



# Annexe 1

## Publications Animation Scientifique Revue de Presse



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# **PUBLICATIONS**



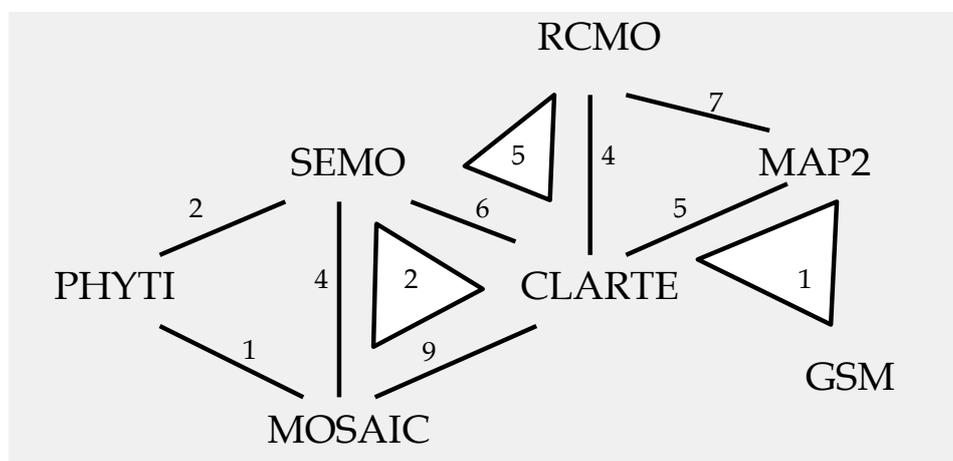
## Récapitulatif des publications par équipe

	CLARTE	GSM	MAP2	MOSAIC	PHYTI	RCMO	SEMO
ACL	161	64	51	73	48	32	80
ASCL	5			2		1	
INV	16	4	13	49	10	7	11
ACTI	17	44	43	9	21	9	30
ACTN	2	19			5		11
COM	62	4	45	122	12	34	22
AFF			10				5
OS	5	5	4	4	2		
OV					1		
DO		2					
AP			6				2
Brevets	4	2	1	12	1	1	4

## ACL INTER EQUIPES

(Articles dans des revues internationales ou nationales avec comité de lecture)

## 46 Publications inter équipes

**CLARTE - MAP2 - GSM**

1. Demèsy G., Zolla F., Nicolet A., Commandre M., Fossati C., Gagliano O., Ricq S., Dunne B., The Finite Element Method as applied to the study of gratings embedded in complementary metal-oxide semiconductor image sensors, **Optical Engineering** 48, 58002 (2009) [CLARTE - MAP2 - GSM]

**CLARTE - MAP2**

2. Demesy G., Zolla F., Nicolet A., Commandre M., Fossati C., The finite element method as applied to the diffraction by an anisotropic grating, **Optics express** 15, 18089-18102 (2007) [CLARTE - MAP2]
3. Demesy G., Zolla F., Nicolet A., Commandre M., A versatile full-vectorial finite element model for crossed-gratings, **Optics Letters** 34, 2216 (2009) [CLARTE - MAP2]

4. Dupont G., Guenneau S., Enoch S., Demesy G., Nicolet A., Zolla F., Diatta A., Revolution analysis of three-dimensional arbitrary cloaks, **Optics Express** 17, 22603 (2009) [CLARTE - MAP2]
5. Demesy G., Zolla F., Nicolet A., Commandre M., All-purpose finite element formulation for arbitrarily shaped crossed-gratings embedded in a multilayered stack, **Journal of the Optical Society of America A** 27, 878-889 (2010) [CLARTE - MAP2]

### CLARTE - MOSAIC

6. Wenger J., Dintinger J., Bonod N., Popov E., Lenne P.-F., Ebbesen T.W., Rigneault H., Raman scattering and fluorescence emission in a single nanoaperture: Optimizing the local intensity enhancement, **Optics Communications** 267, 224-228 (2006) [CLARTE - MOSAIC]
7. Wenger J., Cluzel B., Dintinger J., Bonod N., Fehrembach A.-L., Popov E., Lenne P.-F., Ebbesen T.W., Rigneault H., Radiative and Nonradiative Photokinetics Alteration Inside a Single Metallic Nanometric Aperture, **J. Phys. Chem. C** 111, 11469-11474 (2007) [CLARTE - MOSAIC]
8. Bonod N., Popov E., Gérard D., Wenger J., Rigneault H., Field enhancement in a circular aperture surrounded by a single channel groove, **Optics Express** 16, 2276-2287 (2008) [CLARTE - MOSAIC]
9. Ferrand P., Wenger J., Devilez A., Pianta M., Stout B., Bonod N., Popov E., Rigneault H., Direct imaging of photonic nanojets, **Optics express** 16, 6930-6940 (2008) [CLARTE - MOSAIC]
10. Gérard D., Wenger J., Devilez A., Gachet D., Stout B., Bonod N., Popov E., Rigneault H., Strong electromagnetic confinement near dielectric microspheres to enhance single-molecule fluorescence, **Optics express** 16, 15297-15303 (2008) [CLARTE - MOSAIC]
11. Gérard D., Wenger J., Bonod N., Popov E., Rigneault H., Mahdavi F., Blair S., Dintinger J., Ebbesen T.W., Nanoaperture-enhanced fluorescence: Towards higher detection rates with plasmonic metals, **Physical Review B** 77, 45413 (2008) [CLARTE - MOSAIC]
12. Wenger J., Gérard D., Dintinger J., Mahboub O., Bonod N., Popov E., Ebbesen T.W., Rigneault H., Emission and excitation contributions to enhanced single molecule fluorescence by gold nanometric apertures, **Optics express** 16, 3008-3020 (2008) [CLARTE - MOSAIC]
13. Gérard D., Devilez A., Aouani H., Stout B., Bonod N., Wenger J., Popov E., Rigneault H., Efficient excitation and collection of single molecule fluorescence close to a dielectric microsphere, **Journal of the Optical Society of America B** 26, 1473-1478 (2009) [CLARTE - MOSAIC]
14. Wenger J., Gérard D., Lenne P.-F., Rigneault H., Bonod N., Popov E., Marguet D., Nelep C., Ebbesen T.W., Biophotonics applications of nanometric apertures, **International Journal of Materials and Product Technology** 34, 488-506 (2009) [CLARTE - MOSAIC]
15. Devilez A., Bonod N., Stout B., Gérard D., Wenger J., Rigneault H., Popov E., Three-dimensional subwavelength confinement of light with dielectric microspheres, **Optics express** 17, 2089-2094 (2009) [CLARTE - MOSAIC]

