

Kafesaki Maria - Curriculum Vitae¹

Personal & contact data:

Home address: Panepistimiou 193, 70013 Heraklion, Crete Greece

Work address: Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, N. Plastira 100, 70013 Heraklion, Greece

Tel.: +30 2810 391547

Fax: +30 2810 391569

E-mail: kafesaki@iesl.forth.gr

Personal web-page: <http://esperia.iesl.forth.gr/~kafesaki/>

Group web-pages: <https://www.iesl.forth.gr/en/research/PPM>, <http://esperia.iesl.forth.gr/~ppm/>

Orcid-ID: <http://orcid.org/0000-0002-9524-2576>

Publons (researcher-ID: E-6843-2012): <https://publons.com/researcher/2728672/maria-kafesaki/>

Google scholar: <https://scholar.google.gr/citations?user=gtFssuEAAA&hl=en>

Current position:

Associate Professor at Dept. of Materials Science and Technology, University of Crete, Greece, and Affiliated Researcher at Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology - Hellas (FORTH), Greece.

Education:

February 1997: Ph.D., Physics Department, University of Crete, Greece.

Dissertation title: “Acoustic and elastic wave scattering - Acoustic and elastic wave propagation in disordered media”. **Advisor:** Prof. E.N. Economou.

1992: Master in Physics, University of Crete, Greece.

1990: Diploma, Physics Department, University of Crete, Greece.

Research interests:

Electromagnetic wave propagation in composite media, with emphasis on metamaterials, but also photonic crystals, plasmonic structures, and random dielectric and metalodielectric systems.

Acoustic and elastic wave propagation in composite ordered and disordered media (phononic crystals, random acoustic media).

Professional experience:

- **1/2012 - ... :** Associate Professor at Dept. of Materials Science and Technology, University of Crete, Greece.
- **7/2001 - 12/2011:** Researcher (D, C & B), Institute of Electronic Structure and Laser (IESL), FORTH.
- **7/2000 - 6/2001:** Post-doc, IESL-FORTH.
- **11/2000:** Visiting scientist, Iowa State University, Ames, Iowa, US.
- **5/1999 - 6/2000:** Post-doc, Laboratorio de Fisica de Sistemas Pequeños y Nanotecnologia, Consejo Superior de Investigaciones Científicas (CSIC), Madrid, Spain.
- **2/1997 - 4/1999 and 7/2000 - 12/2001:** Post-doc, IESL-FORTH, Greece.
- **11/1997:** Visiting researcher, University of Lancaster, U.K., Physics Department.
- **1/1998 - 2/1998:** Visiting scientist, Edinburgh Parallel Computing Center, University of Edinburgh, U.K. (for education in parallel programming and the use of high computing systems).

¹Last update October 2022

Research experience: Mainly theoretical and computational experience on

- Classical (electromagnetic, acoustic and elastic) wave single and multiple scattering.
- Classical wave propagation in *random* media, using multiple scattering techniques, effective medium theories and finite difference techniques.
- Electromagnetic, acoustic and elastic wave propagation in *periodic* media, with emphasis on metamaterials (of many different types) but also including photonic crystals, plasmonic crystals and phononic crystals. Large experience in various techniques (development and/or use), like band structure calculation techniques (e.g. plane wave method and multiple scattering method), transmission/reflection calculation techniques (e.g. finite difference time domain method), as well as effective medium determination (e.g. via homogenization or scattering parameters retrieval) techniques.

Distinctions:

- Fellow of the Optical Society of America, 2014.
- Member of the team that achieved the European Union Descartes prize for collaborative research in metamaterials, in 2005.
- Member of the team that achieved the “Key Innovator” award (2020), by EU innovation Radar, for the work in Project “NANOPOLY”, on metamaterials for advancing RF-circuit components.

Summary of research-related activities and records:

Publications: 131 journal papers, 10 book chapters, more than 20 papers in conference proceedings, newsrooms, etc.

Citations number: 8300 according to Web of Science (WoS), October 2022; 12300 according to Goggle scholar.

h-index: 46 (WoS), 53 (Goggle Scholar)

Invited presentations in conferences/schools/institutions: 91

Conferences/schools organization/co-organization: 18 (among them chair or co-chair in 5 international conferences; main organizer in 5 international schools).

Editorial activities: Associate Editor at *EPJ: Applied Metamaterials Journal*; Section Editor at *Journal of the European Optical Society: Rapid Publications*; Advisory Editor at *Papers in Physics Journal*; Guest Editor in 6 Journal Special Issues, related to metamaterials.

Committees: Program committee member in many international conferences; Governing Board Member at the Metamorphose Virtual Institute of Metamaterials; Member of the Optica (former OSA) Adolph Lomb Medal selection committee (2017-2021) and the Charles Hard Townes Award Committee (2022-2024); Advisory Board member of the EPSRC UK Metamaterials Network; Panel member of ERC evaluation committees; Evaluator in EU projects (including ERC) and national projects of Greece, Belgium, France, Hong-Kong.

Participation in funded projects: Participation in 23 funded projects (most of them EU projects), being Prime Investigator or co-Prime Investigator in 10 of them.

Students supervised/co-supervised: 4 PhD students (2 ongoing), 7 Master students, 5 diploma students

Publications:

Journal papers (in chronological order – oldest to newest):

1. M. M. Sigalas, E. N. Economou and M. Kafesaki, *Spectral Gaps for Electromagnetic and Scalar Waves: Possible Explanation for Certain Differences*, Phys. Rev. B **50**, 3393-3396 (1994).
2. M. Kafesaki, E. N. Economou, *Interpretation of the Band Structure Results for Elastic and Acoustic Waves by Analogy with the LCAO Approach*, Phys. Rev. B **52**, 13317-13331 (1995).
3. M. Kafesaki, M. M. Sigalas and E. N. Economou, *Elastic Wave Band Gaps in 3-D Periodic Polymer Matrix Composites*, Sol. State. Commun. **96**, 285-289 (1995).
4. M. Kafesaki, E. N. Economou, *Acoustic Waves in Random Media*, Europhys. Lett. **37**, 7-12 (1997).

5. M. Kafesaki, E. N. Economou, *Acoustic and Elastic Waves in Random Media - CPA*, Ann. Physik (Leipzig) **7**, 383-388 (1998).
6. C. M. Soukoulis, K. Busch, M. Kafesaki and E. N. Economou, *Comment on "Energy Velocity of Diffusing Waves in Strongly Scattering Media"*, Phys. Rev. Lett. **82**, 2000 (1999).
7. M. Kafesaki and E. N. Economou, *Multiple Scattering Theory for 3D Periodic Acoustic Composites*, Phys. Rev. B **60**, 11993-12001 (1999).
8. D. Garcia-Pablos, M. M. Sigalas, F. R. Montero de Espinosa, M. Torres, M. Kafesaki and N. Garcia, *Theory and Experiments on Elastic Band Gaps*, Phys. Rev. Lett. **84**, 4349-4352 (2000).
9. M. Kafesaki, M. M. Sigalas and N. Garcia, *Frequency Modulation in the Transmittivity of Wave Guides in Elastic Band Gap Materials*, Phys. Rev. Lett. **85**, 4044-4047 (2000).
10. M. Kafesaki, R. S. Penciu and E. N. Economou, *Air Bubbles in Water: A Strongly Multiple Scattering Medium for Acoustic Waves*, Phys. Rev. Lett. **84**, 6050-6053 (2000).
11. M. Kafesaki, M. M. Sigalas and N. Garcia, *Wave Guides in Two-Dimensional Elastic Wave Band Gap Materials*, Physica B **296**, 190-193 (2001).
12. A. Talneau, L. Le Gouezigou, N. Bouadma, M. Kafesaki, C. M. Soukoulis, M. Agio, *Photonic-crystal Ultrashort Bends with Improved Transmission and Low Reflection at 1.55 micrometer*, Applied Physics Letters **80**, 547-549 (2002).
13. H. Benisty, S. Olivier, C. Weisbuch, M. Agio, M. Kafesaki, C. M. Soukoulis, M. Qiu, M. Swillo, A. Karlsson, B. Jaskorzynska, *Models and Measurements for the Transmission of Submicron-Width Waveguide Bends Defined in Two-Dimensional Photonic Crystals*, IEEE Journal of Quantum Electronics **38**, 770-785 (2002).
14. R. S. Penciu, M. Kafesaki, G. Fytas, E. N. Economou, W. Steffen, A. Hollingsworth, W. B. Russel, *Phonons in Colloidal Crystals*, Europhysics Letters **58**, 699-704 (2002).
15. M. Kafesaki, M. Agio, C. M. Soukoulis, *Waveguides in Finite-height Two-dimensional Photonic Crystals*, J. Opt. Soc. Am. B **19**, 2232-2240 (2002).
16. P. Kramper, M. Kafesaki, C. M. Soukoulis, A. Birner, F. Mller, U. Gsele, R. B. Wehrspohn, J. Mlynek and V. Sandoghdar, *Near Field Visualization of Light-confinement in a Photonic Crystal Microresonator*, Optics Letters **29**, 174-176 (2004).
17. B. C. Buchler, P. Kramper, M. Kafesaki, C. M. Soukoulis and V. Sandoghdar, *Near-field Optical Investigations of Photonic Crystal Microresonators*, IEICE TRANS. **E85-A**, 1-7 (2004).
18. N. Katsarakis, T. Koschny, M. Kafesaki, E. Economou and C. M. Soukoulis, *Electric Coupling to the Magnetic Resonance of Split-ring Resonators*, Appl. Phys. Lett. **84**, 2943-2945 (2004).
19. A. Talneau, M. Mulo, S. Anand, S. Olivier, M. Kafesaki, M. Agio and C. M. Soukoulis, *Modal Behavior of Single-line Photonic Crystal Guiding Structures on InP Substrates*, Photonics and Nanostructures **2**, 1-10 (2004).
20. T. Koschny, M. Kafesaki, E. Economou and C. M. Soukoulis, *Effective Medium Theory of Left-handed Materials*, Phys. Rev. Lett. **93**, 107402 (2004).
21. M. Kafesaki, C. M. Soukoulis, M. Agio, *Losses and Transmission in Two-dimensional Slab Photonic Crystals*, Journal of Applied Physics **96**, 4033 (2004).
22. N. Katsarakis, T. Koschny, M. Kafesaki, E. Economou, E. Ozbay and C. M. Soukoulis, *Left- and Right-handed Transmission Peaks near the Magnetic Resonance Frequency in Composite Metamaterials*, Phys. Rev. B **70**, 201101 (2004).
23. K. Aydin, K. Guven, M. Kafesaki, L. Zhang, C. M. Soukoulis, E. Ozbay, *Experimental Observation of True Left-handed Transmission Peaks in Metamaterials*, Opt. Lett. **29**, 2623-2625 (2004).
24. M. Kafesaki, T. Koschny, R. S. Penciu, T. F. Gundogdu, E. N. Economou and C. M. Soukoulis, *Left-handed Metamaterials: Detailed Numerical Studies of the Transmission Properties*, J. Opt. A: Pure Appl. Opt. **7**, S12-S22 (2005).

