

nanoMIR

Groupe “nanoMIR” / “nanoMIR” group
“Composants à nanostructures pour Moyen Infra-Rouge”
“Nanostructure-based devices for Mid-Infra-Red Applications”

Publication list (2018)

C-INV : Communications invitées / Invited communications (national or international)

1. P. Christol "Operating temperature limit of high performance cooled infrared photodetectors" Latest (r)evolutions in detectors : From the visible to the infrared, ONERA scientific days, Paris, Dec 2018
2. O. Delorme, L. Cerutti, E. Luna, R. Kudrawiec, J. Kopaczek, M.P. Polak, M. Gladysiewicz, A. Trampert, E. Tournié and J.-B. Rodriguez, "Development of GaSbBi for the Fabrication of Mid-IR Laser Diodes", (oral invité) 14th International Conference on Mid-IR Optoelectronics: Materials and Devices MIOMD-XIV (MIOMD 2018), October 2018, Flagstaff, AZ (USA)
3. O. Delorme, L. Cerutti, R. Kudrawiec, E. Luna, J. Kopaczek, M. P. Polak, M. Gladysiewicz, A. Trampert, E. Tournié, and J.-B. Rodriguez, Recent advances in the molecular beam epitaxy of GaSbBi alloys and quantum wells, 20th International Conference on Molecular-Beam Epitaxy (MBE 2018), 2 – 8 September 2018, Shanghai (China).
4. E. Tournié, L. Cerutti, J.-B. Rodriguez, A. Castellano, A. Garreau, F. Lelarge, GaSb-based lasers in the telecom wavelength range monolithically integrated on Si, ECOC 2018, Workshop on Integrated Photonics, 23 September 2018, Roma (Italia).
5. A.Vicet, M. Bahriz, K. Chamassi, R. Rousseau, Z. Loghmari and D. Oussalah , Photoacoustic spectroscopy with resonant devices : from QEPAS to Silicon Resonant Detection, PIERS 2018 1-4 aug 2018, Toyama (Japan)
6. E. Tournié, L. Cerutti, J.B. Rodriguez, J.P. Perez, A.N. Baranov, R. Teissier, Antimonide-based optoelectronic devices epitaxially grown on Silicon, International nano-optoelectronics workshop (iNOW 2018), 21 – 27 July 2018, Berkeley, CA (USA)
7. E. Tournié, GaSb materials and devices: the IR toolbox, UK Semiconductors, 4 – 5 July 2018, Sheffield (UK): plenary conference.
8. J.B. Rodriguez, R. Alchaar, R. Rossignol, L. Höglund, C. Asplund, P. Christol "Material developments for longwave and very-longwave InAs/GaSb superlattice barrier structures infrared photodetectors", Quantum Structure Infrared Photodetector (QSIP) Conference, Stockholm, June 2018
9. L. Höglund, S. Naureen, H. Kataria, C. Asplund, R. Marcks von Würtemberg, J.B. Rodriguez, R. Alchaar, P. Christol, E. Costard " VLWIR InAs/GaSb superlattice infrared focal plane arrays for space applications" Quantum Structure Infrared Photodetector (QSIP) Conference, Stockholm, June 2018
10. I. Ribet-Mohamed, J. Nghiem, M. Caes, A. Kattinig, L. Höglund, E. Costard, J.B. Rodriguez, P. Christol " Temporal stability and correctability of a MWIR T2SL focal plane array" Infrared Physics & Technology **96**, 145-150 (2019), Quantum Structure Infrared Photodetector (QSIP) Conference, Stockholm, June 2018