### CLARTE - MOSAIC - SEMO

16. Popov E., Nevière M., Wenger J., Lenne P.-F., Rigneault H., Chaumet P., Bonod N., Dintinger J., Ebbesen T.W., Field enhancement in single subwavelength apertures, **Journal of the Optical Society of America A** 23, 2342-2348 (2006) [CLARTE - MOSAIC - SEMO]
17. Popov E., Nevière M., Sentenac A., Bonod N., Fehrembach A.-L., Wenger J., Lenne P.-F., Rigneault H., Single-scattering theory of light diffraction by a circular subwavelength aperture in a finitely conducting screen, **Journal of the Optical Society of America A** 24, 339-358 (2007) [CLARTE - MOSAIC - SEMO]

### CLARTE - RCMO

18. Lumeau J., Cathelinaud M., Bittebierre J., Lequime M., Ultranarrow bandpass hybrid filter with wide rejection band, **Applied Optics** 45, 1328-1332 (2006) [CLARTE - RCMO]
19. Zhang J., Jiang H., Gralak B., Enoch S., Tayeb G., Lequime M., 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) [CLARTE - RCMO]
20. Zhang J., Jiang H., Gralak B., Enoch S., Tayeb G., Lequime M., Compensation of loss to approach -1 effective index by gain in metal-dielectric stacks, **European Physical Journal Applied Physics** , 2008148 (2008) [CLARTE - RCMO]
21. Zhang J., Jiang H., Enoch S., Tayeb G., Gralak B., Lequime M., Two-dimensional complete band gaps in one-dimensional metal-dielectric periodic structures, **Applied Physics Letters** 92, 53104 (2008) [CLARTE - RCMO]

**CLARTE - RCMO - SEMO**

22. Fehrembach A.-L., Talneau A., Boyko O., Lemarchand F., Sentenac A., Experimental demonstration of a narrow-band, angular tolerant, polarization independent, doubly periodic resonant grating filter, **Optics Letters** 32, 2269 (2007) [CLARTE - RCMO - SEMO]
23. Boyko O., Lemarchand F., Talneau A., Fehrembach A.-L., Sentenac A., Experimental demonstration of ultrasharp unpolarized filtering by resonant gratings at oblique incidence, **Journal of the Optical Society of America A**, 676 (2009) [CLARTE - RCMO - SEMO]
24. Fehrembach A.-L., Gauthier-Lafaye O., Chan Shin Yu K., Monmayrant A., Bonnefont S., Daran E., Arguel P., Lozes-Dupuy F., Sentenac A., Measurement and Modelling of 2D Hexagonal Resonant Grating Filters Performances, **J. of Opt. Soc. Am. A** 27, 1535 (2010) [CLARTE - RCMO - SEMO]
25. Fehrembach A.-L., Lemarchand F., Talneau A., Sentenac A., High Q polarization independent Guided Mode Resonance Filter with “doubly periodic” etched Ta<sub>2</sub>O<sub>5</sub> bi-dimensional grating, **J. of Lightwave Tech.** 28, 2037 (2010) [CLARTE - RCMO - SEMO]
26. Talneau A., Lemarchand F., Fehrembach A.-L., Sentenac A., Impact of electron-beam lithography irregularities across millimeter-scale resonant grating filter performances, **Applied Optics** 49, 658 (2010) [CLARTE - RCMO - SEMO]

**CLARTE - SEMO**

27. Fehrembach A.-L., Hernandez S., Sentenac A., k gaps for multimode waveguide gratings, **Physical Review B** 73, 233405 (2006) [CLARTE - SEMO]
28. Guérin N., Enoch S., Tayeb G., Sabouroux P., Vincent P., Legay H., A metallic Fabry-Perot directive antenna, **IEEE Transactions on Antennas and Propagation** 54, 220-224 (2006) [CLARTE - SEMO]
29. Guerin C.-A., Gralak B., Tip A., Singularity of the dyadic Green's function for heterogeneous dielectrics, **Physical Review E: Statistical, Nonlinear, and Soft Matter Physics** 75, 56601 (2007) [CLARTE - SEMO]
30. Sabouroux P., Stout B., Geffrin J.-M., Eyraud C., Ayranci I., Vaillon R., Selcuk N., Amplitude and phase of light scattered by micro-scale aggregates of dielectric spheres: Comparison between theory and microwave analogy experiments, **Journal of Quantitative Spectroscopy and Radiative Transfer** 103, 156-167 (2007) [CLARTE - SEMO]
31. Hernandez S., Gauthier-Lafaye O., Fehrembach A.-L., Bonnefont S., Arguel P., Lozes-Dupuy F., Sentenac A., High performances 2D resonant grating filter at 850nm under high oblique incidence of ~60°, **Applied Physics Letters**, 131112 (2008) [CLARTE - SEMO]
32. Merchiers O., Eyraud C., Geffrin J.-M., Vaillon R., Stout B., Sabouroux P., Lacroix B., Microwave measurements of the full amplitude scattering matrix of a complex aggregate: a database for the assessment of light scattering codes, **Optics Express** 18, 2056-2075 (2010) [CLARTE - SEMO]

