Elefterios Lidorikis

Assistant Professor

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PERSONAL INFORMATION

Birthdate: 31 Aug. 1969 **Birthplace:** Hamilton, ON, Canada **Citizenship:** Greek/Canadian **Marital Status:** Married

EDUCATION

- **Ph.D. in Condensed Matter Physics** Iowa State University, Ames, IA, USA, 1994 - 1999
  Thesis Title: Wave Propagation in Periodic, Disordered, and Nonlinear Photonic Band Gap Materials
- **Diploma (B.Sc.) in Physics** Aristotelian University, Thessaloniki, Greece, 1987 - 1993
  Thesis Title: The Aharonov-Bohm Effect with Spin

WORK EXPERIENCE

- **Mar. 2006 – present:** ***Assistant Professor*** Dept. of Materials Science and Engineering, Univ. of Ioannina, Greece.
  1. Nanophotonics: metallo-dielectric structures and coatings, carbon nanotubes and graphene, photonic crystals, effective medium theory
  2. Multiscale atomistic-continuum methodologies in materials science
- **Jan. 2003 – Mar. 2006:** ***Computational Scientist*** Luminus Devices Inc., Woburn, Massachusetts
  1. Design (optical, electrical, thermal and application level) of the high-power photonic-crystal LED PhlatLight^{TM}.
- **Nov. 2001 – Dec. 2004:** ***Postdoctoral Research Fellow*** Research Laboratory for Electronics and Department of Physics, Massachusetts Institute of Technology
  1. Photonic metallo-dielectric and polaritonic nanostructures, effective medium response.
  2. All-optical nanophotonic devices (both in-chip and in-fiber), such as waveguide bends, splitters, channel-drops, frequency modulators, optical switches - nonlinear 3D photonic crystals.
- **Sep. 1999 – Oct. 2001:** ***Postdoctoral Research Associate*** Concurrent Computing Laboratory for Materials Simulations, Biological Computation and Visualization Center, and Department of Physics & Astronomy, Louisiana State University
  1. Methodology of multiscale atomistic-continuum materials simulations.
  2. Strain relaxation in heteroepitaxial systems: nucleation and dynamic evolution of interfacial misfit dislocations.
- **Jan. 1996 - Aug. 1999:** ***Research Assistant*** Ames Laboratory-U.S. DOE and Department of Physics and Astronomy, Iowa State University
  1. Theory of photonic crystals: tight-binding formulation; bistability in colloidal suspensions; effects of disorder.
  2. Nonlinear 1D photonic crystals, gap solitons and bistability, all-optical logical devices.
- **Oct. 1997 - Jan. 1998:** ***Intern*** Formation Evaluation-SPC, Schlumberger Oil-Field Services, Houston, Texas
  1. Equivalent circuit model for the RAB tools' response (resistivity-measuring tools used during oil drilling): measurement characterization; data inversion; graphical interpretation.
- **Jun-Jul 1996:** ***Visiting Researcher*** Institute of Electronic Structure & Lasers, Research Center of Crete-FORTH, Greece
  1. Application of a tight-binding model to the classical wave scattering problem in photonic crystals.

TEACHING

- **Sep. 2006 – present:** ***Assistant Professor*** Dept. of Materials Science and Engineering, University of Ioannina, Greece
  Introduction to Materials Science and Technology (3rd sem.), Photonic Materials (9th sem.), Computers II (2nd sem.), Computers I (1st sem.), Quantum Theory (4th sem.).
- **Jan. 2000 – May 2000:** ***Teaching Assistant*** Department of Physics and Astronomy, Louisiana State University
  Seminars for the Finite Element Method for the class "Computational Physics" (Physics 7412).
- **Jan.1999 – May 1999:** ***Teaching Assistant*** Department of Physics and Astronomy, Iowa State University.
  Grading for the graduate course "Advanced Quantum Mechanics" (Physics 681).
- **Jan.1994 – Dec 1995:** ***Teaching Assistant*** Department of Physics and Astronomy, Iowa State University.
  Recitation classes for the undergraduate course "Introduction to Classical Physics II" (Physics 222).
- **Aug. 1994 - Dec. 1994:** ***Teaching Assistant*** Department of Physics and Astronomy, Iowa State University
  General Physics Laboratory course (Physics 112 Lab).