25. M. Kafesaki, M. M. Sigalas, E. N. Economou, M. S. Kushwaha, I. E. Psarobas and W. Steurer, *Classical Vibrational Modes in Phononic Lattices: The Solid-State Physics Nomenclature of Formalism, Techniques and Observations Related to the Field of Phononic Crystals*, Zeitschrift fuer Kristallographie **220**, 765-809 (2005).
26. N. Katsarakis, G. Konstantinidis, A. Kostopoulos, R. S. Penciu, T. F. Gundogdu, M. Kafesaki, E. N. Economou, Th. Koschny, C. M. Soukoulis, *Magnetic Response of Split-Ring Resonators in the Far-Infrared Frequency Regime*, Opt. Lett. **30**, 1348-1350 (2005).
27. K. Aydin, I. Bulu, K. Guven, M. Kafesaki, C. M. Soukoulis, E. Ozbay, *Investigation of Magnetic Resonances for Different Split-Ring Resonator Parameters and Designs*, New Journal of Physics **7**, 168:1-15 (2005).
28. A. Femius Koenderink, M. Kafesaki, B. C. Buchler, and V. Sandoghdar, *Controlling the Resonance of a Photonic Crystal Microcavity by a Near-field Probe*, Phys. Rev. Lett. **95**, 153904 (2005).
29. A. F. Koenderink, M. Kafesaki, C. M. Soukoulis, and V. Sandoghdar, *Spontaneous Emission in the Near Field of Two-dimensional Photonic Crystals*, Opt. Lett. **30**, 3210-3212 (2005).
30. J. Zhou, Th. Koschny, M. Kafesaki, E. N. Economou, J. B. Pendry and C. M. Soukoulis, *Saturation of the Magnetic Response of Split-Ring Resonators at Optical Frequencies*, Phys. Rev. Lett. **95**, 223902 (2005).
31. A. F. Koenderink, R. Wuest, B. C. Buchler, S. Richter, P. Strasser, M. Kafesaki, A. Rogach, R. B. Wehrspohn, C. M. Soukoulis, D. Erni, F. Robin, H. Jackel and V. Sandoghdar, *Near-field Optics and Control of Photonic Crystals*, Photonics and Nanostr. **3**, 63-74 (2005).
32. R. S. Penciu, M. Kafesaki, T. F. Gundogdu, E. N. Economou, and C. M. Soukoulis, *Theoretical Study of Left-handed Behavior of Composite Metamaterials*, Photonics and Nanostr. **4**, 12-16 (2006).
33. M. Gokkavas, K. Guven, I. Bulu, K. Aydin, R. S. Penciu, M. Kafesaki, C. M. Soukoulis, and E. Ozbay, *Experimental Demonstration of a Left-handed Metamaterial Operating at 100 GHz*, Phys. Rev. B **73**, 193103 (2006).
34. A. F. Koenderink, M. Kafesaki, C. M. Soukoulis, and V. Sandoghdar, *Spontaneous Emission Rates of Dipoles in Photonic Crystal Membranes*, J. Opt. Soc. Am B **23**, 1196 (2006).
35. C. M. Soukoulis, M. Kafesaki and E. N. Economou, *Negative Index Materials: New Frontiers in Optics*, review article, Advanced Materials **18**, 1941-1952 (2006).
36. T. F. Gundogdu, I. Tsiapa, A. Kostopoulos, G. Konstantinidis, N. Katsarakis, R. S. Penciu, M. Kafesaki, E. N. Economou, Th. Koschny, and C. M. Soukoulis, *Experimental Demonstration of Negative Magnetic Permeability in the Far-Infrared Frequency Regime*, Appl. Phys. Lett. **89**, 084103 (2006).
37. C. M. Soukoulis, Th. Koschny, J. Zhou, M. Kafesaki, E. N. Economou, *Magnetic Response of Split-ring Resonators at Terahertz Frequencies*, Phys. Stat. Sol. (b) **244**, 1181-1187 (2007).
38. M. Kafesaki, Th. Koschny, J. Zhou, N. Katsarakis, I. Tsiapa, E. N. Economou and C. M. Soukoulis, *Electromagnetic Behaviour of Left-handed Materials*, Physica B: Cond. Matt. **394**, 148-154 (2007).
39. N. Katsarakis, M. Kafesaki, I. Tsiapa, E. N. Economou and C. M. Soukoulis, *High Transmittance Left-handed Materials Involving Symmetric Split-ring Resonators*, Photonics and Nanostructures, **5**, 149-155 (2007).
40. M. Kafesaki, I. Tsiapa, N. Katsarakis, Th. Koschny, C. M. Soukoulis, and E. N. Economou, *Left-handed Metamaterials: The Fishnet Structure and its Variations*, Phys. Rev. B **75**, 235114-(1-9) (2007).
41. S. Foteinopoulou, M. Kafesaki, E. N. Economou, and C. M. Soukoulis, *Backwards Surface Waves in Photonic Crystals*, Phys. Rev. B **75**, 245116-(1-6) (2007).
42. T.F. Gundogdu, M. Gökavas, K. Güven, M. Kafesaki, C. M. Soukoulis and E. Ozbay, *Simulation and Micro-fabrication of Optically Switchable Split Ring Resonators*, Photonics and Nanostructures **5**, 106-112 (2007).

43. K. Guven, A. O. Cakmak, M. D. Caliskan, T. F. Gundogdu, M. Kafesaki, C. M. Soukoulis, and E. Ozbay, *Bilayer Metamaterial: Analysis of Left-handed Transmission and Retrieval of Effective Medium Parameters*, J. Opt. A: Pure Appl. Opt. **9**, S361-S365 (2007).
44. S. Foteinopoulou, G. Kenanakis, N. Katsarakis, I. Tsiapa, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Experimental Verification of Backward Wave Propagation at Photonic Crystal Surfaces*, Appl. Phys. Lett. **91**, 214102-214104 (2007).
45. J. Zhou, Th. Koschny, M. Kafesaki and C. M. Soukoulis, *Size Dependence and Convergence of the Retrieval Parameters of Metamaterials*, Photonics and Nanostructures **6**, 96-101 (2008).
46. T. F. Gundogdu, N. Katsarakis, M. Kafesaki, R. S. Penciu, G. Konstantinidis, A. Kostopoulos, E. N. Economou, and C. M. Soukoulis, *Negative Index Short-slab Pair and Continuous Wires Metamaterials in the Far Infrared Regime*, Opt. Expr. **16**, 9173-9180 (2008).
47. C. M. Soukoulis, J. Zhou, Th. Koschny, M. Kafesaki, and E. N. Economou, *The Science of Negative Index Materials*, J. Phys.: Condens. Matter **20**, 304217 (2008).
48. R. S. Penciu, K. Aydin, M. Kafesaki, Th. Koschny, E. N. Economou, and C. M. Soukoulis, *Multi-gap Individual and Coupled Split-Ring Resonator Structures*, Opt. Expr. **16**, 18131 (2008).
49. D. Guney, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, *Connected Bulk Negative Index Photonic Metamaterials*, Opt. Lett. **34**, 506 (2009).
50. J. Zhou, J. Dong, B. Wang, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, *Negative Refractive Index due to Chirality*, Phys. Rev. B **79**, 121104(R) (2009).
51. N.-H. Shen, M. Kafesaki, Th. Koschny, L. Zhang, E. N. Economou, and C. M. Soukoulis, *Broadband Blueshift Tunable Metamaterials and Dual-band Switches*, Phys. Rev. B **79**, 161102(R) (2009).
52. J. Zhou, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, *Negative Refractive Index Response of Weakly and Strongly Coupled Optical Metamaterials*, Phys. Rev. B **80**, 035109 (2009).
53. E. N. Economou, M. Kafesaki, C. M. Soukoulis, and Th. Koschny, *The Fourth Quadrant in the epsilon-mu Plane: A New Frontier in Optics*, J. Comp. Theor. Nanoscience **6**, 1827 (2009).
54. N. H. Shen, S. Foteinopoulou, M. Kafesaki, Th. Koschny, E. Ozbay, E. N. Economou, and C. M. Soukoulis, *Compact Planar Far-field Superlens Based on Anisotropic Left-handed Metamaterials*, Phys. Rev. B **80**, 115123 (2009).
55. B. N. Wang, J. F. Zhou, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, *Chiral Metamaterials: Simulations and Experiments*, J. Opt. A: Pure and Appl. Opt. **11**, 114003 (2009).
56. N. H. Shen, G. Kenanakis, M. Kafesaki, N. Katsarakis, E. N. Economou, and C. M. Soukoulis, *Parametric Investigation and Analysis of Fishnet Metamaterials in the Microwave Regime*, J. Opt. Soc. Am B **26**, B61 (2009).
57. R. H. Tarkhanyan, D. G. Niarchos, M. Kafesaki, *Influence of External Magnetic Field on Magnon-Plasmon Polaritons in Negative-index Antiferromagnet-Semiconductor Superlattices*, J. Magn. Magn. Mat. **322**, 603 (2010).
58. J. M. Manceau, N. H. Shen, M. Kafesaki, C. M. Soukoulis, S. Tzortzakis, *Dynamic Response of Metamaterials in the Terahertz Regime: Blueshift Tunability and Broadband Phase Modulation*, Appl. Phys. Lett. **96**, 021111 (2010).
59. V. Reboud, N. Kehagias, T. Kehoe, G. Leveque, C. Mavidis, M. Kafesaki, C. Sotomayor-Torres, *Nanoimprinted Plasmonic Crystals for Light Extraction Applications*, Microelec. Engineering **87**, 1367 (2010).
60. R. S. Penciu, M. Kafesaki, Th. Koschny, E. N. Economou, and C. M. Soukoulis, *Magnetic Response of Nanoscale Left-handed Metamaterials*, Phys. Rev. B **81**, 235111 (2010).
61. Z. Li, R. Zhao, Th. Koschny, M. Kafesaki, K. Boratay Alici, E. Colak, H. Caglayan, E. Ozbay, and C. M. Soukoulis, *Chiral Metamaterials with Negative Refractive Index Based on Four "U" Split Ring Resonators*, Appl. Phys. Lett. **97**, 081901 (2010).