**MAP2 - RCMO**

33. Lemarchand F., Deumie C., Zerrad M., Abel-Tiberini L., Bertussi B., Georges G., Lazaridès B., Cathelinaud M., Lequime M., Amra C., Optical Characterisation of an unknown single layer: Institut Fresnel contribution to OIC 2004 Measurement Problem, **Applied Optics** 45, 1312-1318 (2006) [MAP2 - RCMO]
34. Zerrad M., Deumie C., Lequime M., Amra C., Ewart M., Light-scattering characterization of transparent substrates, **Applied Optics** 45, 1402 (2006) [MAP2 - RCMO]
35. Gallais L., Krol H., Natoli J.-Y., Commandre M., Cathelinaud M., Roussel L., Lequime M., Amra C., Laser damage resistance of silica thin films deposited by electron beam deposition, ion assisted deposition, reactive low voltage ion plating and dual ion beam sputtering, **Thin Solid Films** 515, 3830-3836 (2007) [MAP2 - RCMO]
36. Zerrad M., Deumie C., Lequime M., Amra C., An alternative scattering method to characterize surface roughness from transparent substrates, **Optics Express** 15, 9222-9231 (2007) [MAP2 - RCMO]
37. Gallais L., Capoulade J., Commandre M., Natoli J.-Y., Cathelinaud M., Koc C., Lequime M., Laser damage resistance of Hafnia thin films deposited by Electron Beam Deposition, Reactive Low Voltage Ion Plating and Dual Ion Beam Sputtering, **Applied Optics** 47, C107-C113 (2008) [MAP2 - RCMO]
38. Nazabal V., Cathelinaud M., Shen W., Nemeč P., Charpentier F., Lhermite H., Anne M., Capoulade J., Grasset F., Moreac A., Inoue S., Frumar M., Adam J., Lequime M., Amra C., Chalcogenide coatings of Ge<sub>15</sub>Sb<sub>20</sub>Se<sub>65</sub> and Te<sub>20</sub>As<sub>30</sub>Se<sub>50</sub>, **Applied Optics** 47, C114-C123 (2008) [MAP2 - RCMO]
39. Lequime M., Zerrad M., Deumie C., Amra C., A goniometric light scattering instrument with high-resolution imaging, **Optics Communications** 282, 1265-1273 (2009) [MAP2 - RCMO]

**MOSAIC - PHYTI**

40. Sergé A., Bertaux N., Rigneault H., Marguet D., Dynamic multiple-target tracing to probe spatiotemporal cartography of cell membranes., **Nature Methods** 5, 687-694 (2008) [MOSAIC - PHYTI]

**MOSAIC - SEMO**

41. Sandeau N., Giovannini H., Arrangement of a 4Pi microscope for reducing the confocal detection volume with two-photon excitation, **Optics Communications** 264, 123-129 (2006) [MOSAIC - SEMO]
42. Sandeau N., Giovannini H., Increasing the lateral resolution of 4Pi fluorescence microscopes, **Journal of the Optical Society of America A** 23, 1089 (2006) [MOSAIC - SEMO]
43. Sandeau N., Giovannini H., Influence of the pinhole size on the resolution of the 4Pi' microscope studied by means of the optical transfer function, **Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment** 571, 404-406 (2007) [MOSAIC - SEMO]
44. Sandeau N., Wawrezinieck L., Ferrand P., Giovannini H., Rigneault H., Increasing the lateral resolution of scanning microscopes by a factor of two using 2-image microscopy, **Journal of the European Optical Society - Rapid Publications** 4, 9040 (2009) [MOSAIC - SEMO]

**PHYTI - SEMO**

45. Sentenac A., Guérin C.-A., C. Chaumet P., Drsek F., Giovannini H., Bertaux N., Holschneider M., Influence of multiple scattering on the resolution of an imaging system: a Cramer-Rao analysis, **Optics express** 15, 1340-1347 (2007) [PhyTI - SEMO]
46. Boffety M., Allain M., Sentenac A., Massonneau M., Carminati R., Analysis of the depth resolution limit of luminescence diffuse optical imaging, **Optics Letters** 33, 2290-2292 (2008) [PhyTI - SEMO]

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47. De Wilde Y., Formanek F., Carminati R., Gralak B., Lemoine P.-A., Joulain K., Mulet J.-P., Chen Y., Greffet J.-J., Thermal radiation scanning tunnelling microscopy, **Nature** 444, 740-743 (2006)
48. Bonnefois J.-J., Guida G., Nevière M., Popov E., Simulation of two-dimensional Kerr photonic crystals via the fast Fourier factorisation, **Journal of the Optical Society of America A** 23, 842-847 (2006)
49. Bonod N., Popov E., Enoch S., Néauport J., Polarization insensitive blazed diffraction gratings, **Journal of the European Optical Society Rapid Communications** 1, 06029-1-8 (2006)
50. Boyer P., Renversez G., Popov E., Nevière M., A new differential method applied to the study of arbitrary cross section microstructured optical fibers, **Optical and Quantum Electronics** 38, 217-230 (2006)
51. Boyer P., Popov E., Nevière M., Renversez G., Diffraction theory: application of the fast Fourier factorization to cylindrical devices with arbitrary cross section lighted in conical mounting, **Journal of the Optical Society of America A** 23, 1146-1158 (2006)
52. Brilland L., Smektala F., Renversez G., Chartier T., Troles J., Nguyen T.-N., Traynor N., Monteville A., Fabrication of complex structures of Holey Fibers in chalcogenide glass, **Optics express** 14, 1280-1285 (2006)
53. Decoopman T., Tayeb G., Enoch S., Maystre D., Gralak B., Photonic crystal lens: from negative refraction and negative index to negative permittivity and permeability, **Physical Review Letters** 97, 73905 (2006)
54. Della Villa A., Enoch S., Tayeb G., Capolino F., Pierro V., Galdi V., Localized modes in photonic quasicrystals with Penrose-type lattice, **Optics express** 14, 10021-10027 (2006)
55. Della Villa A., Galdi V., Capolino F., Pierro V., Enoch S., Tayeb G., A comparative study of representative categories of EBG dielectric quasi-crystals, **IEEE Antennas and Wireless Propagation Letters** 5, p.331-334 (2006)
56. Guenneau S., Anantha Ramakrishna S., Chakrabarti S., Finite checkerboards of dissipative negative refractive index, **Optics Express** 14, 12950-12957 (2006)
57. Guillon M., Moine O., Stout B., Longitudinal optical binding of high optical contrast microdroplets in air, **Physical Review Letters** 96, 143902 (2006)