AWARDS

- **May 2000: Iowa State University** Department of Physics and Astronomy *Research Excellence* award.
- **December 1999: Iowa State University** Graduate College *Research Excellence* award.

GRANTS: PRINCIPAL INVESTIGATOR

- **Feb. 2011-Jan.2014: Greek Ministry of Education, Program Hrakleitos II** Project No: 10.74.11.01/107 "*Computational Study, design and Applications of Metal-Dielectric Nanocomposite Photonic Materials*" (€45000)

GRANTS: PARTICIPATION

- **Dec. 2007-May 2009: Participation in European Space Agency** Contract No: 21071//07/NL/PA, "*NACOSA*: *Nanostructured Coatings for Space Applications"*
- **May 2003: Part of team that secured Equity Investment (~$5M)** for Luminus Devices.

SOFTWARE DEVELOPMENT

- Interpretation and Analysis software for Optical Reflectivity Spectroscopy measurements (2008-UOI)
- Simulation and Application level design software for arrays of High-Power LEDs PhlatLight^{TM} (2005-LDI)
- Operating Software for **Integrating Sphere** (2004-LDI)
- Scalable **Finite-Difference-Time-Domain** 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 (2002-MIT)
- 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 (2000-LSU)
- **Plane Wave Expansion** code for 2D Photonic Band Structure calculation (1998-ISU)

PUBLICATIONS

- N. Lagos, M.M. Sigalas and E. Lidorikis, "Theory of Plasmonic Near-Field Enhanced Absorption in Solar Cells", **Appl. Phys. Lett.** 99, 063304 (2011).
- 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", IN PRESS, Surf. Coat. Technol.
- 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).
- 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).
- 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).
- E. Lidorikis and A.C. Ferrari, "Photonics with Multi-Wall Carbon Nanotube Arrays", **ACS Nano** 3, 1238 (2009).
- C. Casiraghi, A. Hartschuh, E. Lidorikis, H. Qian, H. Harutyunyan, T. Gokus, K. S. Novoselov, and A. C. Ferrari, "*Rayleigh Imaging of Graphene and Graphene Layers*", **Nano Lett.** 7, 2711 (2007).
- E. Lidorikis, S. Egusa, and J.D. Joannopoulos, "*Effective Medium Properties and Photonic Crystal Superstructures of Metallic Nanoparticle Array*s", **J. Appl. Phys.** 101, 054304 (2007).
- P. Bermel, E. Lidorikis, Y. Fink, and J.D. Joannopoulos, "*Active Materials Embedded in Photonic Crystals and Coupled to Electromagnetic Radiation*", **Phys. Rev. B** 73, 165125 (2006).
- E. Lidorikis, M.E. Bachlechner, R.K. Kalia, A. Nakano, and P. Vashishta, "*Coupling Atomistic and Continuum Length Scales in Heteroepitaxial Systems: Multiscale Molecular Dynamics/Finite/Element Simulations of Strain Relaxation in Si/Si_3N_4nanopixels*", **Phys. Rev. B** 72, 115338 (2005).
- D.L.C. Chan, E. Lidorikis, and J.D. Joannopoulos, "*Point Defect Geometries in Inverted Opal Photonic Crystals*", **Phys. Rev. E** 71, 056602 (2005).
- A. Karalis, E. Lidorikis, M. Ibanescu, J.D. Loannopoulos, and M. Soljacic, "*Surface-Plasmon-Assisted Guiding of Broadband Slow and Subwavelength Light in Air*", **Phys. Rev. Lett.** 95, 063901 (2005).
- M. Soljacic, E. Lidorikis, J.D. Joannopoulos, and L.V. Hau, "*Ultralow-power All-Optical Switching*", **Appl. Phys. Lett.** 86, 171101 (2005).