62. N. H. Shen, M. Massaouti, M. Gokkavas, J. M. Manceau, E. Ozbay, M. Kafesaki, Th. Koschny, S. Tzortzakis, and C. M. Soukoulis, *Optically Implemented Broadband Blueshift Switch in the Terahertz Regime*, Phys. Rev. Lett. **106**, 037403 (2011).
63. S. Foteinopoulou, M. Kafesaki, E. N. Economou and C. M. Soukoulis, *Two-dimensional Polaritonic Photonic Crystals as THz Uniaxial Metamaterials*, Phys. Rev. B **84**, 035128 (2011).
64. I. Bergmair, B. Dastmalchi, M. Bergmair, A. Saeed, H. Hilber, G. Hesser, C. Helgert, E. Pshenary-Severin, T. Pertsch, N. H. Shen, R. Penciu, M. Kafesaki, C. M. Soukoulis, K. Hingerl, M. Muehlberger and R. Schoefner, *Single and Multilayer Metamaterials Fabricated by Nanoimprint Lithography*, Nanotechnology **22**, 325301 (2011).
65. N. Vasilantonakis, K. Terzaki, I. Sakellari, V. Purlys, D. Gray, C. M. Soukoulis, M. Vamvakaki, M. Kafesaki, M. Farsari, *Three-dimensional Metallic Photonic Crystals with Optical Bandgaps*, Adv. Mat. **24**, 1101 (2012).
66. N.-H. Shen, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, *Optical Metamaterials with Different Metals*, Phys. Rev. B **85**, 075120 (2012).
67. Z. Li, H. Caglayan, K. B. Alici, M. Kafesaki, C. M. Soukoulis, and E. Ozbay, *Composite Chiral Metamaterials with Negative Refractive Index and High Values of the Figure of Merit*, Opt. Expr. **20**, 6146 (2012).
68. P. Tassin, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, *A Comparison of Graphene, Superconductors and Metals as Conductors for Metamaterials and Plasmonics*, Nat. Photonics **6**, 259 (2012).
69. V. Myroshnychenko, A. Stefanski, A. Manjavacas, M. Kafesaki, R. I. Merino, V. M. Orera, D. A. Pawlak, J. G. de Abajo, *Interacting Plasmon and Phonon Polaritons in Aligned Nano- and Microwires*, Opt. Express **20**, 10879 (2012).
70. A. Basharin, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Backward Wave Radiation from Negative Permittivity Waveguides and its Use for THz Subwavelength Imaging*, Opt. Express **20**, 12752 (2012).
71. A. Reyes-Coronado, M. F. Acosta, R. I. Merino, V. M. Orera, G. Kenanakis, N. Katsarakis, M. Kafesaki, Ch. Mavidis, J. G. de Abajo, E. N. Economou, C. M. Soukoulis, *Self-organization Approach for THz Polaritonic Metamaterials*, Opt. Express **20**, 14663 (2012).
72. X. W. Sha, E. N. Economou, D. A. Papaconstantopoulos, M. R. Pederson, M. J. Mehl, and M. Kafesaki, *Possible Molecular Bottom-Up Approach to Optical Metamaterials*, Phys. Rev. B **86**, 115404 (2012).
73. N.-H. Shen, L. Zhang, Th. Koschny, B. Dastmalchi, M. Kafesaki, and C. M. Soukoulis, *Discontinuous Design of Negative Index Metamaterials Based on Mode Hybridization*, Appl. Phys. Lett. **101**, 081913 (2012).
74. G. Kenanakis, N.-H. Shen, Ch. Mavidis, N. Katsarakis, M. Kafesaki, C. M. Soukoulis, E.N. Economou, *Microwave and THz Sensing Using Slab-pair-based Metamaterials*, Phys. B: Cond.-Matter. **407**, 4070 (2012).
75. M. Kafesaki, N.-H. Shen, S. Tzortzakis, and C. M. Soukoulis, *Optically Switchable and Tunable Terahertz Metamaterials through Photoconductivity*, J. Opt. **14**, 114008 (2012).
76. G. Kenanakis, R. Zhao, A. Stavrinidis, G. Konstantinidis, N. Katsarakis, M. Kafesaki, C. M. Soukoulis, E. N. Economou, *Flexible Chiral Metamaterials in the Terahertz Regime: a Comparative Study of Various Designs*, Opt. Mat. Express **2**, 1702 (2012).
77. M. Massaouti, A. A. Basharin, M. Kafesaki, M. F. Acosta, R. I. Merino, V. M. Orera, E. N. Economou, C. M. Soukoulis, *Eutectic Epsilon-near-zero Metamaterial Terahertz Waveguides*, Opt. Lett. **38**, 1140 (2013).
78. A. A. Basharin, Ch. Mavidis, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Epsilon Near Zero Based Phenomena in Metamaterials*, Phys. Rev. B **87**, 155130 (2013).
79. N. H. Shen, Th. Koschny, M. Kafesaki, C. M. Soukoulis, *Robust Wedge Demonstration to Optical Negative Index Metamaterials*, Appl. Phys. Lett. **102**, 241915 (2013).

80. G. Kenanakis, R. Zhao, N. Katsarakis, M. Kafesaki, C. M. Soukoulis, E. N. Economou, *Optically Controllable THz Chiral Metamaterials*, *Opt. Express* **22**, 12149 (2014).
81. M. Kafesaki, A. A. Basharin, E. N. Economou, C. M. Soukoulis, *THz Metamaterials Made of Phonon-Polariton Materials*, *Photon. Nanostruct. - Fundamentals and Applications* **12**, 376 (2014).
82. A. C. Tasolamprou, L. Zhang, M. Kafesaki, Th. Koschny, and C. M. Soukoulis, *Experimentally Excellent Beaming in a Two-layer Dielectric Structure*, *Opt. Expr.* **22**, 23147 (2014).
83. N. Aravantinos-Zafiris, M. Sigalas, M. Kafesaki, and E. N. Economou, *Phononic Crystals and Elastodynamics: Some Relevant Points*, *AIP Adv.* **4**, 124203 (2014).
84. G. Kenanakis, A. Xomalis, A. Selimis, M. Vamvakaki, M. Farsari, M. Kafesaki, C. M. Soukoulis, and E. N. Economou, *Three-dimensional Infrared Metamaterial with Asymmetric Transmission*, *ACS Photon.* **2**, 287 (2015).
85. A. A. Basharin, M. Kafesaki, E. N. Economou, C. M. Soukoulis, V. A. Fedotov, V. Savinov, and N. I. Zheludev, *Dielectric Metamaterials with Toroidal Dipolar Response*, *Phys. Rev. X* **5**, 011036 (2015).
86. Ch. Liaskos, A. Tsioliaridou, A. Pitsillides, I. F. Akyildiz, N. V. Kantartzis, A. X. Lalas, X. Dimitropoulos, S. Ioannidis, M. Kafesaki, C. M. Soukoulis, *Design and Development of Software Defined Metamaterials for Nanonetworks*, *IEEE Circ. Sys. Magazine* **15**, 12-25 (2015).
87. A. C. Tasolamprou, L. Zhang, M. Kafesaki, Th. Koschny, and C. M. Soukoulis, *Frequency Splitter Based on the Directional Emission from Surface Modes in Dielectric Photonic Crystal Structures*, *Opt. Expr.* **23**, 13972 (2015).
88. G. Kenanakis, E. N. Economou, C. M. Soukoulis, M. Kafesaki, *Controlling THz and Far-IR Waves with Chiral and Bianisotropic Metamaterials*, *EPJ Appl. Metamat.* **2**, 15 (2016).
89. G. Kajtar, M. Kafesaki, E. N. Economou and C. M. Soukoulis, *Theoretical Model of Homogeneous Metal-Insulator-Metal Perfect Multi-Band Absorbers for the Visible Spectrum*, *J. Phys. D: Appl. Phys.* **49**, 055104 (2016).
90. M. V. Shuba, A. G. Paddubskaya, P. P. Kuzhir, S. A. Maksimenko, G. Valusis, N. A. Poklonski, S. Bellucci, G. Kenanakis, and M. Kafesaki, *Temperature Induced Modification of the Mid-Infrared Response of Single-Walled Carbon Nanotubes*, *J. Appl. Phys.* **119**, 104303 (2016).
91. A. Akbarzadeh, Th. Koschny, M. Kafesaki, E. N. Economou, and C. M. Soukoulis, *Graded-Index Optical Dimer Formed by Optical Force*, *Opt. Express* **24**, 1376 (2016).
92. G. Kenanakis, K. C. Vasilopoulos, Z. Viskadourakis, N.-M. Barkoula, S. H. Anastasiadis, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Electromagnetic Shielding Effectiveness and Mechanical Properties of Graphite-based Polymeric Films*, *Appl. Phys. A* **122**, 802 (2016).
93. A. C. Tasolamprou, O. Tsilipakos, M. Kafesaki, C. M. Soukoulis, and E. N. Economou, *Toroidal eigenmodes in all-dielectric metamolecules*, *Phys. Rev. B* **94**, 205433 (2016).
94. G. Kenanakis, Ch. Mavidis, E. Vasilaki, N. Katsarakis, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Perfect Absorbers Based on Metal-Insulator-Metal Structures in the Visible Region: A Simple Approach for Practical Applications*, *Appl. Phys. A* **123**, 77 (2017).
95. A. Basharin, V. Chuguevsky, N. Volsky, M. Kafesaki, and E. N. Economou, *Extremely High Q-Factor Metamaterials due to Anapole Excitation*, *Phys. Rev. B* **95**, 035104 (2017).
96. A. C. Tasolamprou, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, *Near-Infrared and Optical Beam Steering and Frequency Splitting in Air-Holes-in-Silicon Inverse Photonic Crystals*, *ACS Photonics* **4**, 2782 (2017).
97. O. Tsilipakos, A. C. Tasolamprou, Th. Koschny, M. Kafesaki, E. N. Economou and C. M. Soukoulis, *Pairing Toroidal and Magnetic Dipole Resonances in Elliptic Dielectric Rod Metasurfaces for Reconfigurable Wavefront Manipulation in Reflection*, *Adv. Opt. Materials* **6**, 1800633 (2018).
98. S. Droulias, Th. Koschny, M. Kafesaki and C. M. Soukoulis, *On Loss Compensation, Amplification and Lasing in Metallic Metamaterials*, *Nanomat. and Nanotechn.* **9**, 1847980418817947 (2019).