58. Labonté L., Pagnoux D., Roy P., Bahloul F., Zghal M., Mélin G., Burov E., Renversez G., Accurate measurement of the cutoff wavelength in a microstructured optical fiber by means of an azimuthal filtering technique, **Optics Letters** 31, 1779-1781 (2006)
59. Maystre D., Getting effective permittivity and permeability equal to -1 in 1D dielectric photonic crystals, **Journal of Modern Optics** 53, 1901-1917 (2006)
60. Maystre D., Electromagnetic scattering by a set of objects: an integral method based on scattering operator, **Progress In Electromagnetics Research** 57, 55-84 (2006)
61. Maystre D., Vincent P., Making photonic crystals using trapping and binding optical forces on particles, **Journal of Optics A Pure and Applied Optics** 8, 1059-1066 (2006)
62. Nicolet A., Henrotte F., Hameyer K., An energy-based vector hysteresis model for ferromagnetic materials, **COMPEL Int J for Computation and Maths in Electrical and Electronic Eng** 25, 71-80 (2006)
63. Nicolet A., Movchan A., Guenneau S., Zolla F., Asymptotic modelling of weakly twisted electrostatic problems, **Comptes Rendus Mécanique** 337, 91-97 (2006)
64. Popov E., Nevière M., Analytical model of the optical response of periodically structured metallic films: Comment, **Optics express** 14, 6583-6585 (2006)
65. Renversez G., Boyer P., Sagrini A., Antiresonant reflecting optical waveguide microstructured fibers revisited: a new analysis based on leaky mode coupling, **Optics express** 14, 5682-5687 (2006)
66. Stout B., Nevière M., Popov E., Mie scattering by an anisotropic object. Part II: Arbitrary-shaped object - differential theory, **Journal of the Optical Society of America A** 23, 1124-1134 (2006)
67. Stout B., Nevière M., Popov E., Mie scattering by an anisotropic object. Part I: Homogeneous sphere, **Journal of the Optical Society of America A** 23, 1111-1123 (2006)
68. Van Nieuwstadt J., Sandtke M., Harmsen R., Segerink F.B., Prangma J.C., Enoch S., Kuipers L., Strong modification of the nonlinear optical susceptibility of metallic subwavelength hole arrays, **Physical Review Letters** 97, 146102 (2006)
69. Zolla F., Felbacq D., Bouchitte G., Bloch vector dependence of the plasma frequency in metallic photonic crystals, **Physical Review E** 74, 56612 (2006)
70. Anantha Ramakrishna S., Guenneau S., Enoch S., Tayeb G., Gralak B., Light confinement through negative refraction in photonic crystal and metamaterial checkerboards, **Physical Review A: Atomic, Molecular and Optical Physics** 75, 63830 (2007)
71. Benelli G., Enoch S., Tayeb G., Modelling of a single object embedded in a layered medium, **Journal of Modern Optics** 54, 871-879 (2007)
72. Bonod N., Popov E., Li L., Chernov B., Unidirectional excitation of surface plasmons by slanted gratings, **Optics express** 15, 11427-11432 (2007)
73. Butun B., Cesario J., Enoch S., Quidant R., Ozbay E., InGaN green light emitting diodes with deposited nanoparticles, **Photonics and Nanostructures - Fundamentals and Applications** 5, 86-90 (2007)
74. Cesario J., U. Gonzalez M., Cheylan S., L. Barnes W., Enoch S., Quidant R., Plasmon engineering as a route to improving the light extraction through metal films, **Optics express** 15, 10533-10539 (2007)
75. Checoury X., Enoch S., Blanco A., Lopez C., Stacking patterns in self-organized opal photonic crystal, **Applied Physics Letters** 90, 161131 (2007)
76. Cherednichenko K., Guenneau S., Bloch-wave homogenization for spectral asymptotic analysis of the periodic Maxwell operator, **Journal Waves Random Complex Media** 17, 627-651 (2007)
77. Fehrembach A.-L., Popov E., Tayeb G., Maystre D., Narrow-band filtering with whispering modes in gratings made of fibers, **Optics express** 15, 15734 (2007)
78. Gralak B., Guenneau S., Transfer matrix method for point sources radiating in classes of negative refractive index materials with 2n-fold antisymmetry, **Waves in Random and Complex Media** 17, 581-614 (2007)
79. Guenneau S., Anantha Ramakrishna S., Enoch S., Chakrabarti S., Tayeb G., Gralak B., 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)
80. Guenneau S., Gralak B., Transfer matrix for point sources radiating in classes and negative refractive index materials with 2n-fold anti-symmetry, **Waves in Random and Complex Media** 17, 581-614 (2007)
81. Guenneau S., Nicolet A., Zolla F., Homogenization of three-dimensional photonic crystals with heterogeneous permittivity and permeability, **Waves in Random and Complex Media** 17, 653-697 (2007)
82. Guenneau S., Movchan A., Movchan N., Localised bending modes in split ring resonators, **Physica B-condensed matter** 394, 141-144 (2007)
83. Guenneau S., Zolla F., Homogenization of 3D finite chiral photonic crystals, **Physica B-condensed matter** 394, 145-147 (2007)