- M. Soljacic, E. Lidorikis, L.V. Hau, and J.D. Joannopoulos, "*Enhancement of Microcavity Lifetimes Using Highly Dispersive Materials*", **Phys. Rev. E.** 71, 026602 (2005).
- D. Roundy, E. Lidorikis, and J.D. Joannopoulos, "*Polarization-Selective Waveguide Bends in a Photonic Crystal Structure with Layered Square Symmetry*", **J. of Appl. Phys**. 96, 7750 (2004).
- K. C. Huang, E. Lidorikis, X. Jiang, J.D. Joannopoulos, K.A. Nelson, P. Bienstman, and S. Fan, "*Nature of lossy Bloch states in polaritonic photonic crystals*", **Phys. Rev. B** 69, 195111 (2004).
- Minghao Qi, E. Lidorikis, P.T. Rakich, S.G. Johnson, J.D. Joannopoulos, and H. I. Smith, " *A three-dimensional optical photonic crystal with designed point defects*", **Nature** 429, 6991 (2004).
- M. L. Povinelli, S. G. Johnson, E. Lidorikis, J. D. Joannopoulos, and M. Soljacic, "*Effect of a photonic-band gap on scattering from waveguide disorder"*, **Appl. Phys. Lett**. 84, 3639 (2004).
- M. Soljacic, E. Lidorikis, M. Ibanescu, S.G. Johnson, J.D. Joannopoulos and Y. Fink, "*Optical Bistability and Cutoff Solitons in Photonic Band Gap Fibers"*, **Optics Express** 12, 1518 (2004).
- E. Lidorikis, M. Soljacic, M. Ibanescu, Y. Fink, and J. D. Joannopoulos, *"Cutoff Solitons in Axially Uniform Systems"*, **Opt. Lett**. 29, 851 (2004).
- M.L. Povinelli, R.E. Bryant, S.G. Johnson, S. Fan, A.A. Erchak, G.S. Petrich, E. Lidorikis, J.D. Joannopoulos, L.A. Kolodziejski, and E.P. Ippen, "*Design of a Nano-Electromechanical, High-Index-Contrast Guided-Wave Optical Switch for Single-Mode Operation at 1.55μm*", **IEEE Photonic Tech. L.** 15, 1207 (2003).
- E. Lidorikis, M. L. Povinelli, S. G. Johnson, and J. D. Joannopoulos, "*Polarization-Independent Linear Waveguides in 3D Photonic Crystals"*, **Phys. Rev. Lett**. 91 023902 (2003).
- S.G. Johnson, P. Bienstman, M.A. Skorobogatiy, M. Ibanescu, E. Lidorikis, and J.D. Joannopoulos, *"Adiabatic theorem and continuous coupled-mode theory for efficient taper transitions in photonic crystals*", **Phys. Rev. E** 66, 066608 (2002)
- C.L. Rountree, R.K. Kalia, E. Lidorikis, A. Nakano, L. Van Brutzel, and P. Vashishta, "*Atomistic aspects of crack propagation in brittle materials: multimillion atom molecular dynamics simulations*", **Annu. Rev. Mater. Res**. 32, 377 (2002).
- E. Lidorikis, M. E. Bachlechner, R. K. Kalia, A. Nakano, P. Vashishta, and G. Z. Voyiadjis, "*Coupling Length Scales for Multiscale Atomistics-Continuum Simulations: Atomistically-Induced Stress Distributions in Si/Si_3N_4 Nanopixels"*, **Phys. Phys. Lett**. 87, 086104 (2001).
- S. Ogata, E. Lidorikis, F. Shimojo, A. Nakano, P. Vashishta, and R. K. Kalia, "*Hybrid finite-element/molecular-dynamics/electronic-density-functional simulation scheme for materials simulations on parallel computers*", **Computer Phys. Commun**. 138, 143 (2001).
- A. Nakano, M. E. Bachlechner, R. K. Kalia, E. Lidorikis, P. Vashishta, G. Z. Voyiadjis, T. J. Campbell, S. Ogata, F. Shimojo, "*Multiscale simulations of nanosystems*", **Computing in Science & Engineering** 3, 56 (2001).
- E. Lidorikis, M. M. Sigalas, E. N. Economou, and C. M. Soukoulis, *"Gap Deformation and Classical Wave Localization in Disordered two-dimensional Photonic Band Gap Materials"*, **Phys. Rev. B** 61, 13458 (2000).
- E. Lidorikis and C. M. Soukoulis, *"Pulse driven switching in one-dimensional nonlinear photonic band gap materials: a numerical study"*, **Phys. Rev. E** 61, 5825 (2000).
- M. Agio, E. Lidorikis, and C. M. Soukoulis, "*Impurity modes in a two-dimensional photonic crystal: coupling efficiency and Q factor"*, **J. Opt. Soc. Am. B** 17, 2037 (2000).
- E. Lidorikis, M. M. Sigalas, E. N. Economou, and C. M. Soukoulis, *"Tight-Binding Parameterization for Photonic Band Gap Materials"*, **Phys. Rev. Lett**. 81, 1405 (1998).
- E. Lidorikis, K. Busch, Qiming Li, C. T. Chan, and C. M. Soukoulis, *"Optical Nonlinear Response of a Single Nonlinear Dielectric Layer Sandwiched Between Two Linear Dielectric Structures"*, **Phys. Rev. B** 56, 15090 (1997).
- E. Lidorikis, Qiming Li, and C. M. Soukoulis, *"Optical Bistability in Colloidal Crystals"*, **Phys. Rev. E** 55, 3613 (1997).
- E. Lidorikis, Qiming Li, and C. M. Soukoulis, *"Wave Propagation in Nonlinear Multilayer Structures"*, **Phys. Rev. B** 54, 10249 (1996).

