

## Publications List (2005-1012) Soukoulis

### 2005

1. M. Kafesaki, Th. 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 (2005).
2. P. Markos and C. M. Soukoulis, "Intensity distribution of scalar waves propagating in random media," *Phys. Rev. B* **71**, 054201 (2005).
3. R. Moussa, S. Foteinopoulou, Lei Zhang, G. Tuttle, K. Guven, E. Ozbay and C. M. Soukoulis, "Negative refraction and superlens behavior in a two-dimensional photonic crystal," *Phys. Rev. B* **71**, 085106 (2005).
4. D. R. Smith, D. C. Vier, Th. Koschny, and C. M. Soukoulis, "Electromagnetic parameter retrieval from inhomogeneous metamaterials," *Phys. Rev. E* **71**, 121103 (2005).
5. Th. Koschny, Lei Zhang, and C. M. Soukoulis, "Isotropic 3D left-handed and related metamaterials of the split-ring resonator and wire type," *Phys. Rev. B* **71**, 036617 (2005).
6. K. Aydin, K. Guven, C. M. Soukoulis, and E. Ozbay, "Observation of negative refraction and negative phase velocity in left-handed metamaterials," *Appl. Phys. Lett.* **86**, 124102 (2005).
7. N. Katsarakis, G. Konstantinidis, A. Kostopoulos, R. S. Penciu, T. F. Gundogdu, Th. Koschny, M. Kafesaki, E. N. Economou, and C. M. Soukoulis, "Magnetic response of split-ring resonators in the far infrared frequency regime," *Opt. Lett.* **30**, 1348 (2005).
8. Th. Koschny, P. Markos, E. N. Economou, D. R. Smith, D. C. Vier, and C. M. Soukoulis, "Impact of the inherent periodic structure on the effective medium description of left-handed and related metamaterials," *Phys. Rev. B* **71**, 245105 (2005).
9. S. Foteinopoulou and C. M. Soukoulis, "Electromagnetic wave propagation in 2D photonic crystals: A study of anomalous refractive effects," *Phys. Rev. B* **72**, 165112 (2005).
10. C. Enkrich, S. Linden, M. Wegener, S. Burger, L. Zschiedrich, F. Schmidt, J. Zhou, T. Koschny and C. M. Soukoulis, "Magnetic metamaterials at telecommunication and visible frequencies," *Phys. Rev. Lett.* **95**, 203901 (2005).
11. C. Enkrich, F. Perez-Willard, D. Gerthsen, J. Zhou, T. Koschny, C. M. Soukoulis, M. Wegener and S. Linden "Focused-ion-beam nanofabrication of near-infrared magnetic metamaterials," *Advanced Materials* **17**, 2543 (2005).
12. 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. Jaekel, and V. Sandoghdar, "Near field optics and control of photonic crystals," *Photonics and Nanostructures* **3**, 63 (2005).
13. G. Dolling, C. Enkrich, M. Wegener, S. Linden, J. Zhou, and C. M. Soukoulis, "Cut-wire and plate capacitors as magnetic atoms for optical metamaterials," *Opt. Lett.* **30**, 3198 (2005).
14. K. Aydin, I. Bulu, K. Guven, M. Kafesaki, C. M. Soukoulis, and E. Ozbay "Investigation of magnetic resonances for different split-ring resonator parameters and designs," *New Journal of Physics* **7**, 168 (2005).
15. A. F. Koenderink, M. Kafesaki, C. M. Soukoulis, and V. Sandoghdar, "Spontaneous emission in the near-field of 2d photonic crystals," *Opt. Lett.* **30**, 3210 (2005).
16. 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).
17. S. Burger, L. Zschiedrich, R. Klose, A. Schädle, F. Schmidt, C. Enkrich, S. Linden, M. Wegener, C. M. Soukoulis, "Numerical Investigation of Light Scattering off Split-Ring Resonators," *Proc. SPIE* **5955**, 18 (2005) (cond-mat/0510656).