84. Guenneau S., Movchan A., Anantha Ramakrishna S., Petursson G., Acoustic metamaterials for sound focusing and confinement, **New Journal of Physics** 9, 399 (2007)
85. Guenneau S., Ramakrishna A., Enoch S., Chakrabarti S., Tayeb G., Gralak B., Cloaking and imaging effects in plasmonic checkerboards of negative  $\epsilon$  and  $\mu$  and dielectric photonic crystal checkerboards, **Photonics and Nanostructures - Fundamentals and Applications** , 63-72 (2007)
86. Maystre D., Vincent P., Are optical forces derived from a scalar potential?, **Optics express** 15, 9817-9830 (2007)
87. Maystre D., Vincent P., Phenomenological study of binding in optically trapped photonic crystals, **Journal of the Optical Society of America A** 24, 2383-2393 (2007)
88. Maystre D., Alleyne C., Kirk A., Mcphedran R., Nicorovici N., Enhanced SPR sensitivity using periodic metallic structures, **Optics express** 15, 8163-8169 (2007)
89. Movchan A., Movchan N., Guenneau S., Mcphedran R., Asymptotic estimates for localized electromagnetic modes in doubly periodic structured with defects, **Proceedings Of The Royal Society A-Mathematical Physical And Engineering Sciences** 463, 1045-1067 (2007)
90. Movchan N., Guenneau S., Movchan A., Mcphedran R., Estimates for localised transverse electric modes in multi-structured crystal fibres, **Physica B: Condensed Matter** 394, 281-284 (2007)
91. Nicolet A., Zolla F., Ould Agha Y., Guenneau S., Leaky modes in twisted microstructured fibres, **Waves in Random and Complex Media** 17, 559-570 (2007)
92. Nicolet A., Movchan A., Geuzaine C., Zolla F., Guenneau S., High order asymptotic analysis of twisted electrostatic problems, **Physica B** 394, 335-338 (2007)
93. Nicolet A., Drouart F., Renversez G., Geuzaine C., A finite element analysis of spatial solitons in optical fibres, **COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering** 26, 1105 (2007)
94. Popov E., Enoch S., Mystery of the double limit in homogenisation of finitely or perfectly conducting periodic structures, **Optics Letters** 32, 3441-3444 (2007)
95. Popov E., Enoch S., Nevière M., 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)
96. Popov E., Bonod N., Differential theory of diffraction in cylindrical coordinates, **Physica Status Solidi B** 244, 3463-3478 (2007)
97. Popov E., Bonod N., Enoch S., Non-Bloch plasmonic stop-band in real-metal gratings, **Optics express** 15, 6241-3250 (2007)
98. Popov E., Bonod N., Enoch S., Comparison of plasmon surface waves on shallow and deep metallic 1D and 2D gratings, **Optics express** 15, 4224-4237 (2007)
99. Ramakrishna A., Guenneau S., Enoch S., Tayeb G., Gralak B., Confining light with negative refraction in checkerboard metamaterials and photonic crystals, **Physical Review A: Atomic, Molecular and Optical Physics** 75, 63830 (2007)
100. Renversez G., Boyer P., Popov E., Nevière M., Improved differential method for microstructured optical fibres, **Journal of Optics A: Pure and Applied Optics** 9, 728-470 (2007)
101. Stout B., Auger J.C., Absorption and scattering properties of dense ensembles of nonspherical particles, **Journal of the Optical Society of America A** 24, 3508 (2007)
102. Stout B., Nevière M., Popov E., T-matrix of the homogeneous anisotropic sphere: applications to orientation averaged resonant scattering, **JOSA A** 24, 1120-1130 (2007)
103. Zolla F., Nicolet A., Guenneau S., Swiss rolls: a parameterizable metamaterial, **Waves in Random and Complex Media** 17, 571-579 (2007)
104. Zolla F., Guenneau S., Nicolet A., Pendry S. J., Electromagnetic analysis of cylindrical invisibility cloaks and the mirage effect, **Optics Letters** 32, 1069-1071 (2007)
105. Adams S., Craster R., Guenneau S., Bloch waves in periodic multi-layered acoustic waveguides, **Proceedings Royal Society London A** 464, 2669-2692 (2008)
106. Benisty H., Danglot J., Talneau A., Enoch S., M. Pottage J., David A., Investigation of extracting photonic crystal lattices for guided modes of GaAs based heterostructures, **IEEE Journal of Quantum Electronics** 44, 777-789 (2008)
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109. Bonod N., Tayeb G., Maystre D., Enoch S., Popov E., Total absorption of light by lamellar metallic gratings, **Optics express** 16, 15431-15438 (2008)

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111. Bonod N., Neauport J., Design of a full silica pulse compression grating, **Optics Letters** 33, 458-460 (2008)
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## BREVETS

### CLARTE

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### SEMO

1. Colineau J., Giovannini H., Taste J., Procédé de mesure d'aberrations de front d'onde en lumière cohérente et de correction des effets de ces aberrations, 413741 (2006-06-23)

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# ANIMATION SCIENTIFIQUE



Les séminaires "Optique et Applications", organisés conjointement avec le laboratoire PIIM, ont une périodicité mensuelle, leurs thématiques sont volontairement larges pour privilégier une large audience. Ils ont lieu dans la mesure du possible le jeudi à 13 heures 30 en amphi Rouard ou Ponte (bâtiment Fresnel, campus de St Jérôme) et sont ouverts à tous.