11. A.N. Baranov, H. Nguyen-Van, Z. Loghmani, L. Cerutti, J.B. Rodriguez, J. Tournet, G. Narcy, G. Boissier, G. Patriarche, M. Bahriz, E. Tournié, R. Teissier, Quantum cascade lasers grown on silicon, 18th Int. Conf. on Laser Optics, 4 – 8 June 2018, St Petersburg (Russia).
12. E. Tournié, A.N. Baranov, L. Cerutti, J.-P. Perez, J.-B. Rodriguez, Sb-based IR Detector and Emitter Materials, CSWeek 2018, 29 May – 1 June 2018, Boston, MA (USA)
13. E. Tournié, A.N. Baranov, L. Cerutti, J.B. Rodriguez, R. Teissier, Mid-IR Optoelectronic devices epitaxially grown on Silicon, CLEO 2018, 13 – 18 May 2018, San Jose, CA (USA).
14. [A. Trampert](#), M. Niehle, H. Drube, J.B. Rodriguez, L. Cerutti, E. Tournié, "On the origin of defects during III-Sb epitaxy on Si(001)", (oral invité) 2018 E-MRS Spring meeting, Symposium V, 18 – 22 June 2018, Strasbourg (France).
15. Thierry Taliercio, "Plasmonique tout semiconducteur pour les bio-capteurs", 16èmes JNMO Journées Nano, Micro, et Opto-électronique, Cap Esterel-Agay du 13 au 15 Juin 2018.
16. E. Centeno (invite), F. Omeis, R. Smaali, F. Gonzalez-Posada, L. Cerutti and T. Taliercio, "Plasmonic and metamaterials devices operating from mid infrared to THz frequencies based on highly doped semiconductors", GDR NanoTeraMIR – Montpellier – 2018 May, 29-31th.
17. F. Omeis, R. Smaali, F. Gonzalez-Posada, L. Cerutti, T. Taliercio and E. Centeno (invité), "Highly doped semiconductors based plasmonic devices", Functional Materials, Materials and devices for green photonics, EMRS Spring Meeting 2018, Strasbourg, France, June 18-22, 2018.
18. P. Christol "Antimonide-based structures for infrared photodetection and photovoltaic devices" European Cost Workgroup Meeting "Multiscale Solar", Wroclaw, Poland, February 2018
19. P. Christol "An overview of Infrared barrier photodetectors", 8th International Symposium on Optronics in Defence & Security (OPTRO 2018), Paris, February 2018
20. A.N. Baranov, Quantum cascade lasers grown on silicon, 18th International Conference on Laser Optics (St. Petersburg, Russia, 2018).
21. A.N. Baranov, Long wavelength InAs-based quantum cascade lasers – **keynote presentation** 3rd International Conference TERA 2018 (Nizhny Novgorod, Russia, 2018).

ACL : Articles dans des revues internationales avec comité de lecture référencées par ISI web / Peer reviewed publications referenced by ISIweb

1. Yi Huang, David Legrand, Rémi Vincent, Ekoué Athos Dogbe Foli, Derek Nowak, Gilles Lerondel,† Renaud Bachelot, Thierry Taliercio, Franziska Barho, Laurent Cerutti, Fernando Gonzalez-Posada, Beng Kang Tay, and Aurelien Bruyant, Spectroscopic nano-imaging of all-semiconductor plasmonic gratings using photoinduced force and scattering type nanoscopy, ACS Photonics **5**, 4352-4359 (2018).
2. Eduardo Alvear Cabezon, Rafik Smaali, Emmanuel Centeno, Fernando Gonzalez-Posada and Thierry Taliercio, Photogenerated metasurfaces at terahertz frequencies induced by a continuous-wave low pump, Phys. Rev. B **98**, 035305 (2018).
3. J. Nghiem, J. Jaeck, J. Primot, C. Coudrain, S. Derelle, E. Huard, M. Caes, S. Bernhardt, R. Haidar P. Christol, I. Ribet-Mohamed " MTF measurements of a type-II superlattice infrared focal plane array sealed in a cryocooler", Optic Express **26**, 11034-11045 (2018)
4. Mario Bomers, Aude Mezy, Laurent Cerutti, Franziska Barho, Fernando Gonzalez-Posada Flores, Eric Tournié, Thierry Taliercio, Phosphonate monolayers on InAsSb and GaSb surfaces for mid-IR plasmonics, Applied Surface Science **451**, pages 241-249 (2018).
5. A. Ponchet, G. Patriarche, J.-B. Rodriguez, L. Cerutti and E. Tournié, Interface energy analysis of III-V islands on Si (001) in the Volmer-Weber growth mode, Appl. Phys. Lett. **113** (19), 191601 (2018).
6. Davide Maria Di Paola, Anton V. Velichko, Mario Bomers, Nilanthy Balakrishnan, Oleg Makarovskiy, Mario Capizzi, Laurent Cerutti, Alexei N. Baranov, Manoj Kesaria, Anthony Krier, Thierry Taliercio, and Amalia Patané, Optical detection and spatial modulation of surface plasmon polaritons in a highly doped mid-infrared semiconductor, Advanced Optical Materials **6**(3), 1700492 (2018).