CONFERENCE PROCEEDINGS

- P.T. Rakich, H. Sotobayashi, J.T. Gopinath, J.W. Sickler, C.W. Wong, S.G. Johnson, M. Qi, E. Lidorikis, H.I. Smith, J.D. Joannopoulos, and E.P. Ippen, "Broadband optical studies of 1-D and 3-D photonic crystals", SPIE 6017, 601702 (2005).
- M. Soljacic, E. Lidorikis, J.D. Joannopoulos, L.V. Hau, M. Segev, K. Steiglitz, and C. Anastassiou, "New windows of opportunity for all-optical information processing: Spatial solitons, EIT in microcavities, etc", SPIE Vol. 5735, 9 (2005)

- M. Soljacic, E. Lidorikis, J.D. Joannopoulos, and L.V. Hau, "Electromagnetically induced transparency in microcavities", SPIE Vol. 5554, 174 (2004).
- E. Lidorikis, M.L. Povinelli, S.G. Johnson, M. Soljacic, M. Ibanescu, Y. Fink, and J.D. Joannopoulos, "Modeling of nano-photonics", SPIE Vol. 5225, 7 (2003).
- E. Lidorikis, M. E. Bachlechner, R. K. Kalia, G. Z. Voyiadjis, A. Nakano, and P. Vashishta, "*Coupling of Length Scales: Hybrid Molecular Dynamics and Finite Element Approach for Multiscale Nanodevice Simulations*", MRS Symposium Proceedings 653, "Multiscale Modeling of Materials-2000", pg. Z9.3.1 (2001).
- E. Lidorikis, K. Busch, Qiming Li, C. T. Chan, and C. M. Soukoulis, "Wave Propagation in Linear and Nonlinear Structures", in the Conference Proceedings: "Fluctuations, Nonlinearity and Disorder", Physica D 113, 346 (1998).