Organisation : A. Sentenac (SEMO), P. Ferrand (MOSAIC), et C. Champenois (laboratoire PIIM)

- 14/10/2008 : Mark I. Stockman (Department of Physics and Astronomy, Georgia State University, Atlanta, GA 30303, USA) : Ultrafast, Nonlinear and Quantum Nanoplasmonics
- 24/06/2010 : Vasily N. Astratov (Department of Physics and Optical Science, University of North Carolina, Charlotte, NC, USA) : Fundamentals and Applications of Microsphere Resonator Arrays
- 20/05/2010 : Wojciech Pieczynski (Télécom SudParis) : Fusion de Dempster-Shafer dans les modèles markoviens
- 25/03/2010 : W. Riede, H. Schröder, P. Allenspacher DLR (German Aerospace Center Institute of Technical Physics Stuttgart, Germany) : Ready-for-space : "Fitness tests for laser optics"
- 05/03/2010 : Célébration des 10 ans de l'Institut Fresnel - deux conférences exceptionnelles :
  - **M. Matthias Fink** (Professeur à l'EPSCI Paris Tech, Directeur de l'Institut Langevin, Membre de l'Académie des Sciences, Titulaire de la Chaire d'innovation technologique au Collège de France)
  - **Sir John Pendry** (Professeur à l'Imperial College de Londres, Fellow Royal Society, Institute of Physics, IEEE, Lauréat du prix Dirac pour ses contributions en physique théorique, Médaille de la Royal Society of London)
- 03/03/2010 : Dr. Mario Agio (Laboratory of Physical Chemistry, ETH Zurich, Switzerland) : Quantum Nano-Optics : Nano-Optics for Quantum Technologies
- 26/02/2010 : Lorenzo Maccone (MIT, Boston) : Quantum-Enhanced Physics and Technologies
- 25/02/2010 : Yannick De Wilde (Institut Langevin ESPCI-ParisTech) : Du microscope optique en champ proche infrarouge au STM à photon
- 03/02/2010 : Enrico Brambilla (Département de Physique et Mathématiques, Università degli Studi dell'Insubria, Côme, Italie) : Corrélations spatiales d'origine quantique du champ électromagnétique - Applications dans le domaine de l'imagerie
- 29/01/2010 : Thomas DURT (Département d'Optique et Physique Appliquée (TONA), Vrije Universiteit, Brussel) : A new approach of time dependence in quantum mechanics..... Fundamental and applied aspects of quantum mechanics : from the measurement problem to quantum cryptography - Entanglement, temporal irreversibility and decoherence
- 28/01/2010 : Christian Gutt (HASYLAB at DESY, Hambourg, Allemagne) : - X-ray free electron lasers and new opportunities for coherent x-rays
- 22/01/2010 : Gaëtan Messin (Institut d'Optique, Palaiseau) : Sources de lumières quantiques
- 17/12/2009 : Anne Amy-Klein (Equipe HOTES, Laboratoire de Physique des Lasers (UMR 7538, CNRS et Université Paris 13) : Transfert à très haute résolution d'une référence de fréquence optique sur le réseau fibré Internet et applications en métrologie et physique fondamentale
- 09/12/2009 : Enrico Gratton : 3D particle tracking and imaging at the nanometer scale (Conférence du Leica Scientific Forum)
- 03/12/2009 : Turgut Durduran (ICFO (Barcelone)) : Diffuse Correlation and Diffuse Optical Spectroscopies for Measurement of Microvascular Blood Flow, Oxygen Saturation, Volume and Metabolism

- 26/11/2009 : Francesco Simonetti (Department of Mechanical Engineering, Imperial College, London SW7 2AZ, United Kingdom) : Modern ultrasound imaging : An exciting window into the sub-surface world
- 30/04/2009 : Michel GROSS (Laboratoire Kastler Brossel, Paris) : Holographie Numérique Hétérodyne
- 17/04/2009 : Patrick Flandrin (Université de Lyon, Ecole Normale Supérieure de Lyon, Laboratoire de Physique (UMR 5672 CNRS)) : Stationnarité relative : définition et test dans le plan temps-fréquence
- 16/04/2009 : Chris Dainty (National Univeristy of Ireland, Galway) : Adaptive Optics : From Astronomy to Vision Science
- 25/02/2009 : Neso Sojic, (Universite de Bordeaux) - Fibres optiques nanostructurées pour l'imagerie SERS et la bioanalyse
- 19/11/2008 - Patrick Sebbah, (Laboratoire de Physique de la Matière Condensée, CNRS UMR 6622) : La localisation forte de la lumière par le désordre, transition diffusif/localisé - Application aux lasers aléatoires
- 14/10/2008 : Mark I. Stockman (Department of Physics and Astronomy, Georgia State University, Atlanta, GA 30303, USA) : Ultrafast, Nonlinear and Quantum Nanoplasmonics
- 20/06/2008 : Jérôme Mertz (Boston University, Boston, MA) : New approaches for out-of-focus background suppression
- 03/04/2008 : Joseph Zyss (Institut d'Alembert, ENS Cachan) : Jeux de billard ondulatoires et chaotiques à base de polymères
- 27/03/2008 : Philippe Lalanne (LCFIO, Palaiseau) : Interactions électromagnétiques entre des nano-objets et des surfaces métalliques
- 30/01/2008 : François Reynaud (XLIM, Limoges) : Imagerie optique haute résolution pour l'astronomie. Développement technologique et méthodes prospectives
- 28/11/2007 : Luc Froehly (FEMTO-ST, Besançon) : Tomographie Optique Cohérente spectralement résolue
- 24/10/2007 : Claude Fabre (LKB, Paris) : Effets quantiques dans les mesures optiques avec de la lumière "intense"
- 25/06/2007 : Michael Unser (EPFL, Lausanne) : Splines : A Unifying Framework for Image Processing
- 30/05/2007 : Mathias FINK (Laboratoire Ondes et Acoustique, ESPCI) : Renversement du Temps et Super-Resolution
- 11/04/2007 : Olivier Alibart (Université de Nice) : Paires de photons pour les communications quantiques : Le point de vue de l'optique guidée
- 13/02/2007 : Claude Boccara (Laboratoire d'Optique Physique, ESPCI - CNRS) : Imagerie en milieu diffusant
- 07/02/2007 : Antoine Labeyrie (Observatoire de Haute-Provence, Collège de France - CNRS) : Hypertélescopes et miroirs piégés par laser
- 24/01/2006 : Emmanuel Joffre (Laboratoire d'Optique et Biosciences, Ecole Polytechnique - CNRS - INSERM) : Quelques applications du contrôle cohérent à l'étude de systèmes biologiques
- 15/12/2006 : Vincent Jacques, Laboratoire de Photonique Quantique et Moléculaire (CNRS-ENS de Cachan) : Centres colorés du diamant, émission de photons uniques et interférences à un photon
- 22/11/2006 : Jean-Jacques Greffet, Laboratoire EM2C, Ecole Centrale Paris : Rayonnement thermique en champ proche : Quand le corps noir devient cohérent
- 27/10/2006 : Alain Dereux, Laboratoire de Physique de l'université de Bourgogne : Plasmonique (localisation et propagation du champ sur du métal finement ciselé)