7. F. Barho, F. Gonzalez-Posada, M.J. Milla Rodrigo, M. Bomers, L. Cerutti, E. Tournié and T. Taliercio, Highly doped semiconductor plasmonic nanoantenna arrays for polarization selective broadband surface-enhanced infrared absorption spectroscopy of vanillin, *Nanophotonics* 7(2), 507-516 (2018).
8. M. Bomers, F. Barho, M.J. Milla-Rodrigo, L. Cerutti, R. Arinero, F. Gonzalez-Posada-Flores, E. Tournie, T. Taliercio, Pedestal formation of all-semiconductor gratings through GaSb oxidation for mid-IR plasmonics, *Journal of Physics D-Applied Physics* 51 (1), 015104 (2018).
9. M. Niehle, J.-B. Rodriguez, L. Cerutti, E. Tournié, and A. Trampert, On the origin of threading dislocations during epitaxial growth of III-Sb on Si(001): a comprehensive transmission electron tomography and microscopy study, *Acta Mater.* 143, 121 (2018).
10. T. Cerba, M. Martin, J. Moeyaert, S. David, J.L. Rouviere, L. Cerutti, R. Alcotte, J.B. Rodriguez, M. Bawedin, H. Boutry, F. Bassani, Y. Bogumilowicz, P. Gergaud, E. Tournié, T. Baron, Anti-phase boundary free GaSb layer grown on 300mm (001)-Si substrate by metal organic chemical vapor deposition, *Thin Solid Films* 645, 5 (2018).
11. E. Luna, O. Delorme, L. Cerutti, E. Tournié, J.-B. Rodriguez and A. Trampert, Microstructure and interface analysis of emerging Ga(Sb,Bi) epilayers and Ga(Sb,Bi)/GaSb quantum wells for optoelectronic applications, *Appl. Phys. Lett.* 112 (15), 151905 (2018).
12. O. Delorme, L. Cerutti, E. Tournié, and J.-B. Rodriguez, In situ determination of the growth conditions of GaSbBi alloys, *J. Cryst. Growth* 495, 9 (2018).
13. H. Nguyen-Van, A. N. Baranov, Z. Loghmari, L. Cerutti, J.-B. Rodriguez, J. Tournet, G. Narcy, G. Boissier, G. Patriarche, M. Bahriz, E. Tournié and R. Teissier, Quantum cascade lasers grown on silicon, *Sci. Rep.* 8, 7206 (2018).
14. E. Luna, O. Delorme, L. Cerutti, E. Tournié, J.-B. Rodriguez, and A. Trampert, Transmission Electron Microscopy of Ga(Sb,Bi)/GaSb Quantum Wells with varying Bi content and quantum well thickness *Semicond. Sci. Technol.* 33 (9), 094006 (2018).
15. M. Bomers, D. M. Di Paola, L. Cerutti, T. Michel, R. Arinero, E. Tournié, A. Patané and T. Taliercio, Mid-IR plasmonic compound with gallium oxide top layer formed by GaSb oxidation in water, *Semicond. Sci. Technol.* 33 (9), 095009 (2018).
16. S. S. Krishtopenko, S. Ruffenach, F. Gonzalez-Posada, G. Boissier, M. Marcinkiewicz, M. A. Fadeev, A. M. Kadykov, V. V. Rummyantsev, S. V. Morozov, V. I. Gavrilenko, C. Consejo, W. Desrat, B. Jouault, W. Knap, E. Tournié, and F. Teppe, Temperature-dependent terahertz spectroscopy of inverted-band three-layer InAs/GaSb/InAs quantum well, *Phys. Rev. B* 97, 245419 (2018)
17. I. Lucci, S. Charbonnier, L. Pedesseau, M. Vallet, L. Cerutti, J.-B. Rodriguez, E. Tournié, R. Bernard, A. Létoublon, N. Bertru, A. Le Corre, S. Rennesson, F. Semond, G. Patriarche, L. Largeau, P. Turban, A. Ponchet, and C. Cornet, Universal description of III-V/Si epitaxial growth processes, *Phys. Rev. Mat.* 2, 060401(R) (2018).
18. I. Lucci, S. Charbonnier, M. Vallet, P. Turban, Y. Léger, T. Rohel, N. Bertru, A. Létoublon, J.-B. Rodriguez, L. Cerutti, E. Tournié, A. Ponchet, G. Patriarche, L. Pedesseau, and C. Cornet, A stress-free and textured GaP template on silicon for solar water splitting, *Adv. Funct. Mater.* 18, 1801585 (2018).
19. P. Alekseev, M. Dunaevskiy, A. Monakhov, V. Dudelev, G. Sokolovskii, R. Arinero, R. Teissier and A. N. Baranov, "Half-disk laser: insight into the internal mode structure of laser resonators," *Optics Express* 26, 14433 (2018).
20. P. Laffaille, J. Manceau, T. Laurent, A. Bousseksou, L. Le Gratiet, R. Teissier, A. N. Baranov and R. Colombelli, "Intersubband polaritons at $\lambda \sim 2 \mu\text{m}$ in the InAs/AlSb system," *Applied Physics Letters* 112, 201113 (2018).
21. Loghmari, Z.; Bahriz, M.; Thomas, D. D.; Meguekam, A.; Van, H. N.; Teissier, R.; Baranov, A. N. "Room Temperature Continuous Wave Operation of InAs/AlSb-Based Quantum Cascade Laser at $11\mu\text{m}$ ". *Electron. Lett.* **2018**, 54 (17), 1045–1046.

ACLN : Articles dans des revues avec comité de lecture non répertoriées par l'AERES ou dans des bases de données internationales / Peer-reviewed publications which are not referenced by AERES or international databases.

ASCLN : Articles sans comité de lecture / Publications without peer-reviewing

BRE : Brevets / Patents

23/11/2018 - 18 71734 dépôt français.