### 2006

18. M. Gokkavas, K. Guven, I. Bulu, K. Aydin, M. Kafesaki, R. Penciu, C. M. Soukoulis, and E. Ozbay, "Experimental demonstration of a left-handed composite metamaterial operating at 100 GHz," *Phys. Rev. B* **73**, 193103 (2006).
19. J. Zhou, Lei Zhang, G. Tuttle, Th. Koschny and C. M. Soukoulis, "Negative index materials using simple short wire pairs," *Phys. Rev. B* **73**, 041101 (2006).
20. R. Penciu, M. Kafesaki, T. F. Gundogdu, E. N. Economou and C. M. Soukoulis, "Theoretical study of left-handed behavior of composite metamaterials," *Photonics and Nanostructures*, **4**, 12 (2006).
21. J. Zhou, Lei Zhang, G. Tuttle, Th. Koschny and C. M. Soukoulis, "Experimental demonstration of negative of index of refraction," *Appl. Phys. Lett.* **88**, 221103 (2006).

22. Th. Koschny, R. Moussa and C. M. Soukoulis, "Limits on the amplification of evanescent waves of left-handed materials," *J. Opt. Soc. Am. B* **23**, 485 (2006).
23. M. W. Klein, C. Enkrich, M. Wegener, C. M. Soukoulis and S. Linden, "Single-slit split-ring resonators at optical frequencies: Limits of size scaling," *Opt. Lett.* **31**, 1259 (2006).
24. A. F. Koenderink, M. Kafesaki, C. M. Soukoulis, V. Sandoghdar, "Spontaneous emission rates of dipoles in photonic crystal membranes," *J. Opt. Soc. Am. B* **23**, 1196 (2006).
25. 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).
26. S. Linden, C. Enkrich, G. Dolling, M. W. Klein, J. Zhou, Th. Koschny, C. M. Soukoulis, S. Burger, F. Schmidt, and M. Wegener, "Photonic metamaterials: Magnetism at optical frequencies," *IEEE J. of Selected Topics in Quant. Electr.* **12**, 1097 (2006).
27. C. M. Soukoulis, M. Kafesaki and E. N. Economou "Negative index materials: New frontiers in optics," *Adv. Mater.* **18**, 1941 (2006).
28. H. Danithe, S. Foteinopoulou and C. M. Soukoulis, "Omni-reflectance and enhanced resonant tunneling from multilayers containing left-handed materials," *Photonics and Nanostructures* **4**, 123 (2006).
29. G. Dolling, C. Enkrich, M. Wegener, C. M. Soukoulis and S. Linden, "Observation of simultaneous negative phase and group velocity of light," *Science* **312**, 892 (2006).
30. G. Dolling, C. Enkrich, M. Wegener, C. M. Soukoulis and S. Linden, "A low-loss negative index metamaterial at telecommunication wavelengths," *Opt. Lett.* **31**, 1800 (2006).
31. R. Moussa, Th. Koschny, and C. M. Soukoulis, "Excitation of surface waves in photonic crystal left-handed materials: Role of surface termination," *Phys. Rev. B* **74**, 115111 (2006).
32. B. Wang, W. Dai, A. Fang, L. Zhang, G. Tuttle, Th. Koschny, and C. M. Soukoulis, "Existence of surface waves in photonic crystals," *Phys. Rev. B* **74**, 195104 (2006).
33. J. Zhou, E. N. Economou, Th. Koschny and C. M. Soukoulis, "A unifying approach to left handed materials design," *Opt. Lett.* **31**, 3620 (2006).