- 24/05/2006 : Benoît Cluzel, Laboratoire Silicium Nanoélectronique Photonique et Structure, DRFMC, CEA Grenoble : Réalisation et imagerie par sonde locale de cristaux photoniques en silicium
- 22/03/2006 : Nicolas Sanner, Laboratoire TSI (Saint-Etienne), Mise en forme programmable de faisceau laser femtoseconde pour l'interaction laser-matière
- 3/03/2006 : Christophe Finot, Laboratoire de Physique de l'Université de Bourgogne, Dijon, Similaritons dans les amplificateurs optiques fibrés
- 8/02/2006, Béatrice Chatel, Laboratoire Collisions, Agrégats, Réactivité, CNRS UMR 5589, IRSAMC, Université Paul Sabatier, TOULOUSE, Manipulation d'atomes par des impulsions lasers mises en forme



# REVUE DE PRESSE



## PRESSE & MEDIAS FRANÇAIS

Revue/Média	Type de Média	Date de parution	Interview/citation enseignant ou chercheur	Titre/thème de l'article
Les dossiers de La Recherche	Presse écrite	février-10	Sébastien Guenneau/Boris Galak	"Une optique classique sens dessus dessous"
CNRS-INSIS	Site Internet	2010	J. Wenger/P. Ferrand	Faits marquants 2010
La Provence	Presse écrite	06/03/2010	Hugues Giovannini	"Une décade prodigieuse"
Spectra Analyse	Presse écrite	déc-09	Jérôme Wenger/Patrick Ferrand	Détection de molécules individuelles : la fibre optique remplace le microscope
Le Monde	Presse écrite	17/07/2009	Stefan Enoch	Une "cape d'invisibilité", parade antisismique
Le Point	Presse écrite	09/03/2009	Stefan Enoch et Sébastien Guenneau	Climat - un bouclier antitsunami
France Inter émission "La Tête au Carré"	Radio	02/02/2009	Stefan Enoch	"L'invisibilité"
Marseille l'Hebdo	Presse écrite	20/01/2009	André Nicolet	La cape d'invisibilité
Intérêt Général.Info	Site Internet	09/09/2009	M. Farhat/S. Guenneau/S. Enoch	Science : Invisibilité en vue
2009, une année avec le CNRS	Presse écrite	2009	Jérôme Wenger/Patrick Ferrand	Des molécules jusqu'au bout des fibres
CNRS Site Web	Site Internet	2009	PF Lenne/S. Guenneau/S. Enoch/A. Sentenac/P. Ferrand/J. Wenger/N. Bonod	Faits marquants 2009
Le journal du CNRS	Presse écrite	oct-08	Salah Bourennane	Souriez, vous êtes identifiés
Magazine Pour la Science	Presse écrite	déc-08	Stefan Enoch/Sébastien Guenneau	
TF1 Journal de 20 heures	Télévision	déc-08	Salah Bourennane	La biométrie, reconnaissance par l'iris
Libération	Presse écrite	déc-08	Stefan Enoch	Invisibilité en vue
Le Point	Presse écrite	13/11/2008	Stefan Enoch	Physique - Le retour de l'homme invisible
CNRS Site Web	Presse écrite	nov-08	Equipe CLARTE	
Pour la Science	Presse écrite	nov-08	Sébastien Guenneau	
Science et Vie	Presse écrite	oct-08	S. Guenneau/S. Enoch	
Spectra Analyse	Presse écrite	juil-08	Equipe MOSAIC	MOSAIC : focale sur la biophotonique
La Provence	Presse écrite	12/04/2008	André Nicolet/Frédéric Zolla	De l'homme invisible au sang universel : tous les secrets de la science dévoilés
Journal du CNRS / Optitec	Presse écrite	févr-08	Interview Michel Lequime	Optitec, "le Sud, région des lumières"
2008, une année avec le CNRS	Presse écrite	2008	Jérôme Wenger/Patrick Ferrand/Nicolas Bonod	Le nanojet de photons crève l'écran