Détecteur à cellules modulaires de mesure opto-acoustique exaltée par résonateur à quartz

Aurore VICET/ Roman ROUSSEAU/Erwan TERRIER/Mathias DIGNETON

Université de Montpellier (UM) - Adresse : 163 Rue Auguste Broussonnet, 34090 Montpellier, France (FR) ;

Centre National de la Recherche Scientifique (CNRS) - Adresse : 3 Rue Michel-Ange, 75794 Paris Cedex 16, France (FR).

CMR Marseille

21/11/18 – 1871680 dépôt Français

Résonateur mécanique à mesure capacitive pour la spectroscopie photo-acoustique de gaz

Kaim CHAMASSI/Michael BHRIZ/Aurore VICET

Université de Montpellier (UM) - Adresse : 163 Rue Auguste Broussonnet, 34090 Montpellier, France (FR) ;

Centre National de la Recherche Scientifique (CNRS) - Adresse : 3 Rue Michel-Ange, 75794 Paris Cedex 16, France (FR).

C-ACTI : Communications avec actes dans un congrès international / Communications with proceedings at international conferences.

1. J.Tournet, Y. Rouillard, E.Tournié, AlInAsSb for GaSb-based multi-junction solar cells, Photonics West 2018, OPTO - Photovoltaic Devices VII, Jan 28 – Feb 1, 2018, San Francisco, USA, Proc. of SPIE, **10527** (2018) 105270A-1.
2. J. Nghiem, R. Haïdar, M. Caes, S. Bernhardt, E. Huard, J. Jaeck, S. Derelle, I. Ribet, **J.B. Rodriguez**, L. Höglund, J. Primot, E. Costard, P. Christol, (2018). "Study of the MTF of a MWIR T2SL focal plane array in IDDCA configuration", Infrared Physics & Technology, Infrared Physics & Technology, (96), p 192-198, January 2019 (PROC. QSIP 2018)
3. I Ribet-Mohamed, J Nghiem, M Caes, M Guénin, L Höglund, E Costard, **JB Rodriguez**, P Christol, (2018). "*Temporal stability and correctability of a MWIR T2SL focal plane array*", Infrared Physics & Technology, (96), p 145-150, January 2019 (PROC. QSIP 2018)
4. Q Durlin, JP Perez, L Cerutti, **JB Rodriguez**, T Cerba, T Baron, E Tournié, P Christol, (2018). "Midwave infrared barrier detector based on Ga-free InAs/InAsSb type-II superlattice grown by molecular beam epitaxy on Si substrate", Infrared Physics & Technology, (96), p 39-43, January 2019 (PROC. QSIP 2018)
5. L Höglund, **JB Rodriguez**, R Marcks von Würtemberg, S Naureen, R Ivanov, C Asplund, R Alchaar, P Christol, A Rouvié, J Brocal, O Saint-Pé, E Costard, (2018). "*Influence of shallow versus deep etching on dark current and quantum efficiency in InAs/GaSb superlattice photodetectors and focal plane arrays for long wavelength infrared detection*", Infrared Physics & Technology, (95), p 158-163, December 2018 (PROC. QSIP 2018)
6. A Yèche, F Boulard, C Cervera, JP Perez, **JB Rodriguez**, P Christol, O Gravrard, (2018). "*Development of Electron Beam Induced Current for diffusion length determination of VLWIR HgCdTe and MWIR T2SL based photodetectors*", Infrared Physics & Technology, (95), p 170-176 (PROC. QSIP 2018)
7. T. Cerba, P. Hauchecorne, M. Martin, J. Moeyaert, R. Alcotte, B. Salem, E. Eustache, P. Bezard, X. Chevalier, G. Lombard, F. Bassani, S. David, G. Beainy, E. Tournié, G. Patriarche, H. Boutry, M. Bawedin, T. Baron, InAs/GaSb thin layers directly grown on nominal (0 0 1)-Si substrate by MOVPE for the fabrication of InAs FINFET, Int. Conf. on MOVPE (ICMOVPE XIX), 3 – 8 June 2018, Nara, Japan: oral communication, J. Cryst. Growth **510**, 18 – 22 (2019).
8. L. Höglund, **J. B. Rodriguez**, S. Naureen, R. Ivanov, C. Asplund, R. Marcks von Würtemberg, R. Rossignol, P. Christol, A. Rouvié, J. Brocal, O. Saint-Pé, E. Costard, "*Very long wavelength type-II InAs/GaSb superlattice infrared detectors*", (**oral**) SPIE Defense + Commercial Sensing 2018, Infrared Technology and Applications XLIV, 15-19 April 2018, Orlando (USA), Proceedings SPIE XLIV, 10624, 106240I (2018)

9. S. Bernhardt, J. Nghiem, J. Jaeck, S. Derelle, E. Huard, J. Primot, L. Höglund, E. Costard, P. Christol, I. Ribet-Mohamed " *Modulation transfer function measurements on a MWIR T2SL focal plane array in IDCCA configuration*", SPIE Defense + Commercial Sensing 2018, Infrared Technology and Applications XLIV, 15-19 April 2018, Orlando (USA), Proceedings SPIE XLIV, 10625, 1062508 (2018)

C-COM : Communications orales sans actes dans un congrès international ou national / Oral communications without proceedings at international or national conferences.

