved efficiency	62k€

## VIII. Scientific Software Development and Computational Experience

2008-	Interpretation and Analysis software "REFL" for Optical Reflectance Spectroscopy measurements (while at Uoi)
2005-	Software "PhlatLab" for RGB module design (application driven) and spec generation of High-Power LEDs PhlatLight™ (while at Luminus Devices Inc.)
2004-	Operating Software for an Integrating Sphere (while at Luminus Devices Inc)
2002-	Scalable Finite-Difference-Time-Domain (FDTD) code for exact 3D simulations of light propagation in realistic material systems (includes material dispersion, nonlinearity, absorption, gain, fluorescence, saturation effects etc). Parallelized through domain decomposition using MPI (while at MIT)
2000-	Scalable Finite Element and Molecular Dynamics codes, coupled together for 3D Continuum-Atomistic Multiscale Materials simulatations. Parallelized through both task and domain decomposition using MPI (while at LSU)
1998-	Plane Wave Expansion code for 2D Photonic Band Structure calculation (while at ISU)
1997-	Analysis software for the RAB tools (Resistivity-At-the-Bit: resistivity-measuring tools used during oil drilling): equivalent circuit model for measurement characterization, data inversion, graphical interpretation (while at Schlumberger).

## IX. Senior level administration

- Participated or chaired 5 administration committees within the Department and the University, regarding research, educational and infrastructure planning.
- Participated in numerous evaluation boards for recruitment of academic personnel, in two of which as principal evaluator.

## X. Publications, Patents and Conferences Summary

Publications in peer-reviewed journals:	42
Publications in peer-reviewed proceedings volumes:	6
Book chapters:	1
Issued Patents (US):	17
Pending Patent Applications (UK):	2
International conference participations/presentations:	>30
Member in Journal Editorial Boards:	1
Citations (source: Web of Science, 16/1/2014):	>1750 (h-index=21)
Conference Organizer:	5

**XI. Recent publications**

1. H. Zoubos, L.E. Koutsokeras, D.F. Anagnostopoulos, E. Lidorikis, S.A. Kalogirou, A.R. Wildes, P.C. Kelires, P. Patsalas, "Broadband optical absorption of amorphous carbon/Ag nanocomposite films and its potential for solar harvesting applications", *Solar Energy Mater. Sol. Cells* 117, 350-356 (2013).
2. P. Klar, E. Lidorikis, A. Eckmann, I.A. Verzhbitskiy, A.C. Ferrari, C. Casiraghi, "Raman scattering efficiency of graphene", *Phys. Rev. B* 87, 205435 (2013).
3. R. Mary, G. Brown, S.J. Beecher, F. Torrisi, S. Milana, D. Popa, T. Hasan, Z.P. Sun, E. Lidorikis, S. Ohara, A.C. Ferrari, A.K. Kar, "1.5 GHz picosecond pulse generation from a monolithic waveguide laser with a graphene-film saturable output coupler", *Opt. Express* 21, 7943-7950 (2013).
4. C.L. Chochos, A. Avgeropoulos and E. Lidorikis, "Theoretical study of phenyl-substituted indacenodithiophene copolymers for high performance organic photovoltaics", **J. Chem. Phys.** 138, 064901 (2013).
5. E. Lidorikis, "Modeling of Enhanced Absorption and Raman Scattering Caused by Plasmonic Nanoparticle Near Fields", **J. Quant. Spectr. Rad. Transf.** 113, 303-314 (2012).
6. Siozios, D.C. Koutsogeorgis, E. Lidorikis, A. Lotsari, G.P. Dimitrakopoulos, H. Zoubos, Ph. Komninou, W. Cranton, C. Kosmidis, P. Patsalas, "Optical Encoding by Plasmon-based Patterning: Inorganic Materials Become Photosensitive", **Nano Letters** 12, 259 (2012).
7. N. Lagos, M.M. Sigalas and E. Lidorikis, "Theory of Plasmonic Near-Field Enhanced Absorption in Solar Cells", **Appl. Phys. Lett.** 99, 063304 (2011).
8. N.T. Panagiotopoulos, G. Karras, E. Lidorikis, D.C. Koutsogeorgis, C. Kosmidis, and P. Patsalas, "Photosensitivity and Optical Performance of Hydrogenated Amorphous Carbon Films Processed by PS Laser Beams", **Surf. Coat. Technol.** 206, 734 (2011).
9. N.T. Panagiotopoulos, P. Patsalas, C. Prouskas, G. Dimitrakopoulos, P. Komninou, T. Karakostas, A.P. Tighe, and E. Lidorikis, "Bare-Eye View at the Nanoscale: a New Visual Interferometric Multi-Indicator (VIMI)", **ACS Appl. Mater. Interfaces** 2, 3052 (2010).
10. F. Schedin, E. Lidorikis, A. Lombardo, V.G. Kravets, A.K. Geim, A. N. Grigorenko, K.S. Novoselov, and A.C. Ferrari, "Surface Enhanced Raman Spectroscopy of Graphene", **ACS Nano** 4, 5617(2010).
11. M. Agrawal, D. Fischer, S. Gupta, N.E. Zafeiropoulos, A. Pich, E. Lidorikis, and M. Stamm, "Three-Dimensional Colloidal Crystal Arrays Exhibiting Stop Band in Near-Infrared Region", **J. Phys. Chem. C** 114, 16389, (2010).
12. E. Lidorikis and A.C. Ferrari, "Photonics with Multi-Wall Carbon Nanotube Arrays", **ACS Nano** 3, 1238 (2009).