PATENTS

- D.C. Koutsogeorgis, P. Patsalas, E. Lidorikis and W.M. Cranton, "Surface Plasmon Resonance in Thin Films", **UK Patent Application Number 1113643.9. 08 Aug 2011.**
- A.A. Erchak, E. Lidorikis, J.W. Graff, "Electronic device contact structures", **US 7,482,640** (27-1-2009).
- A.A. Erchak, E. Lidorikis, J.W. Graff, "Optical display systems and methods", **US 7,450,311** (11-11-2008).
- A.A. Erchak, E. Lidorikis, M. Lim, N.I. Nemchuk, J.A. Venezia, "Isotropic collimation devices and related methods", **US 7,391,059** (24-6-2008).
- A.A. Erchak, E. Lidorikis, M. Lim, N.I. Nemchuk, J.A. Venezia, "Patchwork patterned devices and related methods", **US 7,388,233** (17-6-2008).
- A.A. Erchak, E. Lidorikis, M. Lim, N.I. Nemchuk, J.A. Venezia, "Anisotropic collimation devices and related methods", **US 7,348,603** (25-3-2008).
- A.A. Erchak, E. Lidorikis, C. Luo, "Light-emitting devices with high light collimation", **US 7,301,271** (27-11-2007).
- A.A. Erchak, E. Lidorikis, J.W. Graff, "Light emitting diode systems", **US 7,274,043** (25-9-2007).
- S. Assefa, R.E. Bryant, A.A. Erchak, S. Fan, E.P. Ippen, J.D. Joannopoulos, S.G. Johnson, L.A. Kolodziejski, E. Lidorikis, G.S. Petrich, M.L. Povinelli, "Nano-electromechanical high-index contrast", **US 7,260,287** (21-8-2007).
- A.A. Erchak, E. Lidorikis, C. Luo, "Light emitting device with patterned surfaces", **US 7,211,831** (1-5-2007).
- A.A. Erchak, M. Lim, E. Lidorikis, J.A. Venezia, M.G. Brown, R.F. Karlicek Jr., "Wavelength-converting light-emitting devices", **US 7,196,354** (27-3-2007).
- E. Lidorikis, M. Soljacic, M. Ibanescu, Y. Fink, and J.D. Joannopoulos, "Gap-Soliton Devices in Photonic Crystal Fibers", **US 7,187,832** (6-3-2007).
- A. Karalis, D. Chan, Y. Fink, K.C. Huang, M. Ibanescu, J.D. Joannopoulos, E. Lidorikis, E. Reed, M. Soljacic, "Surface-plasmon index guided (SPIG) waveguides and surface-plasmon effective index guided (SPEIG) waveguides", **US 7,184,641** (27-2-2007).
- A.A. Erchak, P. Panaccione, R.F. Karlicek Jr., M. Lim, E. Lidorikis, J.A. Venezia, C. Hoepfner, "Packaging designs for LEDs", **US 7,170,100** (30-1-2007).
- A.A. Erchak, E. Lidorikis, C. Luo, "Light emitting devices with improved extraction efficiency", **US 7,166,870** (23-1-2007).
- A.A. Erchak, E. Lidorikis, C. Luo, "Light emitting devices", **US 7,138,666** (21-11-2006).
- A.A. Erchak, E. Lidorikis, J.W. Graff, "Electronic device contact structures", **US 7,105,861** (12-9-2006).
- A.A. Erchak, E. Lidorikis, C. Luo, "Light emitting devices with high light collimation", **US 7,098,589** (29-8-2006).
- E. Lidorikis, S.G. Johnson, M.L. Povinelli, and J.D. Joannopoulos, "Polarization-independent optical networks in 3D photonic crystals", **US 7,058,242** (6-6-2006).
- A.A. Erchak, E. Lidorikis, C. Luo, "Light emitting devices with improved extraction efficiency", **US 6,831,302** (14-12-2004).

CONFERENCES AND WORKSHOPS

- **2011 "8th International Conference on Nanosciences and Nanotechnologies" (NN11)**, Thessaloniki, Greece (12-15 July 2011). Invited Talk: "*Plasmon Enhanced Absorption in Organic Sollar Cells*".
- **2011 "5th International Summer School on Nanosciences and Nanotechnologies" (ISSON11)**, Thessaloniki, Greece (9-16 July 2011). Invited Lecture: "*Plasmonics: Experiments, Theory and Applications*".
- **2011 International Symposium "WavePro: from Electrons to Photonic Crystals and Metamaterials"** (June 8-11 2011, Rethymno, Crete). Contributed Talk: "*Plasmonic Near-Field Enhanced Absorption and Scattering*".
- **2011 Invited Lecture at Department of Engineering, Cambridge University**, 4th Apr. 2011: "*Plasmonics: Theory and Applications*".