1. K. Chamassi, A. Vicet, R. Rousseau, D. Oussalah and M. Bahriz New silicon micro-electromechanical resonator for enhanced photoacoustic spectroscopy applications PIERS 2018 1-4 aug 2018, Toyama (Japan)
2. R. Alchaar, J.-B. Rodriguez, R. Rossignol, L. Höglund, E. Costard, P. Christol, " *Electrical and electro-optical characterizations of LWIR/VLWIR T2SL barrier photodetectors*", (oral) Workshop Infrared detection for space applications, 3-5 July 2018, Toulouse
3. J.P. Perez*, Q. Durlin, C. Cervera, P. Christol " *New Ga-free InAs/InAsSb superlattice infrared photodetector*", PHOTOPTICS International Conference, Madeira, January 2018
4. U. Zavala-Morán, R. Alchaar, V.H. Compeán-Jasso, F. De Anda-Salazar, J.P. Pérez, P. Christol, " *Design and fabrication of InAs/InAsSb superlattice X_{Bn} photodetector & GaInAsSb/GaSb heterojunction for operation in the midwave infrared domain*", Escuela Latinoamericana de Óptica (ELO) 2018, León, Guanajuato, México, October 2018.
5. Franziska Barho, Fernando Gonzalez-Posada, Laurent Cerutti, Thierry Taliercio, "Absorbeurs parfaits à base de semi-conducteurs fortement dopés pour la spectroscopie vibrationnelle exaltée", Groupement de Recherches 3430, Plasmonique Moléculaire, Spectroscopies Exaltées, Journées plénières 2018, Du 19 novembre au 21 novembre 2018, IDA, ENS Paris-Saclay.
6. Lucchesi, Christophe; Vaillon, Rodolphe; Cakiroglu, Dilek; Perez, Jean-Philippe; Taliercio, Thierry; Tournié, Éric; Chapuis, Pierre-Olivier, "Near-field radiative heat transfer experiments for thermophotovoltaic conversion: temperature and material dependence", Nanoscale and Microscale Heat Transfer VI, Eurotherm Seminar No 111, 2 - 7 December 2018, Levi, Lapland, Finland.
7. Milovich, Daniel; DeSutter, John; Cakiroglu, Dilek; Lucchesi, Christophe; Chapuis, Pierre-Olivier; Antolin, Elisa; Datas, Alejandro; Villa, Juan; Pérez, Jean-Philippe; Taliercio, Thierry; Tournié, Eric; Marti, Antonio; Francoeur, Mathieu; Vaillon, Rodolphe, "Design of efficient photovoltaic cells for near-field thermophotovoltaics", Nanoscale and Microscale Heat Transfer VI, Eurotherm Seminar No 111, 2 - 7 December 2018, Levi, Lapland, Finland.
8. Franziska Barho, Fernando Gonzalez-Posada Flores, Laurent Cerutti, Thierry Taliercio, "All-semiconductor plasmonic metamaterials for mid-infrared perfect absorption and selective thermal emission", Nanophotonics and Micro/Nano Optics International Conference 2018, 1st to 3rd October, Roma, Italy.
9. D.M. Di Paola, M. Bomers, N. Balakrishnan, M. Capizzi, A. Velichko, O. Makarovskiy, L. Cerutti, A. Baranov, M. Kesaria, A. Krier, T. Taliercio, A. Patané, "Mid-infrared surface plasmon polaritons in a novel highly doped semiconductor", 34th International Conference on the Physics of Semiconductors, From 29th July to 3rd August, 2018, Montpellier, France.
10. M. Bomers, F. Barho, B. Charlot, A. Mezy, L. Cerutti, F. González-Posada, E. Tournié, T. Taliercio, "III-V semiconductor plasmonics for microfluidic molecular sensing", Final conference of PROMIS, Photonics by the Lake, 18th and 19th July 2018, Windermere, UK.
11. F. Barho, M. Bomers, F. Gonzalez-Posada-Florès, L. Cerutti, E. Tournié, T. Taliercio, "Plasmonique tout-semi-conducteur pour les applications du moyen-infrarouge", Congrès de la Société Française d'Optique, Optique 2018, 3-6 Juillet 2018, Toulouse, France.
12. Rodolphe Vaillon, Christophe Lucchesi, Etienne Blandre, P.-Olivier Chapuis, Dilek Cakiroglu, Jean-Philippe Perez, Thierry Taliercio, Eric Tournié, Elisa Antolin, Alejandro Datas, Antonio Marti, John DeSutter, Daniel Milovich, Lei Tang, Mathieu Francoeur, Makoto Shimizu, Asaka Kohiyama, Hiroo Yugami, "Thermophotovoltaic devices for solar and thermal energy conversion", Journées Nationales sur l'Énergie Solaire (JNSE), 27 au 29 Juin 2018, Campus de LyonTech-la Doua, Villeurbanne.