99. A. C. Tasolamprou, A. D. Koulouklidis, C. Daskalaki, C. P. Mavidis, G. Kenanakis, G. Deligeorgis, Z. Viskadourakis, P. Kuzhir, S. Tzortzakis, M. Kafesaki, E. N. Economou and C. M. Soukoulis, *Experimental Demonstration of Ultrafast THz Modulation in a Graphene-based Thin Film Absorber through Negative Photoinduced Conductivity*, ACS Photon. **6**, 720 (2019).
100. G. Perrakis, O. Tsilipakos, G. Kenanakis, M. Kafesaki, C. M. Soukoulis and E. N. Economou, *Perfect optical absorption with nanostructured metal films: Design and experimental demonstration*, Opt. Express **27**, 6842 (2019).
101. A. Akbarzadeh, M. Kafesaki, E. N. Economou, C. M. Soukoulis and J. A. Crosse, *Spontaneous-relaxation-rate suppression in cavities with PT symmetry*, Phys. Rev. A **99**, 033853 (2019).
102. F. Liu, O. Tsilipakos, A. Ptilakis, A. C. Tasolamprou, M. S Mirmoosa, N. V. Kantartzis, D. H. Kwon, M. Kafesaki, C. M. Soukoulis, S. A. Tretyakov, *Intelligent metasurfaces with continuously tunable local surface impedance for multiple reconfigurable functions*, Phys. Rev. Appl. **11**, 044024 (2019).
103. S. Droulias, I. Katsantonis, M. Kafesaki, C. M. Soukoulis and E. N. Economou, *Chiral metamaterials with PT symmetry and beyond*, Phys. Rev. Lett. **122**, 213201 (2019).
104. G. Perrakis, G. Kakavelakis, G. Kenanakis, K. Petridis, E. Stratakis, M. Kafesaki, E. Kymakis, *Efficient and environmental-friendly perovskite solar cells via embedding plasmonic nanoparticles: an optical simulation study on realistic device architectures*, Opt. Express **27**, 31144 (2019). DOI: 10.1364/OE.27.031144
105. S. Droulias, I. Katsantonis, M. Kafesaki, C. M. Soukoulis, E. N. Economou, *Accessible phases via wave impedance engineering with PT-symmetric metamaterials*, Phys. Rev B **100**, 205133 (2019).
106. H. Taghvaei, S. Abadal, A. Ptilakis, O. Tsilipakos, A. C. Tasolamprou, C. Liaskos, M. Kafesaki, N. V. Kantartzis, A. Cabellos-Aparicio, E. Alarcon, *Scalability Analysis of Programmable Metasurfaces for Beam Steering*, IEEE Access **8**, 105320 (2020). DOI: 10.1109/ACCESS.2020.3000424
107. I. Katsantonis, S. Droulias, C. M. Soukoulis, E. N. Economou, M. Kafesaki, *Scattering Properties of PT-Symmetric Chiral Metamaterials*, Photonics **7**, 43 (2020). DOI: 10.3390/photonics7020043
108. C. P. Mavidis, A. C. Tasolamprou, S. B. Hasan, T. Koschny, E. N. Economou, M. Kafesaki, C. M. Soukoulis, W. L. Vos, *Local density of optical states in the three-dimensional band gap of a finite photonic crystal*, Phys. Rev. B **101**, 235309 (2020). DOI: 10.1103/PhysRevB.101.235309
109. I. Katsantonis, S. Droulias, C. M. Soukoulis, E. N. Economou, M. Kafesaki, *PT-symmetric chiral metamaterials: Asymmetric effects and PT-phase control*, Phys. Rev. B **101**, 214109 (2020). DOI: 10.1103/PhysRevB.101.214109
110. G. Perrakis, A. C. Tasolamprou, G. Kenanakis, E. N. Economou, S. Tzortzakis, M. Kafesaki, *Ultraviolet radiation impact on the efficiency of commercial crystalline silicon-based photovoltaics: a theoretical thermal-electrical study in realistic device architectures*, OSA Contin. **3**, 1436 (2020). DOI: 10.1364/OSAC.388905
111. G. Perrakis, A. C. Tasolamprou, G. Kenanakis, E. N. Economou, S. Tzortzakis, M. Kafesaki, *Passive radiative cooling and other photonic approaches for the temperature control of photovoltaics: a comparative study for crystalline silicon-based architectures*, Opt. Express **28**, 18548 (2020). DOI: 10.1364/OE.388208
112. O. Tsilipakos, A. C. Tasolamprou, A. Ptilakis, F. Liu, X. C. Wang, M. S. Mirmoosa, D. C. Tzarouchis, S. Abadal, H. Taghvaei, C. Liaskos, A. Tsioliaridou, J. Georgiou, A. Cabellos-Aparicio, E. Alarcon, S. Ioannidis, A. Pitsillides, I. F. Akyildiz, N. V. Kantartzis, E. N. Economou, C. M. Soukoulis, M. Kafesaki, S. Tretyakov, *Towards Intelligent Metasurfaces: The Progress from Globally Tunable Metasurfaces to Software-Defined Metasurfaces with an Embedded Network of Controllers*, Adv. Opt. Mat. **8**, 2000783 (2020). DOI: 10.1002/adom.202000783
113. A. C. Tasolamprou, D. Mentzaki, Z. Viskadourakis, E. N. Economou, G. Kenanakis, *Flexible 3D printed conductive metamaterial units for electromagnetic applications in microwaves*, Materials **13**, 3879 (2020). DOI: 10.3390/ma13173879
114. O. Tsilipakos, M. Kafesaki, E. N. Economou, C. M. Soukoulis, Th. Koschny, *Squeezing a Prism into*

- a surface: Emulating bulk optics with achromatic metasurfaces*, Adv. Opt. Mat. **8**, 2000942 (2020). DOI: 10.1002/adom.202000942
115. O. Tsilipakos, A. Xomalis, G. Kenanakis, M. Farsari, C. M. Soukoulis, E. N. Economou, M. Kafesaki, *Split-cube-resonator-based metamaterials for polarization-selective asymmetric perfect absorption*, Scientific Reports **10**, 17653 (2020). DOI: 10.1038/s41598-020-74221-7
116. C. P. Mavidis, A. C. Tasolamprou, E. N. Economou, C. M. Soukoulis, M. Kafesaki, *Polaritonic cylinders as multifunctional metamaterials: Single scattering and effective medium description*, Phys. Rev. B **102**, 155310 (2020). DOI: 10.1103/PhysRevB.102.155310
117. E. Takou, A. C. Tasolamprou, O. Tsilipakos, Z. Viskadourakis, M. Kafesaki, G. Kenanakis, E. N. Economou, *Anapole tolerance to dissipation losses in thermally tunable water-based metasurfaces*, Phys. Rev. Appl. **15**, 014043 (2021). DOI: 10.1103/PhysRevApplied.15.014043
118. A. Pitilakis, O. Tsilipakos, F. Liu, K. M. Kossifos, A. C. Tasolamprou, D. H. Kwon, M. S. Mirmoosa, D. Manassis, N. V. Kantartzis, C. Liaskos, M. A. Antoniadis, J. Georgiou, C. M. Soukoulis, M. Kafesaki, S. A. Tretyakov, *A Multi-functional reconfigurable metasurface: Electromagnetic design accounting for fabrication aspects*, IEEE Trans. on Ant. and Propag. **69**, 1440 (2021). DOI: 10.1109/TAP.2020.3016479
119. V. Melissinaki, O. Tsilipakos, M. Kafesaki, M. Farsari, S. Pissadakis, *Micro-ring resonator devices prototyped on optical fiber tapers by multi-photon lithography*, IEEE J. Select. Top. Quant. Electr. **27**, 1 (2021). DOI: 10.1109/JSTQE.2021.3062716.
120. G. Perrakis, A. C. Tasolamprou, G. Kenanakis, E. N. Economou, S. Tzortzakis, M. Kafesaki, *Combined nano and micro structuring for enhanced radiative cooling and efficiency of photovoltaic cells*, Scient. Rep. **11**, 11552 (2021). DOI: 10.1038/s41598-021-91061-1
121. O. Tsilipakos, L. Zhang, M. Kafesaki, C. M. Soukoulis, Th. Koschny, *Experimental Implementation of Achromatic Multiresonant Metasurface for Broadband Pulse Delay*, ACS Photon. **8**, 1649-1655 (2021). DOI: 10.1021/acsp Photonics.1c00025
122. A. Tasolamprou, M. Kafesaki, C. M. Soukoulis, E. N. Economou, Th. Koschny, *Chiral Topological Surface States on a Finite Square Photonic Crystal Bounded by Air*, Phys. Rev. Appl. **16**, 044011 (2021). DOI: 10.1103/PhysRevApplied.16.044011
123. M. Baah, A. Paddubskaya, A. Novitsky, N. Valynets, M. Kumar, T. Itkonen, M. Pekkarinen, E. Soboleva, E. Lahderanta, M. Kafesaki, Y. Svirko, P. Kuzhir, *All-graphene perfect broadband THz absorber*, Carbon **185**, 709-716 (2021). DOI: 10.1016/j.carbon.2021.09.067
124. O. Tsilipakos, L. Maiolo, F. Maita, R. Beccherelli, M. Kafesaki, E. E. Kriezis, T. Yioultsis, D. C. Zografopoulos, *Experimental Demonstration of Ultrathin Broken-symmetry Metasurfaces with Controllably Sharp Resonant Response*, Appl. Phys. Lett. **119**, 231601 (2021). DOI: 10.1063/5.0073803
125. A. Theodosi, O. Tsilipakos, C. M. Soukoulis, E. N. Economou, M. Kafesaki, *2D-patterned Graphene Metasurfaces for Efficient Third Harmonic Generation at THz Frequencies*, Opt. Expr. **30**, 460-472 (2022). DOI: 10.1364/OE.445751
126. H. Taghvaei, A. Pitilakis, O. Tsilipakos, A. C. Tasolamprou, N. V. Kantartzis, M. Kafesaki, A. Cabellos-Aparicio, E. Alarcon, S. Abadal, *Multiband Terahertz Communications Via Tunable Graphene-Based Metasurfaces in 6G Networks*, IEEE Vehicular Techn. Mag. **17**, 16-25 (2022); DOI: 10.1109/MVT.2022.3155905
127. G. Perrakis, A. C. Tasolamprou, G. Kenanakis, E. N. Economou, S. Tzortzakis, M. Kafesaki, *Submicron Organic-Inorganic Hybrid Radiative Cooling Coatings for Stable, Ultrathin, and Lightweight Solar Cells*, ACS Photon. **9**, 1327 (2022); DOI: 10.1021/acsp Photonics.1c01935
128. I. Katsantonis, S. Droulias, C.M. Soukoulis, E.N. Economou, T. P. Rakitzis, M. Kafesaki, *Chirality Sensing Employing Parity-Time-Symmetric and Other Resonant Gain-Loss Optical Systems*, Phys. Rev. B **105**, 174112 (2022); DOI: 10.1103/PhysRevB.105.174112
129. A. Pitilakis, M. Seckel, A.C. Tasolamprou, F. Liu, A. Deltsidis, D. Manassis, A. Ostmann, N.V. Kantartzis, C. Liaskos, C.M. Soukoulis, S.A. Tretyakov, M. Kafesaki, O. Tsilipakos, *Multifunctional*

Metasurface Architecture for Amplitude, Polarization and Wave-Front Control, Phys. Rev. Appl. **17**, 064060 (2022); DOI: 10.1103/PhysRevApplied.17.064060

130. K. Baskourelou, O. Tsilipakos, T. Stefański, S. F. Galata, E. N. Economou, M. Kafesaki, and K. L. Tsakmakidis, *Topological Extraordinary Optical Transmission*, Phys. Rev. Research **4**, L032011 (2022); DOI: 10.1103/PhysRevResearch.4.L032011
131. A. D. Koulouklidis, A. C. Tasolamprou, S. Doukas, E. Kyriakou, M. S. Ergoktas, C. Daskalaki, E. N. Economou, C. Kocabas, E. Lidorikis, M. Kafesaki, S. Tzortzakos, *Ultrafast Terahertz Self-Induced Absorption and Phase Modulation on a Graphene-Based Thin Film Absorber*, ACS Photon. **9**, 3075 (2022); DOI: 10.1021/acsp Photonics.2c00828

Book chapters:

