

## Peer reviewed articles

1. S. Enoch and H. Akhouayri, "Bistable prism coupler with both second- and third-order nonlinearities", *Journal of Optical Society of America B* **14**, 588-592 (1997)
2. S. Enoch and H. Akhouayri, "Second-harmonic specular and scattered generated light : Application to the experimental study of zinc sulfide thin films", *Applied Optics* **36**, 6319-6324 (1997).
3. S. Enoch and H. Akhouayri, "Second harmonic generation in multilayered devices : theoretical tools", *Journal of Optical Society of America B* **15**, 1030-1041 (1998)
4. S. Enoch, "Second-harmonic scattered light from one-dimensional rough thin films", *Optics Communications* **148**, 137-143 (1998)
5. S. Enoch, H. Akhouayri, C. Deumié and C. Amra, "Second-harmonic scattered light from a zinc sulfide thin film", *Optics Communications* **161**, 177-181 (1999).
6. S. Enoch, G. Tayeb and D. Maystre, "Numerical evidence of ultrarefractive optics in photonic crystals", *Optics Communications* **161**, 171-176 (1999)
7. B. Gralak, S. Enoch and G. Tayeb, "Anomalous refractive properties of photonic crystals.", *Journal of Optical Society of America A* **17**, 1012-1020 (2000)
8. E. Popov, M. Nevière, S. Enoch, R. Reinish, "Theory of light transmission through subwavelength periodic hole arrays", *Physical Review B* **62**, 16100-16108 (2000).
9. N. Guérin, S. Enoch and G. Tayeb, "Combined Method for the Computation of the Doubly Periodic Green's Function", *J. Electromagn. Waves Appl.* **15**, 205-221 (2001).
10. S. Enoch, G. Tayeb and D. Maystre, " Dispersion diagrams of Bloch modes applied to the design of directive sources", *Progress In Electromagnetics Research, Special Issue on "Electromagnetic Applications of PBG Materials and Structures"*, Guest Editors : T. Itoh and A. Priou, **41**, 61-81 (2003).
11. S. Enoch, R. C. McPhedran, N. A. Nicorovici, L. C. Botten and J. N. Nixon, "Sums of spherical waves for lattices, layers and lines", *J. Math. Phys* **42**, 5859-5870 (2001).
12. A.L. Fehrembach, S. Enoch and A. Sentenac, "Highly directive source devices using slab photonic crystal", *Applied Physics Letters* **79**, 4280-4282 (2001).
13. B. Gralak, S. Enoch and G. Tayeb, "From scattering or impedance matrices to Bloch modes of photonic crystals", *Journal of Optical Society of America A* **19**, 1547-1554 (2002).
14. B. Gralak, G. Tayeb and S. Enoch, " *Morpho* butterflies wings color modeled with lamellar grating theory ", *Optics Express* **9**, 567-578 (2001).  
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15. S. Enoch, B. Gralak and G. Tayeb, "Enhanced emission with angular confinement from photonic crystal", *Applied Physics Letters* **81**, 1588-1590 (2002).
16. S. Enoch, E. Popov, M. Nevière and R. Reinish, "Enhanced light transmission by hole arrays", *J. Opt. A: Pure Appl. Opt.* **4**, S83-S87 (2002).
17. S. Enoch, G. Tayeb, P. Sabouroux, N. Guérin and P. Vincent, "A metamaterial for directive emission", *Phys. Rev. Lett.* **89**, 213902 (2002).
18. N. Bonod, S. Enoch, L. Li, E. Popov and M. Nevière, "Resonant optical transmission through thin metallic film without holes", *Optics Express* **11**, 483-490 (2003), <http://www.opticsexpress.org/abstract.cfm?URI=OPEX-11-5-482>.
19. S. Enoch, G. Tayeb and B. Gralak, "The richness of the dispersion relation of electromagnetic band gap materials", *IEEE Trans. Ant. Prop.* **51**, 2659-2666 (2003), Special Issue on Metamaterials.
20. B. Gralak, M. De Dood, G. Tayeb, S. Enoch and D. Maystre, "Theoretical study of bandgaps in woodpile crystals", *Phys. Rev. E* **67**, 066601-1-18 (2003).
21. D. Maystre and S. Enoch, "Perfect lenses made with left handed materials: Alice's mirror", *J. Opt. Soc. Am. A* **21**, 122-131 (2004).
22. D. N. Chigrin, S. Enoch, C. M. Sotomayor Torres and G. Tayeb, "Self-guiding in two-dimensional photonic crystals", *Optics Express* **11**, 1203-1211 (2003), <http://www.opticsexpress.org/abstract.cfm?URI=OPEX-11-10-1203>.
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25. G. Tayeb, and S. Enoch, "Combined Fictitious Sources – Scattering Matrix method", *J. Opt. Soc. Am. A* **21**, 1417-1423 (2004).
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30. D. Maystre, S. Enoch, B. Gralak and G. Tayeb, "Metamaterial: from microwaves to visible region", *C. R. Physique* **6**, 693-701 (2005).
31. E. Popov, S. Enoch, "Photonic crystal surface modes narrow-band filtering", *Optics Express* **13**, 5783-5790 (2005)  
<http://www.opticsexpress.org/abstract.cfm?URI=OPEX-13-15-5783>
32. J. Césario, R. Quidant, G. Badenes and S. Enoch, "Electromagnetic coupling between a metallic nano-particle grating and a metallic surface.", *Opt. Lett.* **30**, 3404-3406 (2005).
33. S. Enoch, E. Popov, and N. Bonod, "Analysis of the physical origin of surface modes on finite size photonic crystals," *Phys. Rev. B* **72**, 155101 (2005).
34. N. Guérin, S. Enoch, G. Tayeb, P. Sabouroux, P. Vincent, H. Legay, "A metallic Fabry-Perot directive antenna", *IEEE Trans. Ant. Prop.* **54**, 220-224 (2006).
35. A. Della Villa, V. Galdi, F. Capolino, V. Pierro, S. Enoch, and G. Tayeb, "A comparative study of representative categories of EBG dielectric quasicrystals", *IEEE Antennas and Wireless Propagation Letters* **5**, 331-333 (2006).
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37. A. Della Villa, S. Enoch, G. Tayeb, F. Capolino, V. Pierro, and V. Galdi, "Localized modes in photonic quasicrystals with Penrose-type lattice," *Opt. Express* **14**, 10021-10027 (2006). <http://www.opticsinfobase.org/abstract.cfm?URI=oe-14-21-10021>
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39. N. Bonod, E. Popov, S. Enoch, and J. Néauport, "Polarization insensitive blazed diffraction gratings" *J. European Optical Society-Rapid Publications* **1**, 06029 (2006).
40. E. Popov, S. Enoch, and M. Nevière, "Plasmon surface waves and complex-type surface waves: comparative analysis on single interfaces, lamellar gratings, and 2-dimensional hole arrays", *Applied Optics* **46**, 154-160 (2007).