13. F. Gonzalez-Posada, F. Omeis, R. Smaali, L. Cerutti, E. Centeno, T. Taliercio, "THz absorbers with highly doped semiconductors based in plasmonic nano-resonators", Functional Materials, Metamaterials: from waves to matter, EMRS Spring Meeting 2018, Strasbourg, France, June 18-22, 2018.
14. F. Barho, M. Bomers, F. Gonzalez-Posada, L. Cerutti, E. Tournie, T. Taliercio, "Surface enhanced infrared absorption with highly doped InAsSb plasmonic nanostructures", GDR NanoTeraMIR – Montpellier – 2018 May, 29-31th.
15. M. Bomers, B. Charlot, F. Barho, L. Cerutti, F. González-Posada, T. Taliercio, "All-semiconductor mid-IR plasmonics for femtolitre IR-spectroscopy", International Conference on Biomedical Photonics, March 16-17 2018, La Grande Motte, France.
16. Y. Rouillard, J. Tournet and E. Tournié, "When sun meets antimony: antimonides-based solar cells", Integrated Photovoltaics Technical Conference 2018 (i-PVTC), September 10-12 2018, Cassis, France
17. Y. Rouillard, J. Tournet and E. Tournié, "When sun meets antimony: antimonides-based solar cells", COST MultiscaleSolar workgroup meeting, September 13-14 2018, Marseille, France
18. Z. Loghmari, M. Bahriz, A. Meguekam, H. Nguyen-Van, R. Teissier, et A. N. Baranov, « InAs-based quantum cascade lasers emitting close to 25 μm », présenté à Journée GdR NanoTeraMIR, Montpellier, France, 29-mai-2018.
19. Z. Loghmari *et al.*, « Room temperature continuous wave operation of InAs/AlSb-based distributed feedback quantum cascade lasers at 11 μm », présenté à Conference ICPS 2018, Montpellier, France, 01-août-2018.
20. Z. Loghmari, M. Bahriz, A. Meguekam, H. Nguyen-Van, R. Teissier, et A. N. Baranov, « Continuous wave operation of InAs-based quantum cascade lasers above 20 μm », présenté à Conference ICPS 2018, Montpellier, France, 01-août-2018.
21. R. Teissier *et al.*, « Quantum cascade lasers grown on silicon », présenté à Conference ICPS 2018, Montpellier, France, 01-août-2018.
22. I. Lucci, S. Charbonnier, L. Pedesseau, M. Vallet, **L. Cerutti, J.B. Rodriguez**, E. Tournié, R. Gautheron-Bernard, A. Letoublon, N. Bertru, A. Le Corre, R. Stéphanie, F. Semond, G. Patriarche, L. Largeau, A. Ponchet, P. Turban, and C. Cornet "III-V/Si heterogeneous growth: thermodynamics and antiphase domains formation" International Conference on Physics of Semiconductor (ICPS), Montpellier, France, 29July – 03 August 2018
23. D.M. Di Paola, M. Bomers, N. Balakrishnan, M. Capizzi, A. Velichko, O. Makarovski, L. Cerutti, A.N. Baranov, M. Kesaria, A. Krier, T. Taliercia, and A. Patané "Mid-Infrared surface plasmon polaritons in a novel highly doped semiconductor" Oral: International Conference on Physics of Semiconductor (ICPS), Montpellier, France, 29July – 03 August 2018
24. R. Teissier *et al.*, « Quantum cascade lasers grown on silicon », présenté à IQCLSW 2018, Cassis, France, 09-sept-2018.
25. L.Cerutti, D. Diaz-Thomas, M. Bahriz, A. Meguekam Sado, E. Tournié, and A.N. Baranov, "Influence of the top AlGaAsSb cladding growth temperatures on the performances of Interband Cascade Lasers grown on GaSb substrate" Internantional Conference on Molecular Beam Epitaxy (IC-MBE), Paper Mo-C1-2, Shanghai, China, 2-7 September 2018
26. I. Lucci, S. Charbonnier, L. Pedesseau, M. Vallet, L. Cerutti, J.B. Rodriguez, E. Tournié, R. Gautheron-Bernard, A. Letoublon, N. Bertru, A. Le Corre, S. Renesson, F. Semond, G. Patriarche, L. Largeau, A. Ponchet, P. Turban, and C. Cornet "A universal mechanism to describe the III-V on Si epitaxy" Oral: Internantional Conference on Molecular Beam Epitaxy (IC-MBE), Paper Th-C1-3, Shanghai, China, 2-7 September 2018
27. A.N. Baranov, V.H. Nguyen, Z. Loghmari, L. Cerutti, J.B. Rodriguez, J. Tournet, G. Narcy, G. Boissier, G. Patriarche, M. Bahriz, E. Tournié, and R. Teissier, "MBE growth of InAs-based quantum cascade lasers on silicon" Oral: Internantional Conference on Molecular Beam Epitaxy (IC-MBE), Paper Th-C1-3, Shanghai, China, 2-7 September 2018
28. I. Marko, O. Delorme, L. Cerutti, E. Tournié, J.B. Rodriguez, and S. Sweeney, "Mid-Infrared 2.7 μm GaSbBi/GaSb quantum well lasers studied under high hydrostatic pressure" Conference on Mid-infrared Optoelectronics: Materials and Devices (MIOMD), Paper MIOMD-TuM11, Flagstaff, USA, 7-10 October 2018