## 2007

34. G. Dolling, M. Wegener, C. M. Soukoulis and S. Linden, "Negative-index metamaterial at 780 nm wavelength," *Opt. Lett.* **32**, 53 (2007).
35. C. M. Soukoulis, S. Linden and M. Wegener, "Negative refractive index at optical wavelengths," *Science*, **315**, 47 (2007).
36. M. Kafesaki, Th. Koschny, J. Zhou, N. Katsarakis, I. Tsiapa, E. N. Economou and C. M. Soukoulis, "Electromagnetic behavior of left-handed materials," *Physica B* **394**, 148 (2007).
37. C. M. Soukoulis, Th. Koschny, J. Zhou, M. Kafesaki and E. N. Economou, "Electric and magnetic response of split ring resonators at THz frequencies," *Phys. Status Solidi B* **244**, 1181 (2007).
38. 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 (2007).
39. 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 (2007).
40. S. Foteinopoulou, M. Kafesaki, E. N. Economou and C. M. Soukoulis, "Backward surface waves at photonic crystals," *Phys. Rev. B* **75**, 245116 (2007).
41. Th. Koschny, J. Zhou and C. M. Soukoulis, "Magnetic response and negative refractive index of metamaterials," *Proc. SPIE* **6581**, 658103 (2007).
42. G. Dolling, M. Wegener, C. M. Soukoulis and S. Linden, "Design-related losses of double-fishnet negative-index photonic metamaterials," *Optics Express* **15**, 1153 (2007).
43. K. Guven, A. D. Cakmak, M. D. Caluska, , E. Ozbay, T. F. Gundogdu, M. Kafesaki and C. M. Soukoulis, "Bilayer metamaterial: Analysis of left-handed transmission and retrieval of effective medium parameters," *J. of Opt. A: Pure and Appl. Opt.* **9**, S361 (2007).
44. J. Zhou, Th. Koschny and C. M. Soukoulis, "Magnetic and electric excitation of split ring resonators," *Optics Express* **15**, 17881 (2007).
45. R. Moussa, B. Wang, G. Tuttle, Th. Koschny and C. M. Soukoulis, "On the beaming and enhanced transmission in photonic crystals," *Phys. Rev. B* **76**, 235417 (2007).
46. S. Foteinopoulou, G. Kenanakis, N. Katsarakis, I. Tsiapa, M. Kafesaki, E. N. Economou and C. M. Soukoulis, "Experimental verification of backwards wave propagation at photonic crystal surfaces," *Appl. Phys. Lett.* **91**, 214102 (2007).
47. T. F. Gundogdu, M. Gokkavas, K. Guven, M. Kafesaki, C. M. Soukoulis and E. Ozbay, "Simulations and micro-fabrication of optically switchable split ring resonators," *Photonics and Nanostructures* **5**, 106 (2007).

## 2008

48. 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 (2008).
49. E. N. Economou, Th. Koschny and C. M. Soukoulis, "Strong diamagnetic response of metamaterials," *Phys. Rev. B* **77**, 092401 (2008).
50. 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).
51. W. Dai, B. Wang, Th. Koschny and C. M. Soukoulis, "Experimental verification of quantized conductance for microwave frequencies in photonic crystal waveguides," *Phys. Rev. B* **78**, 073109 (2008).
52. 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," *Optics Express* **16**, 9173 (2008).
53. J. Zhou, Th. Koschny and C. M. Soukoulis, "An efficient way to reduce losses of left-handed metamaterials," *Optics Express* **16**, 11147 (2008).
54. R. S. Penciu, K. Aydin, M. Kafesaki, Th. Koschny, E. Ozbay, E. N. Economou, and C. M. Soukoulis, "Multi-gap individual and coupled split-ring resonator structures," *Optics Express* **16**, 16131 (2008).
55. B. Wang, J. Zhou, Th. Koschny and C. M. Soukoulis, "Nonlinear properties of split ring resonators," *Optics Express* **16**, 16058 (2008).
56. M. Wegener, J. L. García-Pomar, C. M. Soukoulis, N. Meinzer, M. Ruther, and S. Linden, "Toy model for plasmonic metamaterial resonances coupled to two-level system gain," *Optics Express* **16**, 19785 (2008).
57. W. Dai, and C. M. Soukoulis, "Converging and waveguiding of a Gaussian beam by two-layer dielectric rods," *Appl. Phys. Lett.* **93**, 201101 (2008).