41. G. Benelli, S. Enoch, and G. Tayeb, "Modelling of a single object embedded in a layered medium", *Journal of Modern Optics* **54**, 871-880 (2007).
42. E. Popov, N. Bonod, and S. Enoch, "Comparison of plasmon surface waves on shallow and deep metallic 2D and 3D gratings", *Optics Express* **15**, 4224-4237 (2007).
43. X. Checoury, S. Enoch, A. Blanco and C. Lopez, "Stacking patterns in self-organized opal photonic crystal", *Appl. Phys. Lett.* **90**, 161131 (2007).
44. E. Popov, N. Bonod, S. Enoch, "Non-Bloch plasmonic stop-band in real-metal gratings", *Optics Express* **15**, 6241-6250 (2007).
45. J. Zhang, H. Jiang, B. Gralak, S. Enoch, G. Tayeb, and M. Lequime, "Towards -1 effective index with one-dimensional metal-dielectric metamaterial: a quantitative analysis of the role of absorption losses", *Optics Express* **15**, 7720-7729 (2007).
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47. J. Cesario, M. U. Gonzalez, S. Cheylan, W. L. Barnes, S. Enoch, and R. Quidant, "Plasmon engineering as a route to improving the light extraction through metal films", *Optics Express* **15**, 10533-10539 (2007)
48. S. Guenneau, S. A. Ramakrishna, S. Enoch, S. Chakrabarti, G. Tayeb, and B. Gralak, "Cloaking and imaging effects in plasmonic checkerboards of negative  $\epsilon$  and  $\mu$  and dielectric photonic crystal checkerboards", *Photonics and Nanostructures - Fundamentals and Applications* **5**, 63-72 (2007).
49. B. Butun, J. Cesario, S. Enoch, R. Quidant, and E. Ozbay, "InGaN green light emitting diodes with deposited nanoparticles", *Photonics and Nanostructures – Fundamentals and Applications* **5**, 86-90 (2007).
50. E. Popov and S. Enoch, "The mystery of the double limit in homogenization of finitely or perfectly conducting periodic structures", *Optics Lett.* **32**, 3441-3443 (2007).
51. J. Zhang H. Jiang, S. Enoch, G. Tayeb, B. Gralak and M. Lequime, "Two-dimensional complete band gaps in one-dimensional metal-dielectric periodic structures." *Applied Physics Letters* **92**, 053104 (2008).
52. I. Gallina, A. Della Villa, V. Galdi, V. Pierro, F. Capolino, S. Enoch, and G. Tayeb, "Aperiodic-Tiling-Based Mushroom-Type High-Impedance Surfaces, *IEEE Antennas and Wireless Propagation Letters* **7**, 54-57 (2008).
53. M. Farhat, S. Guenneau, S. Enoch, G. Tayeb, A. B. Movchan and N. V. Movchan, "Analytical and numerical analysis of lensing effect for linear surface water waves through a square array of nearly touching rigid square cylinders", *Phys. Rev. E* **77**, 046308 (2008).