C-AFF : Communications par affiche dans un congrès international ou national / Poster at international or national conferences.

1. Roman Rousseau, Zeineb Loghmari, Michael Bahriz, Kaim Chamassi, and Aurore Vicet - QEPAS sensors for high sensitivity monitoring. Ethylene and air quality applications. FLAIR 2018 - Field laser Applications in Industry and Research, September 10-14, 2018, Assisi (It)
2. Kaïm Chamassi, Wioletta Trzpił, Roman Rousseau, Aurore Vicet and Michael Bahriz - Methane detection based on photoacoustic spectroscopy with a new silicon micro-electromechanical resonator FLAIR 2018 - Field Laser Applications in Industry and Research, September 10-14, 2018 Assisi (It)
3. Roman Rousseau, Zeineb Loghmari, Michael Bahriz, Kaim Chamassi, and Aurore Vicet - Laser photoacoustic spectroscopy for high sensitive ethylene monitoring at 11 μm . 13-15 juin 2018 Cap Esterel
4. P. Christol, R. Alchaar, **J-B Rodriguez**, L. Höglund, S. Naureen, R. Marcks von Würtemberg, C. Asplund, E. Costard A. Rouvié, J. Brocal, O. Saint-Pé, "InAs/GaSb Type-II Superlattice (T2SL) photodetector operating in the very-long wavelength infrared (VLWIR) domain", (**poster**) ICSO 2018, 9-12 October 2018, Chania (Greece)
5. J.P. Perez, Q. Durlin, P. Christol " *Ga-free InAs/InAsSb Type-II Superlattice (T2SL) photodetector for high operating temperature in the midwave infrared (MWIR) spectral domain*") ICSO 2018, 9-12 October 2018, Chania (Greece)
6. J-P. Perez, U. Zavala-Moran, Q. Durlin, J-B. Rodriguez, **P. Christol** " *MBE growth of InAsSb-based superlattice structures to extend cut-off wavelength above 5 μm* " 20th International Conference on Molecular Beam Epitaxy (MBE 2018), Shanghai, September 2018
7. R. Alchaar, U. Zavala-Moran, H. Aït-Kaci, J.B. Rodriguez, J.P. Perez, P. Christol " *Antimonide-based X_{Bn} and X_{Bp} superlattices infrared barrier photodetectors*" 34th International Conference on the Physics of semiconductors (ICPS), Montpellier, July 2018
8. R. Alchaar, **J.-B. Rodriguez**, R. Rossignol, L. Höglund, P. Christol, " *Infrared InAs/GaSb type-II superlattice X_{Bp} barrier photodetectors for space applications*", (**poster**) GDR NanoTeraMIR 2018 workshop, 29-31 May 2018, Montpellier (France)
9. J. Nghiem, J. Jaeck, J. Primot, C. Coudrain, S. Derelle, E. Huard, M. Caes, S. Bernhardt, R. Haidar, P. Christol, I. Ribet-Mohamed " *Performance evaluation of InAs/GaSb type-II superlattice integrated detector dewar cooler*" GDR NanoTeraMIR 2018 workshop, 29-31 May 2018, Montpellier (France)
10. Q. Durlin, U. Zavala-Moran, J.P. Perez, , J.B. Rodriguez, **P. Christol** " *Design and fabrication of Ga-free InAs/InAsSb superlattice X_{Bn} photodetector for high operating in the MWIR domain*" GDR NanoTeraMIR 2018 workshop, 29-31 May 2018, Montpellier (France)
11. O. Delorme, L. Cerutti, E. Tournié and **J.-B. Rodriguez**, " *Ga(In)SbBi alloys for mid-IR applications: growth and characterization*", 16^{ème} Journées Nano, Micro et Optoélectronique (JNMO 2018), 13-15 June, Cap Esterel (France)
12. D.A. Diaz Thomas, A.N. Baranov, M. Bahriz, A. Meguekam-Sado and, L. Cerutti, "Study of Sb-based interband cascade active region for Mid-infrared VCSELs" 16^{ème} Journées Nano, Micro et Optoélectronique (JNMO 2018), 13-15 June, Cap Esterel (France)
13. O. Delorme, L. Cerutti, R. Kudrawiec, E. Luna, J. Kopaczek, M. P. Polak, M. Gladysiewicz, A. Trampert, E. Tournié, and J.-B. Rodriguez, " *GaSbBi/GaSb quantum wells for Mid-Infrared: growth and characterization*", 34th International Conference on the Physics of Semiconductors (ICPS 2018), 29th July – 3rd August, Montpellier (France)
14. Guilhem Pacot, Maria Jose Milla Rodrigo, Fernando Gonzalez-Posada Flores, Franziska Barho, Mario Bomers, Laurent Cerutti, Eric Tournié, Thierry Taliercio, "Semiconductor plasmonic resonances in the mid-IR range adjusted by thermal annealing", Nanophotonics and Micro/Nano Optics International Conference 2018, 1st to 3rd October, Roma, Italy.
15. F. Barho, F. Gonzalez-Posada, L. Cerutti, T. Taliercio, "All-semiconductor plasmonic metamaterial mid infrared near-perfect absorbers and thermal emitters", 34th International Conference on the Physics of Semiconductors, From 29th July to 3rd August, 2018, Montpellier, France.