## 2009

58. E. Plum, J. Dong, J. Zhou, V. A. Fedotov, Th. Koschny, C. M. Soukoulis, and N. I. Zheludev, "Metamaterial with Negative Index due to Chirality," *Phys. Rev. B* **79**, 035407 (2009); (Selected for a Viewpoint in *Physics* **2**, 3 (2009)).
59. M. Diem, Th. Koschny and C. M. Soukoulis, "Wide-angle perfect absorber/thermal emitter in the THz regime," *Phys. Rev. B* **79**, 033101 (2009).
60. D. Ö. Güney, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, "Connected bulk negative index photonic metamaterials for direct laser writing," *Optics Letters* **34**, 506 (2009).
61. P. Tassin, Lei Zhang, Th. Koschny, E. N. Economou and C. M. Soukoulis, "Low loss metamaterials based on Electromagnetic Induced Transparency," *Phys. Rev. Lett.* **102**, 053901 (2009).
62. 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).
63. B. Wang, J. Zhou, Th. Koschny and C. M. Soukoulis, "Non planar chiral metamaterials with negative index," *Appl. Phys. Lett.* **94**, 151112 (2009).
64. Nian-Hai Shen, M. Kafesaki, Th. Koschny, Lei Zhang, E. N. Economou and C. M. Soukoulis, "Broadband blue-shift tunable metamaterials and dual-band switches," *Phys. Rev. B* **79**, 161102(R) (2009).
65. P. Tassin, Lei Zhang, Th. Koschny, E. N. Economou and C. M. Soukoulis, "Planar designs for electromagnetically induced transparency in metamaterials," *Optics Express* **17**, 5595 (2009).
66. A. Fang, Th. Koschny and C. M. Soukoulis, "Optical anisotropic metamaterials: Negative refraction and focusing," *Phys. Rev. B* **79**, 245127 (2009).
67. A. Fang, Th. Koschny, M. Wegener and C. M. Soukoulis, "Self-consistent calculation of metamaterials with gain," *Phys. Rev. B* **79**, 241104(R) (2009).
68. 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).
69. B. Wang, J. Zhou, M. Kafesaki, Th. Koschny and C. M. Soukoulis, "Chiral metamaterials: Simulations and experiments," *J. Opt. A: Pure and Appl. Optics* **11**, 114003 (2009).
70. R. Zhao, J. Zhou, Th. Koschny, E. N. Economou and C. M. Soukoulis, "Repulsive Casimir force in chiral metamaterials," *Phys. Rev. Lett.* **103**, 103602 (2009).
71. B. Wang, Th. Koschny, and C. M. Soukoulis, "Wide-angle and polarization independent chiral metamaterials absorbers," *Phys. Rev. B* **80**, 033108 (2009).
72. E. N. Economou, M. Kafesaki, Th. Koschny and C. M. Soukoulis, "The fourth quadrant in the  $\epsilon$ ,  $\mu$  plane: A new frontier in optics," *Journal of Computational and Theoretical Nanoscience* **6**, 1827 (2009).

73. M. Decker, M. Ruther, C.E. Kriegler, J. Zhou, C.M. Soukoulis, S. Linden, and M. Wegener, "Strong optical activity from twisted-cross photonic metamaterials," *Optics Letters* **34**, 2501(2009).
74. J. Dong, J. Zhou, Th. Koschny, and C. M. Soukoulis, "Bi-layer cross chiral structure with strong optical activity and negative refractive index," *Optics Express* **17**, 14173 (2009).
75. D. Ö. Güney, Th. Koschny, and C. M. Soukoulis, "Reducing Ohmic losses in metamaterials by geometric tailoring," *Phys. Rev. B* **80**, 125129 (2009).
76. Nian-Hai 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).
77. W. Dai and C. M. Soukoulis, "Theoretical analysis of the surface wave along a metal-dielectric interface," *Phys. Rev. B* **80**, 155407 (2009).
78. Nian-Hai Shen, G. Kenakakis, M. Kafesaki, N. Katsarakis, E. N. Economou and C. M. Soukoulis, "Parametric investigation and analysis of fishnet metamaterials in the microwave regime," *JOSA B* **26**, B61 (2009).