## PRESSE & MEDIAS FRANÇAIS (suite)

Revue/Média	Type de Média	Date de parution	Interview/citation enseignant ou chercheur	Titre/thème de l'article
LCM journal	Télévision	20/12/2007	André Nicolet	
Le Figaro	Presse écrite	15/10/2007	Stefan Enoch	
Science et Avenir	Presse écrite	oct-07	André Nicolet/Frédéric Zolla/Sébastien Guenneau	
France Inter	Radio	15/08/2007	Interview Sébastien Guenneau	
Humanité Dimanche	Presse écrite	01/08/2007	Sébastien Guenneau	
RFI	Radio	26/06/2007	Interview André Nicolet/Frédéric Zolla	D'ici 10 ans, l'homme invisible existera
Le Monde	Presse écrite	17/05/2007	Interview Frédéric Zolla/André Nicolet/Sébastien Guenneau	Le secret de l'invisibilité est caché dans les structures infimes des matériaux
France-info	Radio	20/10/2006	Interview Stefan Enoch	La "cape d'invisibilité"
Europe 1	Radio	20/10/2006	Interview Stefan Enoch	La "cape d'invisibilité"
TF1 Journal de 20 heures	Télévision	20/10/2006	Interview Stefan Enoch	La "cape d'invisibilité"
La Recherche	Presse écrite	01/10/2006	Sébastien Guenneau/Boris Gralak	Un matériau pour une lentille parfaite

## PRESSE & MEDIAS INTERNATIONAUX

Revue/Média	Média	Date de parution	Interview/citation enseignant ou chercheur	Titre/thème de l'article	Pays
Université de Liverpool	Site Internet	20/07/2009	Sébastien Guenneau/Stefan Enoch/Mohamed Farhat	"Invisibility cloak" could protect against earthquakes	Royaume-Uni
Coherent	Presse écrite	10/12/2008	Hervé Rigneault, Patrick Ferrand	MPE applications with Coherent Chameleon Laser	Etats-Unis
Radio Suisse Romande "La Science de Pain"	Radio/Site Internet	10/12/2008	Stefan Enoch	La chape acoustique	Suisse
Biophotonics International	Presse écrite	nov-08	Interview Jérôme Wenger	Getting good results at a bargain basement price : researchers find a low-cost alternative to a high-numerical-aperture objective	Etats-Unis
Astronomia	Presse écrite	nov-08	Sébastien Guenneau		Pologne
Technisch Weekblad	Presse écrite	10/10/2008	Interview Stefan Enoch	Resonerende ring beschermt tegen tsunami	Pays-Bas
Mathematical Association of America/MathDL	Presse écrite	09/10/2008	M. Farhat/S. Guenneau/S. Enoch	Invisibility cloak could shore up coasts	Etats-Unis
Liverpool Daily Post	Presse écrite	06/10/2008	Interview Sébastien Guenneau	Liverpool scientists creat invisibility cloak to protect coastlines	Royaume-Uni
Newstrack India	Site internet	06/10/2008	Sir John Pendry/Sébastien Guenneau	"Invisibility cloak" to protect coastlines from large water waves	Inde
Climate of our Future	Site internet	05/10/2008	CNRS/ Universités d'Aix-Marseille	Tsunami invisibility cloak could make structures "disappear"	Etats-Unis
Thaiandian News	Site internet	03/10/2008	Sir J. Pendry/S. Guenneau		Thaïlande
Physicsworld	Presse écrite	02/10/2008	Interview S. Enoch/S. Guenneau	Invisibility cloak for water waves	Royaume-Uni
Democratic Underground	Site internet	02/10/2008	Stefan Enoch/Sébastien Guenneau	Invisibility cloaks could take sting out of tsunamis	Etats-Unis
University of Liverpool (News)	Site internet	02/10/2008	Interview Sébastien Guenneau/Stefan Enoch	"Invisibility cloak" could protect coastlines	Royaume-Uni
Device Daily	Site internet	01/10/2008	Stefan Enoch/Sébastien Guenneau	Scientists testing a technology to protect coastlines from tsunami	Etats-Unis
Times Higher Education	Presse écrite	01/10/2008	Sébastien Guenneau		Royaume-Uni
Andhra News	Presse écrite	30/09/2008	Sébastien Guenneau/Stefan Enoch	Soon, a tsunami invisibility cloak protect ocean structures from destruction	Inde
New scientist	Presse écrite	29/09/2008	Stefan Enoch/Sébastien Guenneau	Invisibility cloaks could take sting out of tsunamis	Royaume-Uni
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## PRESSE & MEDIAS INTERNATIONAUX (suite)

Revue/Média	Média	Date de parution	Interview/citation enseignant ou chercheur	Titre/thème de l'article	Pays
<b>Underwater Times</b>	Presse écrite	27/09/2008	Alexander Movchan/Mohamed Farhat/Sébastien Guenneau/stefan Enoch	Researchers ponder tsunami invisibility cloak ; off-shore platforms, coastlines, islands could benefit	Etats-Unis
<b>Eurekaalert</b>	Site internet	26/09/2008	Article de Mohamed Farhat/Stefan Enoch/Sébastien Guenneau	Tsunami invisibility cloak, dark energy v. the void, sorting nanotubes with light and more	Etats-Unis
<b>American Physical Society</b>	Presse écrite	26/09/2008	Sébastien Guenneau/stefan Enoch		Etats-Unis
<b>Thaïdian News</b>	Presse écrite	26/09/2008	CNRS/ Universités d'Aix-Marseille	Soon, a tsunami invisibility cloak to protect platforms from destruction	Thaïlande
<b>Next Big Future</b>	Site internet	26/09/2008	Mohamed Farhat/Sébastien Guenneau/stefan Enoch	Tsunami invisibility : hiding structures like oil rigs from the effect of waves	Etats-Unis
<b>Photonics Spectra</b>	Site internet	01/07/2008	Patrick Ferrand	Confocal microscopy enables direct observation of photonic nanojets	Etats-Unis