54. M. Farhat, S. Guenneau, A. B. Movchan, and S. Enoch, "Achieving invisibility over a finite range of frequencies", *Optics Express* **16**, 5656 – 5661 (2008).
55. D. Maystre, S. Enoch, and R. McPhedran, "Why a lossless, perfectly homogeneous, left-handed material cannot exist", *J. Opt. Soc. Am. A* **25**, 1937-1943 (2008).
56. H. Benisty, J. Danglot, A. Talneau, S. Enoch, J. M. Pottage, A. David, "Investigation of extracting photonic crystal lattices for guided modes of GaAs based heterostructures", *IEEE Journal of Quantum Electronics* **44**, 777-789 (2008).
57. M. Farhat, S. Enoch, S. Guenneau, and A. B. Movchan, "Broadband cylindrical acoustic cloak for linear surface waves in a fluid", *Physical Review Letters* **101**, 134501 (2008).
58. N.-A. P Nicorovici, R. C. McPhedran, S. Enoch, G. Tayeb, "Finite Wavelength Cloaking by Plasmonic Resonance", *New J. Phys.* **10**, 115020 (2008).
59. N. Bonod, G. Tayeb, D. Maystre, S. Enoch, and E. Popov, "Total absorption of light by lamellar metallic gratings", *Optics Express* **16**, 15431-15438 (2008)
60. M. Farhat, S. Guenneau, S. Enoch, A. Mochan, F. Zolla and A Nicolet, "A homogenization route towards square cylindrical acoustic cloaks", *New J. Phys.*, **10**, 115030 (2008).
61. B. Gralak, R. Pierre, G. Tayeb, S. Enoch, "Solutions of Maxwell's equations in presence of lamellar gratings including infinitely conducting metal", *J. Opt. Soc. Am. A* **25**, 3099-3110 (2008)
62. M. Farhat, S. Guenneau, S. Enoch, A. B. Movchan, "Cloaking bending waves propagating in thin elastic plates," *Physical Review B* **79**, 033102 (2009).
63. A. Micco, A. Della Villa, V. Galdi, F. Capolino, V. Pierro, S. Enoch, G. Tayeb, "Directive radiation from defect-free dodecagonal photonic quasicrystals", *Phys. Rev B* **79**, 075110 (2009).
64. R. Pierre, G. Tayeb, B. Gralak, and S. Enoch, "Quasi-TEM modes in rectangular waveguides: a study based on the properties of PMC and hard surfaces", *Journal of Modern Optics* **56**, 530-538 (2009).
65. E. Popov, S. Enoch, N. Bonod, "Absorption of light by extremely shallow metallic gratings: metamaterial behavior", *Optics Express* **17**, 6770-6781 (2009).
66. J. Zhang H. Jiang, B. Gralak, S. Enoch, G. Tayeb and M. Lequime, " Compensation of loss to approach -1 effective index by gain in metal-dielectric stacks", *The European Physical Journal – Applied Physics* **46**, 32603 (2009).
67. M. Farhat, S. Guenneau, and S. Enoch, "Ultrabroadband Elastic Cloaking in Thin Plates", *Physical Review Letters* **103**, 024301 (2009)