## 2010

79. A. Fang, Th. Koschny, and C. M. Soukoulis, "Lasing in metamaterials nanostructures," *J. Opt.* **12**, 024013 (2010).
80. J.-M. Manceau, N.-H. Shen, M. Kafesaki, C. M. Soukoulis, and S. Tzortzakis, "Dynamic response of metamaterials in the terahertz regime: Blue shift tunability and broadband phase modulation," *Appl. Phys. Lett.* **96**, 021111 (2010).
81. Z. Li, H. Caglayan, E. Colak, J. Zhou, C. M. Soukoulis, and E. Ozbay, "Coupling effect between two adjacent chiral structures layers," *Opt. Exp.* **18**, 5375 (2010).
82. D. Ates, A. O. Cakmak, E. Colak, R. Zhao, C. M. Soukoulis, and E. Ozbay, "Transmission enhancement through deep subwavelength apertures using connected SRRs," *Opt. Exp.* **18**, 3952 (2010).
83. M. Diem, Th. Koschny, and C.M. Soukoulis, "Transmission in the vicinity of the Dirac point in hexagonal photonic crystals," *Physica. B.* **405**, 2990 (2010).
84. M. Decker R. Zhao, C.M. Soukoulis, S. Linden, and M. Wegener, "Twisted split-ring-resonator photonic metamaterial with huge optical activity," *Opt. Lett.* **35**, 1593 (2010).
85. D. Ö. Güney, Th. Koschny, and C. M. Soukoulis, "Intra-connected 3D isotropic bulk negative index photonic metamaterial," *Opt. Exp.* **18**, 12352 (2010).
86. W. Dai and C. M. Soukoulis, "Control of beaming angles via a subwavelength metallic slit surrounded by grooves," *Phys. Rev. B* **82**, 045427 (2010).
87. R. Zhao, Th. Koschny, E. N. Economou and C. M. Soukoulis, "Comparison of chiral metamaterials for repulsive Casimir force," *Phys. Rev. B* **81**, 235126 (2010).
88. Z. Li, R. Zhao, Th. Koschny, M. Kafesaki, E. Colak, H. Caglayan, E. Ozbay and C. M. Soukoulis, "Chiral metamaterials with negative refractive index based on Four-U-SRRs resonators," *Appl. Phys. Lett.* **97**, 081901 (2010).
89. 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).
90. R. Zhao, Th. Koschny and C. M. Soukoulis, "Chiral metamaterials: Retrieval of the effective parameters with and without substrate," *Opt. Express* **18**, 14553 (2010).
91. V. Ginis, P. Tassin, C. M. Soukoulis, I. Veretennicoff, "Confining light in deep sub-wavelength electromagnetic cavities," *Phys. Rev. B.* **82**, 113102 (2010).
92. A. Fang, Th. Koschny, and C. M. Soukoulis, "Self-consistent calculations of loss compensated fishnet metamaterials," *Phys. Rev. B* **82**, 121102 (R) (2010).
93. A. P. McCauley, R. Zhao, M. T. Homer Reid, A. W. Rodriguez, J. Zhou, F. S. S. Rosa, J. D. Joannopoulos, D. A. R. Dalvit, C. M. Soukoulis, and S. G. Johnson, "Microstructure Effects for Casimir Forces in Chiral Metamaterials," *Phys. Rev. B* **82**, 165108 (2010).
94. N. Meinzer, M. Ruther, S. Linden, C. M. Soukoulis, G. Khitrova, J. Hendrickson, J. D. Olitsky, H. M. Gibbs and M. Wegener, "Arrays of Ag split-ring resonators coupled to InGaAs single-quantum-well gain," *Opt. Express* **18**, 24140 (2010).
95. R. Zhao, P. Tassin, Th. Koschny and C. M. Soukoulis, "Optical forces in nanowire pairs and metamaterials," *Opt. Express* **18**, 25665 (2010).
96. R. Zhao, J. Zhou, Th. Koschny, E. N. Economou and C. M. Soukoulis, Respond to the comment on "Repulsive Casimir force in chiral metamaterials," *Phys. Rev. Lett.* **105**, 189302 (2010).
97. Lei Zhang, P. Tassin, Th. Koschny, C. Kurter, S. M. Anlage and C. M. Soukoulis, "Large group delay in a microwave metamaterial analog of Electromagnetic Induced Transparency," *Appl. Phys. Lett.* **97**, 241904 (2010).
98. C. M. Soukoulis and M. Wegener, "Optical metamaterials: More bulky and less lossy," *Science* **330**, 1633 (2010).