1. M. Kafesaki, E. N. Economou and M. M. Sigalas, *Elastic Waves in Periodic Composite Materials*. In the proceedings of the NATO ARW, *Photonic Band Gap Materials*, ed. by C. M. Soukoulis (Kluwer Academic Publishers, Dordrecht, 1996).
2. M. Kafesaki, E. N. Economou and M. M. Sigalas, *Parallel Computing in the Acoustic and Elastic Wave Propagation in Periodic Media*. In the *Developments in Computational Mechanics with High Performance Computing*, edited by B.H.V. Topping (Civil-Comp Press Ltd, Edinburgh, 1999), pp.155-159.
3. M. Kafesaki, M. M. Sigalas, and N. Garcia, *The Finite Difference Time Domain Method for the Study of Two-Dimensional Acoustic and Elastic Band Gap Materials*, in *Photonic Crystals and Light localization in the 21st century*, ed. by C. M. Soukoulis (Kluwer, Dordrecht, 2001), pp. 69-82.
4. V. Sandoghdar, B. C. Buchler, P. Kramper, O. Benson and M. Kafesaki, *Scanning Near-field Optical Studies of Photonic Devices*, at *Photonic Crystals - Advances in Design, Fabrication and Characterization*, edited by K. Busch, S. Lolkes, R. Wehrspohn and H. Foll, WILEY-VCH, 2004, Weinheim, Germany.
5. M. Kafesaki and C. M. Soukoulis, *A Historical Perspective and a Review of the Fundamental Principles in Modeling 3D Periodic Structures with an Emphasis on volumetric EBGs*, in *Metamaterials: Physics and Engineering Explorations*, edited by N. Engheta and R. Ziolkowski (Wiley-VCH, July 2006).
6. M. Kafesaki, Th. Koschny, C. M. Soukoulis and E. N. Economou, *Designing One-, Two- and Three-dimensional Left-handed Materials*, Chapter in *Handbook of Artificial Electromagnetic Materials*, edited by F. Capolino (Taylor & Francis, 2009).
7. S. Abadal, X. Timoneda, J. Solé-Pareta, E. Alarcón, A. Cabellos-Aparicio, A. C. Tasolamprou, O. Tsilipakos, C. Liaskos, M. Kafesaki, E. N. Economou, C. M. Soukoulis, A. Ptilakis, N. V. Kantartzis, M. S. Mirmoosa, F. Liu, S. Tretyakov, *Nanoscale Channel Modeling in Highly Integrated Computing Packages*, in *Nanoscale Networking and Communications Handbook*, Chapter 6 (CRC Press, 2019).
8. A. C. Tasolamprou, O. Tsilipakos, A. Basharin, M. Kafesaki, C. M. Soukoulis and E. N. Economou, *Toroidal multipoles in metamaterials*, Chapter 7 of Volume 5 in *Electromagnetic Analysis: From Electrostatics To Photonics*, edited by Igor Tsukerman (World Scientific, 2020). ISBN:978-981-3270-16-9. DOI: 10.1142/9789813270343_0007
9. F. Liu, X. Wang, M. Sajjad Mirmoosa, S. Tretyakov, O. Tsilipakos, A. C. Tasolamprou, M. Kafesaki, A. Ptilakis, N. V. Kantartzis, Do-Hoon Kwon, *Electromagnetic Specifications and Prototype Designs of Software Defined Surfaces*, chapter in *The Internet of Materials*. Edited by C. Liaskos, CRC Press (2020).
10. H. Taghvaei, S. Abadal Cavallé, E. J. Alarcón Cot, A. Cabellos Aparicio, T. Saeed, A. Pitsillides, O. Tsilipakos, C. Liaskos, A. Tasolamprou, M. Kafesaki, A. Ptilakis, N. V. Kantartzis, V. Soteriou, M. Lestas, *The scaling laws of HyperSurfaces*, chapter in *The Internet of materials*. Edited by C. Liaskos, CRC Press (2020).

Other publications (partial list):

1. W. M. Saj, S. Foteinopoulou, M. Kafesaki, C. M. Soukoulis, and E. N. Economou, *Periodically structured plasmonic waveguides*, Proc. SPIE 6987, 69870Y (2008); doi:10.1117/12.786569 (Proceedings of the SPIE-Photonics Europe Conference, 2008).
2. M. Kafesaki, *Optical Negative Index Response of Nanoscale Metamaterials*, 13 January 2011, SPIE Newsroom. DOI: 10.1117/2.1201012.003355.
3. M. Kafesaki, R. Penciu, Th. Koschny, N. H. Shen, D. Guney, E. N. Economou, and C. M. Soukoulis, *Optical Metamaterials: Possibilities and Limitations*, at IESC proceedings (proceedings of the school "Mesoscopic Physics in Complex Media", Cargese, France, 12-16 July 2010). Published online: 23 December 2010. DOI: 10.1051/iesc/2010mpcm01011.
4. A. A. Basharin, M. Kafesaki, E. N. Economou, and C. M. Soukoulis, *Superlensing Effects in Anisotropic Eutectic Metamaterials in the THz Range*, AIP Conf. Proc. 1398, pp. 64-66; doi:10.1063/1.3644213 (Proceedings of the "4th International Workshop on Theoretical and Computational Nanophotonics"-TaCoNa-Photonics 2011).
5. A. Akbarzadeh, Th. Koschny, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Graded-index Media for Optical Manipulation*. Proc of OSA 2017 Conf. Optics in the Life Sciences, paper OtS1D.7, DOI: <https://doi.org/10.1364/OTA.2017.OtS1D.7>
6. O. Tsilipakos, A. C. Tasolamprou, Th. Koschny, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Dielectric Rod Metasurfaces: Exploiting Toroidal and Magnetic Dipole Resonances*, Proc. 11th International Congress on Engineered Materials Platforms for Novel Wave Phenomena (Metamaterials) 2017, IEEEXplore, p. 355, DOI:10.1109/MetaMaterials.2017.8107810
7. A. C. Tasolamprou, A. Ptilakis, S. Abadal, O. Tsilipakos, X. Timoneda, H. Taghvaei, M. S. Mirmoosa, F. Liu, C. Liaskos, A. Tsiolaridou, S. Ioannidis, N. V. Kantartzis, D. Manassis, J. Georgiou, Cabellos-Aparicio, A. Pitsilides, I. Akyldiz, S. Tretyakov, E. N. Economou, M. Kafesaki and C. M. Soukoulis, *Exploration of Intercell Wireless Millimeter-Wave Communication in the Landscape of Intelligent Metasurfaces*, IEEE Access, 8788546, 122931 (2019).
8. D. Manassis, M. Seckel, L. Fu, O. Tsilipakos, A. Ptilakis, A. C. Tasolamprou, K. Kossifos, G. Varnava, C. Liaskos, M. Kafesaki, C. M. Soukoulis, S. Tretyakov, J. Georgiou, A. Ostmann, R. Aschenbrenner, M. Schneider-Ramelow, K. D. Lang, *Manufacturing of high frequency substrates as software programmable metasurfaces on PCBs with integrated controller nodes*, IEEE 8th Electronics System-Integration Technology Conference (ESTC) 1 (2020).

Total citations: From Web of Science: 8300 citations (7940 without self-citations), **h-index=46**; from Google Scholar: 12300 citations, **h-index=53** (as in October 2022).

Invited talks:

At Conferences/Workshops/Schools

1. **June 2004:** In "Nanoelectronic and Photonic Systems Workshop", Tarragona, Spain. (Title: *Electromagnetic Wave Propagation in Metamaterials: Photonic Crystals and Left-handed Materials.*)
2. **April 2005:** In "Seminar on Metamaterials and Circuit Design Based on Split-ring Resonators", Barcelona, Spain. (Title: *Parametric Study and Electromagnetic Response of SRR Particles.*)
3. **July 2005:** In "Summer School on Metamaterials", San Sebastian, Spain. (Title: *Left-handed materials: Detailed numerical study of their transmission properties*)
4. **July 2006:** In "ETOPIM7: The 7th International Conference on the Electrical, Transport and Optical Properties of Inhomogeneous Media", Sydney, Australia. (Title: *Electromagnetic behaviour of left-handed materials and related metamaterials.*)
5. **September 2006:** In "Mediterranean Microwave Symposium 2006", Genova, Italy. (Title: *Transmission properties of left-handed materials and related metamaterials.*)

6. **October 2006:** In “The 5th RIKEN Nanophotonics Symposium on Plasmonics and Nanophotonics”, RIKEN, Tokyo, Japan. (Title: *Left-handed materials and magnetic metamaterials towards optical regime.*)
7. **January 2007:** In “NANOMETA: The 1st European Topical Meeting on Nanophotonics and Metamaterials”, Seefeld, Austria. (Title: *Left-handed metamaterial designs in microwave frequencies.*)
8. **April 2007:** In the “Workshop on Advances in Physics and Technology of Photonic Crystals”, organized by the COST P11 Action, Prague. (Title: *Backwards surface waves in photonic crystals.*)
9. **July 2007:** In the “9th International Conference on Transparent Optical Networks (ICTON)”, Rome, Italy. (Title: *Left-handed materials for microwave and optical frequencies.*)
10. **October 2007:** In “Metamaterials 2007 - First international congress on advanced electromagnetic materials in microwaves and optics”, Rome, Italy. (Title: *Left-handed metamaterial designs in microwave and infrared frequencies.*)
11. **February 2008:** In “Metamaterials week 2008 in Barcelona”, Barcelona, Spain. (Title: *Left-handed metamaterial designs in microwave and optical frequencies.*)
12. **February 2008:** At “Nanostructured Photonics Symposium”, part of the “Annual Meeting of the German Physical Society (DPG Tagung)”, Berlin, Germany. (Title: *Scaling negative index materials toward optical frequencies.*)
13. **March 2008:** At “Progress in Electromagnetics Research Symposium (PIERS) 2008”, Hangzhou, China. (Title: *Magnetic metamaterials and left-handed materials towards optical frequencies.*)
14. **April 2008:** In SPIE conference “Photonics Europe: Matamaterials”, Strasbourg, France. (Title: *Scaling behaviour of magnetic metamaterials and left-handed materials from microwaves to optical regime.*)
15. **April 2008:** In NATO Technical Workshop on “Photonic Metamaterials for Defense and Security Applications”, Strasbourg, France. (Title: *Status of left-handed and negative index materials for applications.*)
16. **April 2008:** In “Women in Photonics School on Photonic Metamaterials”, Paris, France. (Title: *Basic electromagnetism for photonic metamaterials.*)
17. **June 2008:** In the “10th International Conference on Transparent Optical Networks (ICTON)”, Athens, Greece. (Title: *Left-handed materials from microwaves to optics.*)
18. **October 2008:** "1st Mediterranean Conference on Nanophotonics", Istanbul, Turkey. (Title: *Left-handed materials in the optical regime.*)
19. **October 2008:** The "European Optical Society (EOS) Annual Meeting", Paris, France. (Title: *Negative index materials towards optical frequencies.*)
20. **July 2009:** “ICMAT 2009: International Conference on Materials for Advanced Technologies 2009”, Singapore. (Title: *Optical metamaterials: Possibilities and limitations.*)
21. **August 2009:** “Metamaterials 2009”, London, UK. (Title: *Designing optical metamaterials.*)
22. **September 2009:** “25th PanHellenic Conference on Solid State Physics and Materials Science”, Thessaloniki, Greece. (Title: *Manipulating light with optical left-handed materials.*)
23. **January 2010:** Workshop on "Metamaterials: Applications, Analysis and Modeling", Los Angeles, USA. (Title: *Magnetic response of nanoscale left-handed metamaterials.*)
24. **February 2010:** "2nd International Conference on Metamaterials, Photonic Crystals and Plasmonics (Meta'10)", Cairo, Egypt. (Title: *Designing optical negative index and negative permeability metamaterials.*)
25. **April 2010:** SPIE conference “Photonics Europe: Matamaterials”, Brussels, Belgium. (Title: *Negative refractive index response of weakly and strongly coupled optical metamaterials.*)
26. **June 2010:** "5th Forum on New Materials in CIMTEC 2010 Conference", Florence, Italy. (Title: *Negative index metamaterials: Going from microwaves to optics.*)