68. M. Farhat, S. Guenneau, S. Enoch, and A. B. Movchan, "All-angle negative refraction and ultrarefraction for liquid surface waves in 2-D phononic crystals", *Journal of Computational and Applied Mathematics*. to be published
69. E. Popov, S. Enoch, N. Bonod, "Metamaterial induced band-gap of surface plasmon propagation", *Journal of Optics A: Pure and Applied Optics* **11**, 114018 (2009).
70. M. Farhat, S. Guenneau, S. Enoch, and A. Movchan, "Negative refraction, surface modes, and superlensing effect via homogenization near resonances for a finite array of split-ring resonators", *Physical Review E* **80**, 046309 (2009)
71. G. Dupont, S. Guenneau, S. Enoch, G. Demesy, A. Nicolet, F. Zolla and A. Diatta, "Revolution analysis of three-dimensional arbitrary cloaks", *Optics Express* **17**, 22603-22608 (2009).
72. S. Cherukulappurath, D. Heinis, J. Cesario, N. F. van Hulst, S. Enoch, and R. Quidant, "Local observation of plasmon focusing in Talbot carpets", *Optics Express* **17**, 23772-23784 (2009).
73. M. Farhat, S. Guenneau, S. Enoch, A. B. Movchan, G. G. Petursson, "Focussing bending waves via negative refraction in perforated thin plates", *Applied Physics Letters* **96**, 081909 (2010).

## Invited Talks

1. D. Maystre\*, G. Tayeb, P. Vincent, S. Enoch, G. Guida, "Electromagnetic modelling of dielectric and metallic photonic crystals", IUTAM Symposium 99/4, Sydney (Australie), 18-22 January 1999, Conférence invitée.
2. B. Gralak, S. Enoch and G. Tayeb\*, "Photonic crystals: from Bloch modes to T-matrices", PIERS 2000, Cambridge (USA), 5-14 July 2000, Conférence invitée.
3. D. Maystre\*, G. Tayeb, S. Enoch, "Propagation of light in photonic band structures: numerical results and applications", International Photonics Conference (IPC'2000), Taiwan, 12-15 Decembre 2000, Conférence invitée.
4. D. Maystre\*, S. Enoch and G. Tayeb, "Ultrarefraction properties of photonic crystals", PIERS 2002, Cambridge (USA), July 2002, Conférence invitée.
5. S. Enoch\* and G. Tayeb, "The richness of the dispersion relation of photonic crystals: application to superprism effect and other remarkable effects." The second IEEE Conference on Nanotechnology (IEEE-Nano'2002), August 26-28, 2002, Arlington (USA), conférence invitée.
6. S. Enoch\*, D. Maystre and G. Tayeb, "Photonic crystals as negative index materials", IEEE AP-S International Symposium and USNC/CNC/URSI National Radio Science Meeting, Columbus, Ohio, June 22-27, 2003, Conférence invitée.

7. S. Enoch\*, G. Tayeb, P. Vincent, P. Sabouroux, and N. Guérin, "Metamaterials with low effective permittivity for directive antennas", IEEE AP-S International Symposium and USNC/CNC/URSI National Radio Science Meeting, Columbus, Ohio, June 22-27, 2003, Conférence invitée.
8. G. Tayeb\*, S. Enoch, P. Vincent, and P. Sabouroux, "A compact directive antenna using ultrarefractive properties of metamaterials", 8<sup>th</sup> International Conference on Electromagnetics in Advanced Applications (ICEAA 03), Torino, Italy, September 8-12, 2003, Conférence invitée.
9. S. Enoch\*, G. Tayeb and P. Vincent, "Metamaterial antenna", CNR Workshop on the "Special Materials and Metamaterials for Electromagnetics and Telecommunications", Florence April 16<sup>th</sup>, 2003. Conférence invitée.
10. D. Maystre\*, S. Enoch and G. Tayeb, "Ultra-refraction and negative refraction in metamaterials", Photonics West 2004, 24–29 January 2004, San Jose, California, USA, Conférence invitée.
11. S. Enoch\*, A. Della Villa, G. Tayeb, F. Capolino, V. Galdi and V. Pierro, "Local Density of States and Photonic Quasicrystals", ETOPIIM7, July 9-13 2006, Sydney (Australia). Conférence invitée.
12. R. Pierre, B. Gralak\*, T. Decoopman, G. Tayeb, S. Enoch, and D. Maystre, "Effect of the Interface Separating a Homogeneous Medium and a Photonic Crystal", PIERS 2006, Tokyo, Japon (2006).
13. S. Enoch\*, B. Gralak, R. Pierre, G. Tayeb, D. Maystre, T. Decoopman, "Photonic Crystal Lens", MRS Fall 2006 meeting, Boston on Nov 27-Dec 1, 2006, Conference invitee
14. R. Pierre, B. Gralak\*, T. Decoopman, G. Tayeb, S. Enoch, and D. Maystre, "Equivalent permittivity and permeability of photonic crystals in the resonance domain", Progress in Electromagnetics Research Symposium, Beijing, Chine (2007).
15. H. Jiang, J. Zhang, B. Gralak, M. Cathelinaud, G. Tayeb, M. Lequime and S. Enoch\*," Towards sub-wavelength resolution using transparent metal-dielectric stacks", Metamaterials'07, 22-27 October 2007, Roma, Italy, Conférence invitée.
16. S. Enoch, M. Farhat, S. Guenneau, and S. Movchan, "A homogenization route for control of transverse electric fields." Metamaterials'08, Pampelona, Spain, September 21-26, 2008.
17. S. Enoch\*, A. Della Villa, G. Tayeb, F. Capolino, V. Pierro and V. Galdi, "Photonic Quasicrystals, Some Properties ", Frontiers in Optics 2008, October 19-23 2008, Rochester, USA.
18. M. Farhat, S. Guenneau\*, A. B. Movchan and S. Enoch, "Broadband invisibility from electromagnetic to elastic waves", 3rd International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, London, UK, Aug 30th-Sept 4th, 2009.