## 2011

99. N. H. Shen, M. Massauti, M. Gokkavas, J. M. Manceau, E. Ozbay, S. Tzortzakis, M. Kafesaki, and C. M. Soukoulis, "Optical implemented broadband blue-shift switch in the terahertz regime," *Phys. Rev. Lett.* **106**, 037403 (2011).
100. D. Ö. Güney, Th. Koschny, and C. M. Soukoulis, "Surface plasmon driven electric and magnetic resonators for metamaterial," *Phys. Rev. B* **83**, 045107 (2011).
101. R. Zhao, Lei Zhang, J. Zhou, Th. Koschny and C. M. Soukoulis, "Conjugated gammadion chiral metamaterials with optical activity and negative refractive index," *Phys. Rev. B* **83**, 035105 (2011).
102. R. Zhao, Th. Koschny, E. N. Economou and C. M. Soukoulis, "Repulsive Casimir forces with finite-thickness functional slabs," *Phys. Rev. B.* **83**, 075108 (2011).
103. A. Fang, Z. Huang Th. Koschny, and C. M. Soukoulis, "Overcoming losses of a split ring resonator array with gain," *Opt. Express* **19**, 12688 (2011).
104. C. M. Soukoulis and M. Wegener, "Past Achievements and Future Challenges in the development of 3D photonic metamaterials," *Nat. Phot.* **5**, 523 (2011).
105. M. Decker, N. Feth C.M. Soukoulis, S. Linden, and M. Wegener, "Retarded long-range interaction in split-ring-resonator square arrays," *Phys. Rev. B.* **84**, 085416 (2011).
106. 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).
107. C. Kurter, P. Tassin, Lei Zhang, Th. Koschny, A. P. Zhuravel, A. V. Ustinov, S. M. Anlage and C. M. Soukoulis, "Classical analogue of Electromagnetic Induced Transparency with a metal/superconductor hybrid metamaterial," *Phys. Rev. Lett.* **107**, 043901 (2011).
108. K. B. Alici, A. B. Turhan, C. M. Soukoulis, and E. Ozbay, "Optically thin composite resonant absorber at the near-infrared band: a polarization independent and spectrally broadband configuration," *Opt. Express* **19**, 14260 (2011).
109. I. Bergmair, B. Dastmalchi, M. Bergmair, A. Saeed, W. Hilber, G. Hesser, C. Helgert, E. Pshenay-Severin, T. Pertsch, E. B. Kley, U. Hubner, N. H. Shen, R. Penciu, M. Kafesaki, C. M. Soukoulis, K. Hingerl, M. Muehlberger and R. Schoeffner, "Single and multilayer metamaterials fabricated by nanoimprint lithography," *Nanotechnology*, **22**, 325301 (2011).