27. **June 2010:** "12th International Conference on Transparent Optical Networks (ICTON)", Munich, Germany. (Title: *Designing left-handed metamaterials for the optical regime.*)
28. **July 2010:** Summer school on "Mesoscopic Physics in Complex Media", Cargese, Corse. (Title: *Optical metamaterials: Possibilities and limitations.*)
29. **August 2010:** SPIE Optics and Photonics conference on "Nanoscienc+Engineering", San Diego, USA. (Title: *Optical negative index response of nanoscale metamaterials.*)
30. **September 2010:** "Metamaterials 2010", Karlsruhe, Germany. (Title: *Planar far field superlens based on anisotropic left-handed metamaterials.*)
31. **October 2010:** "3rd Mediterranean Conference on Nanophotonics" (Medi-Nano 3), Belgrade, Serbia. (Title: *Designing left-handed metamaterials for the optical regime.*)
32. **March 2011:** "Progress In Electromagnetics Research Symposium 2011" (PIERS 2011), Marrakesh, Morocco. (Title: *Optimizing left-handed metamaterials for the optical regime.*)
33. **May 2011:** Annual international conference "Days of Diffraction" (Metamaterials Workshop), St. Petersburg, Russia. (Title: *Anisotropic left-handed metamaterials for imaging.*)
34. **June 2011:** "International Conference for Materials for Advanced Technologies (ICMAT) 2011 - Symposium S: Metamaterials", Singapore. (Title: *Anisotropic left-handed metamaterials for imaging.*)
35. **August 2011:** "Moscow International Symposium on Magnetism" (MISM), Moscow, Russia. (Title: *Magnetic response of nanoscale left-handed metamaterials.*)
36. **September 2011:** "Nanoscience and Nanotechnology 2011", Frascati, Italy. (Title: *Magnetic response of optical left-handed metamaterials.*)
37. **October 2011:** "Metamaterials 2011", Barcelona, Spain. (Title: *THz manipulation and superlensing using polaritonic metamaterials.*)
38. **October 2011:** W&E Heraeus-Seminar "Quantum and Nano Plasmonics", Bad Honnef, Germany. (Title: *THz manipulation and superlensing using polaritonic metamaterials .*)
39. **March 2012:** SPIE Conference on "Smart Structures and Materials" (Smart Sensor Phenomena, Technology, Networks, and Systems Integration V), San Diego, USA (March 11 - 15). (Title: *Polaritonic photonic crystals as THz hyperbolic dispersion metamaterials.*)
40. **April 2012:** "Meta 2012", Paris, France (April 19 - 22). (Title: *THz metamaterials made of polaritonic materials.*)
41. **April 2012:** "International Conference on Computational and Experimental Engineering and Sciences" (ICCES) - Symposium "Metamaterials", Chania, Crete, Greece (April 30 - May 4). (Title: *Left-handed metamaterials towards the optical regime.*)
42. **May 2012:** International Symposium on "Novel Ideas in Optics: From Advanced Materials to Revolutionary Applications", Purdue Univ., Indiana, USA (May 31 - June 2). (Title: *THz metamaterials made of polaritonic materials.*)
43. **June 2012:** "PECS-X: 10th International Symposium on Photonic and Electromagnetic Crystal Structures", Santa Fe, New Mexico, USA (June 3-8). (Title: *What are good conductors for metamaterials and plasmonics? .*)
44. **July 2012:** "International School of Quantum Electronics - 52nd Course "Advances on Nanophotonics IV", Erice, Sicily, Italy (July 17-29). (Title - Talk 1: *Towards optical left-handed metamaterials.*, Title - Talk 2: *Modelling approaches for metamaterials.*)
45. **September 2012:** "Metamaterials 2012: The 6th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics", St. Petersburg, Russia, September 2012 (September 17-20). (Title: *THz metamaterials made of polaritonic materials.*)
46. **March 2013:** "META 2013", Sharjah, United Arab Emirates (March 18-22). (Title: *THz metamaterials made of polaritonic materials.*)

47. **July 2013:** "ICMAT 2013: 7th International Conference on Materials for Advanced Technologies", Singapore (June 30 - July 5). (Title: *THz metamaterials employing phonon-polariton materials.*)
48. **July 2013:** "10th International Conference on Nanoscience and Nanotechnologies", Thessaloniki, Greece (July 9-13). (Title: *Going for optical left-handed metamaterials.*)
49. **July 2013:** "1st Erasmus Intensive Program (school) Spintronics and Applications (SPEA)", Chania, Crete (July 22 - August 2). (Title: *Introduction to Quantum Mechanics.*)
50. **August 2013:** SPIE Optics and Photonics conference on "Nanoscienc+Engineering: Metamaterials", San Diego, USA (August 25-29). (Title: *THz metamaterial effects in phonon-polariton composite media.*)
51. **September 2013:** "Metamaterials 2013: The 7th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics", Bordeaux, France (September 16-19). (Title: *THz polarization control using chiral metamaterials.*)
52. **April 2014:** "SPIE Photonics Europe 2014", Conference "Metamaterials", Brussels, Belgium (April 14-17). (Title: *Chiral metamaterials for THz polarization control.*)
53. **June 2014:** "Moscow International Symposium on Magnetism 2014" (MISM), Moscow, Russia (June 29 - July 3). (Title: *THz polarization control using chiral metamaterials.*)
54. **July 2014:** "16th International Conference on Transparent Optical Networks (ICTON 2014)", Graz, Austria (July 6-10). (Title: *Chiral metamaterials: A tool for THz polarization control.*)
55. **August 2014:** SPIE Optics and Photonics conference on "Nanoscienc+Engineering: Metamaterials", San Diego, USA (August 18-21). (Title: *THz polarization control using chiral metamaterials - delivered by Anna Tasolambrou.*)
56. **August 2014:** "Metamaterials 2014: The 8th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics", Copenhagen, Denmark (August 25-28). (Title: *THz polarization control with chiral and bi-anisotropic metamaterials.*)
57. **March 2015:** "ICCMSE 2015: 11th International Conference on Computational Methods in Sciences and Engineering", Athens, Greece (March 20-23). (Title: *THz polarization control with chiral metamaterials.*)
58. **April 2015:** "OWTNN 2015: Optical wave and waveguide theory and numerical modelling workshop", London, UK (April 17-18). (Title: *Chiral and bianisotropic metamaterials for THz polarization control.*)
59. **May 2015:** "FANEM 2015: NATO Advanced Research Workshop on Fundamental and Applied NanoElectroMagnetics", Minsk, Belarus (May 25-27). (Title: *THz polarization control with chiral metamaterials.*)
60. **August 2015:** "META'15: The 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics", New York City, USA (August 4-7). (Title: *THz polarization control with chiral metamaterials.*) – talk kindly delivered by Prof. Philippe Tassin
61. **September 2015:** Metamorphose VI school "15 Years of Metamaterials: Past, Present and Future.", Oxford, UK (September 11-12). (Title: *Metamaterials: Road towards optical region.*)
62. **June 2018:** "META'18: The 9th International Conference on Metamaterials, Photonic Crystals and Plasmonics", Marseille, France (June 25-30). (Title: *Parity-Time symmetry in chiral metamaterials.*)
63. **July 2018:** "ICTON 2018 – 20th International Conference on Transparent Optical Networks", Bucharest, Romania (July 1-5). (Title: *Parity-Time symmetry in chiral metamaterials.*)
64. **July 2018:** (plenary) "ETOPIM11-, 11th International Conference on Electrical Transport and Optical Properties of Inhomogeneous Media", Krakow, Poland (July 16-20). (Title: *Combining chirality with Parity-Time symmetry in metamaterials.*)
65. **September 2018:** (plenary) "ICPAM-12 - 12th International Conference on Physics of Advanced Materials", Heraklion, Greece (September 22-28). (Title: *Metamaterials: New possibilities in electromagnetic wave control.*)
66. **May 2019:** "ICCMSE 2019: 15th International Conference on Computational Methods in Sciences and

- Engineering", Rhodes, Greece (May 1-5). (Title: *Combining chirality with Parity-Time symmetry in metamaterials.*)
67. **June 2019:** “PIERS 2019: Photonics and Electromagnetics Research Symposium”, Symposium on “Modelling of Metamaterials and Metasurfaces”, Rome, Italy (June 17-20) (Title: *Chiral metamaterials with Parity-Time symmetry.*)
 68. **June 2019:** “PIERS 2019: Photonics and Electromagnetics Research Symposium”, Symposium on “THz metamaterials, devices and systems”, Rome, Italy (June-17-20). (Title: *THz polarization control with chiral metamaterials.*)
 69. **June 2019:** “6th International Conference from Nanoparticles and Nanomaterials to Nanodevices and Nanosystems (6th IC4N), Corfu, Greece (June 30-July 3). (Title: *Parity-Time symmetry in chiral metamaterials.*)
 70. **September 2019:** Greek Panhellenic Conference on Solid State Physics and Materials Science, Patras, Greece (September 11-14). (Title: *Chiral metamaterials with Parity-Time symmetry.*)
 71. **September 2020:** "Metamaterials 2020: International Congress on Artificial Materials for Novel Wave Phenomena", Online conference due to Covid-19, September 28 – October 1. (Title: *Scattering Properties of Parity-Time Symmetric Chiral Metamaterials.*)
 72. **December 2020:** "Smart Nanomaterials (SNAIA)", Online conference due to Covid-19, December 8-11 (Title: *Chiral Metamaterials with Parity-Time (PT) Symmetry.*)
 73. **December 2020:** “Computational Materials Science Workshop” (online), organized by the Hellenic Society for the Science and Technology of Condensed Matter, December 19-20 (Title: *Metamaterials for advanced electromagnetic wave control*)
 74. **June 2021:** “Spintronics, Photonics, Phononics, Magneto-Optics (SPPM)” online conference, June 10, 2021 (Title: *Wave scattering in chiral parity-time (PT) symmetric metamaterials.*)
 75. **July 2021:** “Meta 2021 - The 11th International Conference on Metamaterials, Photonic Crystals and Plasmonics" (online conference), July 20-23 (Title: *Scattering properties of Parity-Time symmetric chiral metamaterials*)
 76. **September 2021:** “Metamaterials 2021: International Congress on Artificial Materials for Novel Wave Phenomena" (online conference) September 20-23 (Title: *Molecular Chirality Sensing employing Active and Parity-Time Symmetric Metamaterials*)
 77. **October 2021:** Keynote talk at “The 5th International Conference on Information, Control, and Communication Technologies (ICCT-2021)”, Astrakhan, Russia, October 4-7 (Title: *Software-controllable reconfigurable metasurfaces*)
 78. **December 2021:** “METAMAT2022: Global Summit on Metamaterials, Nanophotonics and Plasmonics”, (online conference), December 2-5 (Title: *Parity-Time symmetric and general gain-loss metamaterials for molecular chirality sensing*)
 79. **April 2022:** SPIE Photonics Europe 2022, Conference “Metamaterials", April 3-7, 2022, Strasbourg, France. (Talk title: *Molecular chirality sensing employing parity-time symmetric media*)
 80. **May 2022:** AES2022 Conference: The 8th International Conference on Antennas and Electromagnetic Systems, May 24-27, 2022, Marrakesh, Morocco. (Talk title: *Software-controllable reconfigurable metasurfaces for programmable wireless environments*)
 81. **July 2022:** ETOPI12: The 12th international conference on “Electrical Transport and Optical Properties of Inhomogeneous Media”, July 4-8, 2022, Besancon, France. (Talk title: *Molecular chirality sensing via parity-time symmetric and general loss-gain systems*)
 82. **July 2022:** MoleConference 2022, July 25-29, San Sebastian, Spain. (Talk title: *Molecular chirality sensing via parity-time symmetric and general loss-gain systems*)
 83. **September 2022:** Metamaterials 2022: The 16th International Conference on Artificial Materials for Novel Wave Phenomena, September 12-17, 2022, Siena, Italy. (Talk title: *Cylinder- and multi-coated-cylinder-systems as multifunctional metamaterials: An effective medium description*)

At Universities/Institutes/Organizations

1. **February 2010:** Sandia National Labs, Albuquerque, New Mexico, USA.