- **2011 Invited Lecture at CNR Messina, University of Messina**, 24th March 2011: "*Optical Properties of Carbon-Based Materials*".
- **2010 "XXVI Hellenic Conference on Solid State Physics and Materials Science"**, Ioannina, Greece (26-29 Sept. 2010). Contributed Talk: "Surface Enhanced Raman Spectroscopy of Graphene".
- **2010 "7th International Conference on Nanosciences and Nanotechnologies" (NN10)**, Ouranoupolis, Halkidiki, Greece (11-14 July 2010). Invited Talk: "Graphene and CNT-based Photonics".
- **2009 "2nd Mediterranean Conference on Nanophotonics" (Medi-Nano 2)**, Athens, Greece (October 26-27, 2009). Invited Talk: "Photonics with Carbon".
- **2008 XXIV Hellenic Conference on Solid State Physics and Materials Science**, Crete, Greece, Sept. 21-24 2008. Invited talk: "*Photonics with Carbon: Graphene Visibility and Extreme-UV Photonic Band Gaps from MWNT Arrays*"
- **2007 Invited Lecture (CAPE lecture) at Department of Engineering, Cambridge University**, 5 Oct. 2007: "*Computational nanophotonics: from Photonic Crystals to Surface Plasmons*".
- **2007 EMRS fall meeting, Strasburg France**. Contributed Talk: "*Effective Optical Response of Noble Metal Nanoparticle Arrays: Multilayers and Disorder Effects*", Poster: "*Photonic band gaps from multi-wall carbon nanotubes*"
- **2003 SPIE Annual Meeting on *Nano- and Micro-Optics for Information Systems***, San Diego, CA, Aug. 3-8, 2003, Invited Talk: "*Modeling of nanophotonics*".
- **PECS-IV: International Workshop on Photonic and Electromagnetic Crystal Structures**, Los Angeles, CA, Oct. 28-31, 2002.
- **Beowolf Cluster Building Workshop, MIT**, Cambridge MA, June 29-30, 2002.
- **2001 MRS fall meeting**, Boston MA, Nov. 2001, Symposium N, Poster: "*Spontaneous Order in Lattice-Mismatched Interfaces: Superlattice of Grains in Si/Si_3N_4 Nanopixels*".
- **2001 Mechanics and Materials Summer Conference**, San Diego CA, June 2001 Invited Talk: "*Multiscale Atomistics-Continuum Simulations: Stress Distributions in Si/Si_3N_4 Nanopixels*".
- **2001 APS March Meeting**, Seattle WA, March 2001. Contributed Talk: "*Coupling-of-length-scale approach for multiscale atomistic-continuum simulations: Atomistically-induced stress distributions in Si/Si_3N_4 nanopixels*".
- **2001 Mardi Gras Conference *on Multiscale Simulation, Theoretical, and Experimental Approaches to Deformation Friction Fatigue and Fracture***, Baton Rouge LA, Feb. 2001, Talk*: "Scalable Multiscale Simulations of Nanostructures*".
- **2000 MRS fall meeting**, Boston MA, Nov. 2000 Symposium Z, Contributed Talk: "*Coupling-of-length-scales approach for multiscale simulations of nanodevices*".
- **International Conference on *Multiscale Materials Phenomena in Harsh Environments***, Limassol Cyprus, June 2000 Talk: "*Multiscale Simulations of Electronic Devices*".
- **2000 APS March Meeting**, Minneapolis MN, March 2000. Contributed Talk: "*Gap Deformation and Classical Wave Localization in Disordered two-dimensional Photonic Band Gap Materials*".
- **Condensed Matter Seminar, Dept. of Physics & Astronomy, Iowa State University**, Sept. 9 1999: "*Photonic Band Gap Phenomena*".
- **1999 APS Centennial March Meeting,** Atlanta GA, March 1999. 2 Contributed Talks: "*Tight-Binding Parameterization for Photonic Band Gap Materials*", and, "*Numerical Simulations of Plane and Pulsed Wave Propagation in Nonlinear Photonic Band Gap Materials*".
- **Midwest Solid State Theory Conference**, Ames IA, Oct 23-25 1998. Poster: "*Tight-Binding Parameterization for Photonic Band Gap Materials*".
- **1996 APS March Meeting**, St. Louis MO, March 1996. Poster: "*Optical Properties of Nonlinear Periodic Structures*"
- **Summer School on *Advanced Physics***, University of Crete, Heraklion, Greece, Jun.-Jul. 1992.

CONFERENCE ORGANIZATION

- Local Organizing Committee of the 2012 *GrapHEL* (Graphene Hellas) European Conference/Workshop on the Synthesis, Characterization and Applications of Graphene, Mykonos 27-30 September 2012.
- Co-organizer of the 2001 Mardi Gras Conference on *Multiscale Simulation, Theoretical, and Experimental Approaches to Deformation, Friction, Fatigue, and Fracture*, Baton Rouge LA, Feb. 2001.
- Secretary of the International Conference on *Multiscale Materials Phenomena in Harsh Environments*, Limassol Cyprus, June 2000.

PEER REVIEWING

- **Editorial board:** *ISRN Optics.*
- **Referee:** *PRL, PRB, PRE, PRA, APL, JAP, PLA, JOSAB, Applied Optics, J. Opt. A: Pure App. Opt., Optics Express, Nanostructures and Nanophotonics, Journal of Physics B: Atomic, Molecular and Optical Physics, Materials Science and Engineering B, International Journal of Infrared and Millimeter Waves.*
- **Referee for Research Grants:** *United States-Israel Binational Science Foundation (BSF)*

COMPUTER SKILLS

• UNIX • FORTRAN • C/C++ • MPI • MATLAB •COMSOL MULTIPHYSICS