### *Invited Talks in French :*

19. D. Maystre\*, G. Tayeb, P. Vincent, S. Enoch, "Les cristaux photoniques: l'art de réfléchir la lumière avec des matériaux transparents", Conférence invitée à Horizons'99 Bordeaux 7-9 septembre 1999.
20. D. Maystre\*, S. Enoch, G. Tayeb, "Structures à bandes interdites photoniques, réfraction anormale et matériaux main gauche", SFP2003, Lyon, 7 au 10 Juillet 2003.
21. D. Maystre\*, S. Enoch et G. Tayeb. "Réfraction anormale dans les structures BIP et matériaux main gauche" XIIIemes Journées Nationales Micro-Ondes, Lille, 21-23 mai 2003
22. D. Maystre\*, S. Enoch et G. Tayeb, " Réfraction négative dans les cristaux photoniques et les matériaux main gauche: Alice de l'autre côté du miroir?", Numelec 2003, 4ème Conférence Européenne sur les méthodes numériques en Electromagnétisme, Toulouse, 28-30 octobre 2003
23. S. Enoch\* et X. Mélique, "Métamatériaux, matériaux de la main gauche", 11<sup>ème</sup>JNMO, Aussois, 4-7 avril 2006.
24. S. Enoch\*, "Les métamatériaux, vers une nouvelle optique?", Congrès général de la Société Française de Physique, 9-13 Juillet 2007, Grenoble.

### **Books' Chapters**

1. D. Maystre, G. Tayeb, P. Vincent, S. Enoch, G. Guida. *Electromagnetic modelling of dielectric and metallic photonic crystals*. Mechanical and Electromagnetic Waves in Structured Media, Editors: R.C. McPhedran, L.C. Botten, N.A. Nicorovici, Chapter 19, 241-256 (Kluwer Academic Publishers, Dordrecht, The Netherlands, 2001).
2. D. Maystre, S. Enoch, G. Tayeb, *Scattering Matrix method Applied to Photonic Crystals*. in Electromagnetic Theory and Applications for Photonic Crystals, Editor Kiyotoshi Yasumoto, Chapter 1, (CRC Press, Taylor & Francis, 2006)
3. B. Gralak, S. Enoch, G. Tayeb, *Superprism Effects and Antenna Applications in EBG*, in Electromagnetic Metamaterials: Physics and Engineering Explorations, Editors: Nader Engheta and Richard W. Ziolkowski, Chapter 11, (John Wiley & Sons Ltd., 2006)
4. A. Della Villa, V. Galdi, F. Capolino, S. Enoch, and G. tayeb, *Photonic Quasicrystals: Basics and Examples*, in Metamaterials Handbook: Theory and Phenomena of Metamaterials, Applications of Metamaterials, Editor: F. Capolino, chapter 27, (CRC Press Inc, Taylor & Francis, 2009)