2. **May 2010:** Wright-Patterson Air Force Base, Dayton, Ohio, USA.
3. **November 2010:** FORTH - Institute of Chemical Engineering and High Temperature Chemical Processes, Patras, Greece.
4. **April 2011:** Technical Educational Institute of Crete, Heraklion, Greece.
5. **October 2013:** Physics Department, Belarusian State University, Minsk, Belarus.
6. **November 2013:** Physics Department, University of Crete.
7. **November 2018:** University of Exeter, UK.
8. **April 2021:** <https://meta-mat.org/> (Mechanical-Acoustic-Thermal Metamaterials Society).

Conferences organization/co-organization:

- The “1st Annual Workshop on Advances in Nanophotonics”, October 10-11, 2005, Heraklion, Crete, Greece.
- “Women in Photonics (WiP) School on Photonic Metamaterials”, April 13-18, 2008, Paris, France.
- The first “International Workshop on Computational and Theoretical Nano-Photonics (TaCoNa-Photonics 2008)”, December 3-5, 2008, Bad-Honnef, Germany.
- “XXIV Panhellenic Conference on Solid State Physics and Materials Science”, September 21-24, 2008, Heraklion, Crete, Greece.
- The 8th international conference on “Electrical Transport and Optical Properties of Inhomogeneous Media (ETOPIM8)”, June 7-12, 2009, Rethymnon, Crete, Greece.
- School on “Optical Properties of Nanostructured Metamaterials”, June 12-13, 2009, Rethymnon, Crete, Greece.
- “2nd Mediterranean Conference on Nanophotonics”, October 2009, Athens, Greece.
- The second “International Workshop on Computational and Theoretical Nano-Photonics (TaCoNa-Photonics 2009)”, October 28-30, 2009, Bad-Honnef, Germany.
- Organization of a special session "Optical Metamaterials" in Metamaterials 2010 Conference, September 13-16, Karlsruhe, Germany.
- "3rd Mediterranean Conference on Nanophotonics" (Medi-Nano 3), October 18-19, 2010, Belgrade, Serbia.
- "International Workshop on Theoretical and Computational Nanophotonics 2010" (TaCoNa-Photonics2010), November 3-5, 2010, Bad Honnef, Germany.
- School on “Experimental characterization of electromagnetic metamaterials”, December 13-17, 2010, Heraklion (FORTH), Crete, Greece.
- International conference "Wave Propagation: From Electrons to Photonic Crystals and Metamaterials", on the occasion of C. Soukoulis' 60th birthday, June 8-11, 2011, Rethymnon, Crete.
- "Metamaterials 2016: The 10th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics", September 19-22, 2016, Chania, Crete, Greece.
- Metamorphose Virtual Institute school "Metamaterials from THz to optics", September 17-18, 2016, Chania Crete, Greece.
- Organization of a special session "Software Controllable Metasurfaces", in Metamaterials 2018 Conference, August 27-30, Helsinki, Finland.

Committees:

- Program Committee in the SPIE conference *Optics and Optoelectronics: Metamaterials*, 16-18 April 2007, Prague, Czech Republic.
- Founding Committee of the *ETOPIM* (Electrical, Transport and Optical Properties of Inhomogeneous Media) Association.

- Program Committee in the SPIE conference *Photonics Europe: Matamaterials*, 7-11 April 2008, Strasbourg, France.
- Program Committee in the topical meeting *Nanophotonics, Photonic Crystals and Metamaterials* of the European Optical Society Annual Meeting, September 29 - October 2, 2008, Paris, France.
- Program Committee in the SPIE conference *Optics and Optoelectronics Symposium 2009: Metamaterials*, 20-24 April 2009, Prague, Czech Republic.
- Program Committee in the SPIE conference *Photonics Europe 2010: Metamaterials*, 12-16 April 2010, Brussels, Belgium.
- Program Committee in the conference *Metamaterials 2010*, 13-16 September 2010, Karlsruhe, Germany.
- Program Committee in the topical meeting *Nanophotonics and Metamaterials* of the European Optical Society Annual Meeting, 26-29 October, 2010, Paris, France.
- Program Committee in the SPIE conference *Photonics Europe 2011: Matamaterials*, April 12-16, Brussels, Belgium.
- Organizing committee of the EUPROMETA school on *Engineering applications of metamaterials*, October 14-15, 2011, Barcelona, Spain.
- Organizing Committee in the *4th Mediterranean Conference on Nanophotonics (MediNano4)*, October 24-25, 2011, Rome, Italy.
- Organizing Committee in the *International Workshop on Theoretical and Computational Nanophotonics 2011 (TaCoNa-Photonics2011)*, October 26-28, 2011, Bad Honnef, Germany.
- Committee of honour, *9th Conference on Electrical, Transport and Optical Properties of Inhomogeneous Media (ETOPIM 9)*, September 2-7, 2012, Marseille, France.
- Organizing committee of the conference *Metamaterials 2012*, September 17-22, 2012, St. Petersburg, Russia.
- Program committee in the topical meeting *Nanophotonics and Metamaterials* of the European Optical Society Annual meeting 2012, September 25-28, 2012, Aberdeen, Scotland.
- Organizing Committee in the *International Workshop on Theoretical and Computational Nanophotonics 2012 (TaCoNa-Photonics2012)*, October 24-26, 2012, Bad Honnef, Germany.
- Management committee of the *Metamorphose Virtual Institute of Metamaterials*, 2011-2013.
- Management committee of the COST Action MP0803 "Plasmonic Components and Devices".
- Program committee of the conference *ICONO/LAT 2013*, June 18-22, 2013, Moscow, Russia.
- Steering committee of the conference *Metamaterials 2013*, September 15-28, 2013, Bordeaux, France.
- Program committee of the conference "Metamaterials and Complex Media" of CLEO: 2014 Conference, June 8-13, San Jose, USA (Committee chair: Natalia Litchinitser).
- Steering committee of the conference *Metamaterials 2013*, August 25-28, 2013, Copenhagen, Denmark.
- Program committee of the conference "*Metamaterials and Complex Media*" of CLEO: 2015 Conference, May 10-15, San Jose, USA (Committee chair: Victor Podolskiy).
- Program committee of the conference *Metamaterials 2015*, September 2015, Oxford, UK (Committee chair: Martin Wegener).
- Governing Board member at the *Metamorphose Virtual Institute of Metamaterials*, 2014-2016.
- Programme Committee of the SPIE symposium Optics & Optoelectronics, Conference "Metamaterials", 24-27 April 2017, Prague, Czech Republic.
- Programme Committee of the SPIE symposium Photonics Europe, Conference "Metamaterials", 22-26 April 2018, Strasbourg, France.
- Award Committee for the *OSA Adolph Lomb Medal*, March 2017 to February 2019.
- Governing Board member at the *Metamorphose Virtual Institute of Metamaterials*, 2017-2018.
- Steering committee of the conference *Metamaterials 2018*, 27 August - 1 September, Helsinki, Finland.

- Program Committee in the SPIE conference Optics and Optoelectronics: Metamaterials XII, 1-4 April 2019, Prague, Czech Republic.
- Program Committee in the conference *Metamaterials 2019*, 16-19 September 2019, Rome, Italy.
- Advisory Board member of the EPSRC UK Metamaterials Network, 2021-2024
- Scientific Advisory Committee for the *ETOPIM 12* conference, 4-8 July, 2022, Besançon, France.
- Program Committee in the SPIE Symposium Photonics Europe 2020: Conference “Metamaterials”, 29 March - 2 April 2020, Strasbourg, France.
- Program Committee in the subconference *Plasmonics and Metamaterials*, CLEO Europe, June 21-25, 2021.
- Panel member of an ERC Advanced Grants evaluation panel, 2021-2022.
- Program Committee in the SPIE Symposium Photonics Europe 2022: Conference “Metamaterials”, 3-7 April 2022, Strasbourg, France.
- Program Committee in the conference *Metamaterials 2022*, 12-15 September 2022, Sienna, Italy.
- Program Committee in the subconference *Plasmonics and Metamaterials*, CLEO Europe, June 26-29, 2023.
- Award Committee for the *Charles Hard Townes Award*, Optica (2022-2024)

Editorial activities:

- Associate editor at *EPJ: Applied Metamaterials Journal*.
- Section editor at *JEOS:RP (Journal of European Optical Society: Rapid Publications)*.
- Guest editor at *Physica B*, Vol. 405, No. 14-15, 2010 (special issue for Proceedings of ETOPIM8 conference).
- Guest editor at *Metamaterials*, Vol. 5, Issues 2-3, 2011 (special issue for Proceedings of Metamaterials 2010 - Karlsruhe conference).
- Guest editor at *Physica B*, Vol. 407, Issue 20, 2012 (special issue for the Proceedings of WavePro conference).
- Guest editor at *Photonics and Nanostructures: Fundamentals and Applications*, Vol. 10, Issue 4, October 2012 (special issue for the Proceedings of the TaCoNa-Photonics 2011 conference).
- Guest editor at *Photonics and Nanostructures: Fundamentals and Applications*, Vol. 11, Issue 4, November 2013 (special issue for the Proceedings of the TaCoNa-Photonics 2012 conference).
- Advisory Editor at *Papers in Physics Journal* – since 2020.
- Guest editor at *Journal of the Optical Society of America B*, for the special issue *Light-matter interaction in complex photonic systems*, Vol. 38, No. 9, 2021.

Research programmes:

1. **2000-2002:** *Photonic Crystal Integrated Circuits (PCIC)*, FP5 EU-IST Programme. *Coordinator:* Ecole Polytechnique, France. *Role:* Researcher.
2. **2002-2006:** *Development and Analysis of Left-Handed Materials (DALHM)*, FP5 EU-IST Programme. *Coordinator:* FORTH. *Role:* Researcher.
3. **2004-2008:** *Metamaterials Organized for Radio, Millimeter Wave and Photonic Superlattice Engineering (METAMORPHOSE)*, FP6 EU-NoE Programme. *Coordinator:* Helsinki University of Technology, Finland. *Role:* Researcher.
4. **2004-2008:** *Nanophotonics to Realize Molecular Scale Technologies (PHOREMOST)*. FP6 EU-NoE Programme. *Coordinator:* University of Cork, Ireland. *Role:* Researcher.
5. **2004-2007:** *Development and Study of Left-Handed Materials*. Pythagoras Programme, Greek Ministry of National Education and Religion Affairs. *Role:* Researcher.