## 2012

110. A. Fang, Z. Huang Th. Koschny, and C. M. Soukoulis, "Loss compensated negative index materials at optical wavelengths," *Photonics and Nanostructures* **10**, 276 (2012).
111. P. Tassin, Th. Koschny, M. Kafesaki and C. M. Soukoulis, "A comparison of graphene, superconductors and metals as conductors for metamaterials and plasmonics" *Nat. Phot.* **6**, 259 (2012).
112. C. Kurter, P. Tassin, A. P. Zhuravel, Lei Zhang, Th. Koschny, A. V. Ustinov, S. M. Anlage and C. M. Soukoulis, "Switching nonlinearity of Metamaterial-Induced Transparency Windows," *Appl. Phys. Lett.* **100**, 121906 (2012).
113. N. Vasilantonakis, K. Terzaki, I. Kakellari, V. Purlys, D. Gray, C. M. Soukoulis, M. Vamvakaki, M. Kafesaki and M. Farsari, "3D Metallic Photonic Crystals with Optical Bandgaps," *Adv. Mater.* **24**, 1101 (2012).
114. Z. Huang Th. Koschny, and C. M. Soukoulis, "Theory of pump-probe experiments of metallic metamaterials coupled to the gain medium," *Phys. Rev. Lett.* **108**, 187402 (2012).
115. N. H. Shen, Th. Koschny, M. Kafesaki, and C. M. Soukoulis, "Optical metamaterials with different metals," *Phys. Rev. B.* **85**, 075120 (2012).
116. V. Ginis, P. Tassin, J. Danckaert, C. M. Soukoulis, I. Veretennicoff, "Creating electromagnetic cavities using transformation cavities," *New J. of Physics* **14**, 033007 (2012).
117. Z. Li, K. B. Alici, H. Caglayan, M. Kafesaki, C. M. Soukoulis, and E. Ozbay, "Composite chiral metamaterials with negative refractive index and high values of figures of merits," *Opt. Express* **20**, 6146 (2012).
118. Lei Zhang, Th. Koschny, and C. M. Soukoulis, "Young's double-slit experiments in photonic crystals," *Physica B* **406**, 4048 (2012).
119. P. Tassin, Th. Koschny, and C. M. Soukoulis, "Effective material parameter retrieval for thin sheets: theory and application to graphene, thin silver films, and single-layer metamaterials," *Physica B* **406**, 4062 (2012).
120. A. Basharin, M. Kafesaki, E. N. Economou and C. M. Soukoulis, "Backward wave radiation from negative permittivity waveguides and its use for THz subwavelength imaging," *Opt. Express* **20**, 12752 (2012).

121. J. Zhou, D. R. Chowdhury, R. Zhao, A. K. Azad, H.T. Chen, C. M. Soukoulis, A. J. Taylor and J. F. O'Hara, "Active Terahertz chiral metamaterials with tunable optical activity," *Phys. Rev. B* **86**, 035448 (2012).
122. J. Zou, P. Tassin, Th. Koschny, and C. M. Soukoulis, "Interaction between graphene and metamaterials: Split rings vs. wire pairs," *Opt. Express* **20**, 12198 (2012).
123. A. Reyes-Coronado, M. F. Acosta, R. I. Merino, and V. M. Orera, G. Kenanakis, N. Katsarakis, M. Kafesaki, Ch. Mavidis, J. Garcia de Abajo, E. N. Economou, and C. M. Soukoulis, "Self-organization approach for THz polaritonic metamaterials," *Opt. Express* **20**, 14663 (2012).
124. C. Fietz and C. M. Soukoulis, "Finite element simulation of microphotonic lasing system," *Opt. Express* **20**, 11548 (2012).
125. 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," *Physica B* **406**, 4070 (2012).
126. P. Tassin, Lei Zhang, R. Zhao, A. Jain, Th. Koschny, and C. M. Soukoulis, "Electromagnetically Induced Transparency and Absorption in Metamaterials: The Radiating Two-Oscillator Model and Experimental Confirmation," *Phys. Rev. Lett.* **109**, 187401 (2012).
127. C. Fietz and C. M. Soukoulis, "Scattering matrix of the boundary of a nonlocal metamaterial," *Phys. Rev. B* **86**, 085146 (2012).
128. M. Kafesaki, N. H. Shen, S. Tzortzakis, and C. M. Soukoulis, "Optically switchable and tunable THz metamaterials through photoconductivity," *J. of Optics* **14**, 114008 (2012).
129. I. Chatzakis, L. Luo, J. Wang, N-H Shen, T. Koschny, J. Zhou and C. M. Soukoulis, "Reversible modulation and ultrafast dynamics of THz resonances in strongly photoexcited metamaterials," *Phys. Rev. B* **86**, 125110 (2012).
130. N. H. Shen, Lei 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).
131. G. Kenanakis, R. Zhao, A. Stavriniadis, G. Konstantinidis, N. Katsarakis, M. Kafesaki, C. M. Soukoulis, and E. N. Economou, "Flexible chiral metamaterials in the terahertz regime: a comparative study of various designs," *Opt. Mater. Express* **2**, 1705 (2012).