6. **2008-2011:** *Photonic Metamaterials (PHOME)*. FP7 EU-ICT-FET Programme. *Coordinator:* FORTH. *Role:* Researcher.
7. **2008-2012:** *Engineered Self-Organized Multicomponent Structures with Novel Controllable Electromagnetic Functionalities (ENSEMBLE)*. FP7 EU-NMP Programme. *Coordinator:* Institute of Electronic Materials Technology (ITME), Warsaw, Poland. *Role:* Prime Investigator.
8. **2008-2011:** *Electromagnetic Characterization of Nanostructured Materials (ECONAM)*. FP7 EU-NMP-CA Programme. *Coordinator:* Helsinki University of Technology, Finland. *Role:* Prime Investigator.
9. **2009-2012:** *Large Area Fabrication of 3D Negative Index Materials by Nanoimprint Lithography (NIMNIL)*. FP7 EU-NMP Programme. *Coordinator:* Profactor GmbH, Austria. *Role:* Researcher.
10. **2007-2012:** COST Action MP0702, *Towards Functional Sub-Wavelength Photonic Structures*. *Role:* Member.
11. **2007-2012:** COST Action MP0803, *Plasmonic Components and Devices*. *Role:* Member of the management board.
12. **2010-2013:** *Belarus in ERA Widening (By-Nanoera)*. FP7 INCO Programme. *Coordinator:* Belarusian State University. *Role:* Prime investigator.
13. **2012-2015:** *Extending Electromagnetism Through Novel Artificial Materials (EXEL)*. ERC-02, GSRT programme. *Coordinator:* FORTH (C. M. Soukoulis). *Role:* Associated Researcher.
14. **2013-2018:** *Photonic Metamaterials (PHOTOMETA)*. ERC-EU. *Coordinator:* FORTH (C. M. Soukoulis). *Role:* Associated Researcher.
15. **2014-2015:** *Nanostructured plasmonic reflectors for efficient thin film solar cells (SolarNano)*, Bilateral Greek-German Collaboration. *Role:* Prime Investigator.
16. **2014-...:** COST Action MP1403, *Nanoscale Quantum Optics*. *Role:* Participant.
17. **2014-2018:** Graphene flagship project *Graphene-Based Revolutions in ICT And Beyond (Graphene)*. Sub-project *Multi-layered sandwich graphene devices (Milesage)*. *Role:* Prime Investigator.
18. **2016-2018:** *Selective express tumor diagnostic with narrow band nanophotonic structures (EXODIAGNOS)*, ERA.Net RUS Plus project, under the EU FP7 Grant Agreement no 609556.
19. **2016-2019:** *Engineered light for biomedical and energy harvesting applications*. Qatar National Research Fund (QNRF) project. ID: NPRP9-383-1-083. *Role:* Prime Investigator.
20. **2017-2020:** *A Hardware Platform for Software-driven Functional Metasurfaces (Visorsurf)*. H2020 FET-OPEN project. *Role:* Assistant to Coordinator.
21. **2017-2020:** *Ultrasensitive chiral detection by signal-reversing cavity polarimetry: applications to in-situ proteomics, single-molecule chirality, HPLC analysis, medical diagnostics, and atmospheric studies appearance (Ultrachiral)*. Grant agreement ID: 737071. H2020-FETOPEN project. 1 Jan. 2017 – 31 Dec. 2021. *Role:* Participant.
22. **2019-2021:** *Artificial permittivity and permeability engineering for future generation sub wavelength analogue integrated circuits and systems (NANOPOLY)*. H2020 FETOPEN project. Grant agreement ID: 829061. Jan. 2019-Sept. 2022. *Role:* Participant.
23. **2020-2022:** *Metamaterial based, radio frequency and millimetre wave phase shifters for future generation phased array antenna applications (SMARTWAVE)*. H2020-EU.1.2.2. - FET Proactive project. Grant agreement ID: 952088. 1 Sept. 2020-31 August 2022. *Role:* Participant
24. **2021-2026:** *Chiral Metamaterials for THz Polarisation Control (CHARTIST)*, EU Marie Skłodowska-Curie Action. *Role:* PI
25. **2022-2024:** *Copying Wavefronts with Intelligent Surfaces for Efficient Augmented-reality/Virtual-reality (WISAR)*, FORTH-Synergy Grant. *Role:* PI

Students supervised/co-supervised:

PhD:

- Tamara-Funda Gudongdu, MST Dept., UoC, 2006-2009, title: *Theoretical and experimental studies of left-handed materials* (co-supervisor C. Soukoulis).
- Georgios Perrakis, Dept. of Materials Science and Technology (MST). University of Crete (Uoc), 2016 - April 2021, title: *Photonic approaches for the thermal control of photovoltaics*.
- Charalampos Mavidis, MST Dept., UoC, 2015 - April 2022, title: *Wave propagation in photonic crystals and metamaterials*.
- Ioannis Katsantonis, MST Dept., UoC, 2016 - ..., title: *Chiral metamaterials with Parity-Time symmetry*.
- Anna Theodosi, MST Dept., UoC, 2019-..., title: *Non-linear metamaterials and metasurfaces* (co-supervisor O. Tsilipakos).

Master:

- Costas-Othon Xatzimpaloglou, MST Dept., UoC, 2016-2017, title: *Metasurfaces for control of electromagnetic waves*.
- Alexandros Deltsidis, MST Dept., UoC, 2018-2019, title: *Metasurfaces for advanced wave control* (co-supervisor O. Tsilipakos).
- Aggeliki Zafeiropoulou, Physics Dept., Univ. of Athens, 2015-2016, title: *Realization and analysis of three-dimensional metamaterials* (co-supervisor M. Farsari).
- Aggelos Xomalis, MST Dept., UoC, 2014-2015, title: *3-D photonic structures fabricated by direct laser writing* (co-supervisor M. Farsari).
- Nikos Vasilantonakis, MST Dept., UoC, 2010-2011, title: *Fabrication of metallic photonic structures by two-photon polymerization* (co-supervisor M. Farsari).
- George Perrakis, MST Dept., UoC, 2015-2016, title: *Photon management in thin film solar cells*.
- Charalampos Mavidis, MST Dept., UoC, 2014-2015, title: *Electromagnetic wave control through photonic crystals and metamaterials*.

Diploma:

- Charalampos Mavidis, MST Dept., UoC, 2010, title: *Electromagnetic wave scattering by metallic and polaritonic cylinders*.
- Nikos Exelzes, MST Dept., UoC, 2011, title: *Design and characterization of microwave left-handed materials* (co-supervisor C. Soukoulis).
- Costas Efstathiou, MST Dept., UoC, 2011, title: *Analysis of the switching properties of a metamaterial under UV light* (co-supervisor C. Soukoulis).
- Nikolaos-Rafail Vrithias, MST Dept., UoC, 2016, title: *Electric dipole response of cut wires from mm scale to nanoscale* (co-supervisor G. Kenanakis).
- Despina Metzaki, MST Dept., UoC, 2016, title: *Metamaterials for sensing* (co-supervisor with G. Kenanakis).

Teaching experience:

2012 - ...: Associate Professor, Department of Materials Science and Technology, University of Crete. Courses:

- Modern Physics - Introduction to Quantum Mechanics
- Applied Mathematics (Complex Analysis, Linear Algebra, Probability Theory)
- Theoretical Materials Science (graduate course; for 2 semesters)

2004 - 2011: Adjunct Associate Professor, Department of Materials Science and Technology, University of Crete. Courses:

- Modern Physics - Introduction to Quantum Mechanics
- Applied Mathematics (Complex Analysis, Linear Algebra, Probability Theory)

1989 - 1996: Teaching Assistant, Physics Department, University of Crete.

Assistant at the courses

- General Mathematics (2 semesters)
- Ordinary Differential Equations (2 semesters)
- Partial Differential Equations (2 semesters)
- Modern Physics I [Quantum Physics] (3 semesters)
- Modern Physics II [Statistical Physics, Special Relativity, Particle Physics] (3 semesters)

Assistant at the laboratory courses

- Electricity and Magnetism (1 semester)
- Mechanics (1 semester)
- Modern Physics (2 semesters)

Computational experience:

- *Operational systems*: Good knowledge of Unix and of Windows.
- *Programming languages*: Large experience with Fortran 77 and knowledge of Fortran 90.
- Knowledge of Parallel Programming with Message Passing Interface (MPI).
- Knowledge of the use of high computing systems, such as Cray T3D, J90, etc.
- *Commercial programs*: CST Microwave Studio Electromagnetic Solver.

Other science-related activities:

External collaborator of the Crete University Press:

- Editing and revision of the book *Mathematical Methods of Physics*, Vol. 1, by I. D. Vergados, 2004.
- Translation (from English to Greek) of the scientific dictionary *McMillan Dictionary of the History of Science* (Physics, Astronomy and Geology entries), 2004.

Invited talks at schools for advertising Metamaterials and Materials Science:

- July 2013: Talk at a summer school organized by the "Pilot High School", Heraklion, Greece. Title: *Metamaterials: Designing Harry Potter? s magic cloak*.
- Talks advertising Materials Science and Materials Science Department in events organized by the secondary education.

Languages:

Greek (native language), English, Spanish (spoken).

School and conference attendance (excluding conferences with invited talks, which are mentioned in an earlier section):

1. **September 1993**: "Quantum Coherence in Microstructures", Hersonisos, Crete, Greece.
2. **June-July 1994**: Erasmus school in Heraklion, Crete, Greece on
 - i) Wave propagation in Disordered Media.
 - ii) Nonlinear phenomena in Condensed Matter Physics.
3. **June 1995**: NATO ASI on "Photonic Band Gap Materials", Elounta, Crete, Greece.
4. **May 1996**: "Interdisciplinary School on Wave Propagation in Random Media", Cargese, Corsica, France.
5. **March 1998**: "School on Diffuse Waves in Complex Media", Les Houches, France.
6. **October 1998**: "Percolation, Interaction, Localization: Simulations of Transport in Disordered Systems", Berlin, Germany.

7. **March 1999:** “The third Euroconference on Parallel and Distributed Computing for Computational Mechanics”, Weimar, Germany.
8. **June 2000:** NATO ASI on “Photonic Crystals and Light Localization”, Hersonisos, Crete, Greece.
9. **April 2001:** “Optical Waveguide Theory and Numerical Modelling”, Paderborn, Germany.
10. **June 2002:** NATO ASI “Wave Scattering in Complex Media”, Cargese, Corse.
11. **March 2004:** “Progress in Electromagnetism (PIERS)”, Piza, Italy.
12. **May 2005:** “Microtechnologies for the New Millenium”, SPIE Conf., Seville, Spain.
13. **June 2005:** “Photonic and Electromagnetic Crystal Structures (PECS) VI”, Agia Pelagia, Crete, Greece.
14. **July 2005:** “Summer School on Metamaterials”, San Sebastian, Spain.
15. **October 2005:** “1st annual workshop on Advances in Nanophotonics”, Heraklion, Crete, Greece.
16. **September 2006:** “2nd annual workshop on Advances in Nanophotonics”, Vilnius, Lithuania.
17. **April 2007:** “SPIE conference on Optics and Optoelectronics 2007”, Prague, Czech Republic.
18. **September 2007:** “XXIII Panhellenic Conference of Solid State Physics and Materials Science”, Athens, Greece.
19. **October 2007:** School on “The role of metamaterials in cloaking technology”, Rome, Italy.
20. **April 2008:** SPIE conference “Photonics Europe: Matamaterials”, Strasbourg, France.
21. **April 2008:** NATO Technical Workshop on “Photonic Metamaterials for Defense and Security Applications”, Strasbourg, France.
22. **April 2008:** “Women in Photonics School on Photonic Metamaterials”, Paris, France.
23. **May 2008:** “META08 - Metamaterials for Secure Information and Communication Technologies”, NATO Advanced Research Workshop, Marrakesh, Morocco.
24. **October 2009:** “ICO-Photonics: Emerging Trends and Novel Materials in Photonics”, Delphi, Greece.
25. **December 2010:** School on “Experimental characterization of electromagnetic metamaterials”, Heraklion (FORTH), Crete, Greece.
26. **October 2011:** School on "Engineering Applications of Metamaterials", Barcelona, Spain.
27. **October 2012:** "Micro & Nano 2012: The 5th International Conference on Micro - Nanoelectronics, Nanotechnologies and MEMS", Heraklion, Greece (October 7-10).
28. **September 2015:** "Metamaterials 2015: The 9th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics", Oxford, UK (September 7-10).