16. E. Alvear Cabezon, E. Centeno, T. Taliercio, R. Smaali, F. Gonzalez-Posada, "Photo-generated metasurfaces at THz frequencies induced by a CW low-pump", 34th International Conference on the Physics of Semiconductors, From 29th July to 3rd August, 2018, Montpellier, France.
17. M. Bomers, F. Nucciarelli, T. Michel, A. Mezy, F. Barho, L. Cerruti, F. Gonzalez-Posada, J.L. Pau, T. Taliercio, "Surface functionalization of plasmonic III-V semiconductor and plasmonic Ga-nanoparticles for enhanced molecular vibration spectroscopy (SERS/SEIRA)", 34th International Conference on the Physics of Semiconductors, From 29th July to 3rd August, 2018, Montpellier, France.
18. F. Gonzalez-Posada Flores, G. Pacot, M.J. Milla, F. Barho, M. Bomers, L. Cerutti, E. Tournié, T. Taliercio, "Semiconductor plasmonic resonances in the mid-IR range adjusted by thermal annealing", 34th International Conference on the Physics of Semiconductors, From 29th July to 3rd August, 2018, Montpellier, France.
19. D.A. Diaz Thomas, A.N. Baranov, M. Bahriz, A. Meguekam-Sado and, L. Cerutti, "Study of Sb-based interband cascade active region for Mid-infrared VCSELs" Poster: International Conference on Physics of Semiconductor (ICPS), Montpellier, France, 29July – 03 August 2018
20. C. Lucchesi, P-O. Chapuis, D. Cakiroglu, J.-P. Perez, T. Taliercio, E. Tournié, and R. Vaillon, "Near-field radiative heat transfer experiments for thermophotovoltaic conversion", The 15th International conference on near-field optics, nanophotonics & related techniques, August 26-31, 2018, Troyes, France.
21. Clément Maës, Grégory Vincent, Riad Haïdar, Thierry Taliercio, "Nanostructures en semiconducteur pour le filtrage spectral", Congrès de la Société Française d'Optique, Optique 2018, 3-6 Juillet 2018, Toulouse, France.
22. Christophe Lucchesi, Pierre-Olivier Chapuis, Dilek Cakiroglu, Jean-Philippe Perez, Thierry Taliercio, Eric Tournié, Rodolphe Vaillon, "Étude Expérimentale du transfert radiatif en champ proche pour la conversion thermophotovoltaïque", Journées Nationales sur l'Énergie Solaire (JNSE), 27 au 29 Juin 2018, Campus de LyonTech-la Doua, Villeurbanne.
23. Eduardo Alvear Cabezon, Rafik Smaali, Emmanuel Centeno, Fernando Gonzalez-Posada, Thierry Taliercio, "Photo-generated metasurfaces at THz frequencies induced by a continuous wave low-pump", 16èmes JNMO Journées Nano, Micro, et Opto-électronique, Cap Esterel-Agay du 13 au 15 Juin 2018.
24. G. Pacot, M. J. Milla, F. Gonzalez-Posada, F. Barho, M. Bomers, L. Cerutti, E. Tournié, T. Taliercio, "Semiconductor plasmonic resonances in the Mid-IR adjusted by thermal annealing", 16èmes JNMO Journées Nano, Micro, et Opto-électronique, Cap Esterel-Agay du 13 au 15 Juin 2018.
25. Eduardo Alvear, Rafik Smaali, Fernando Gonzalez, Thierry Taliercio, and Emmanuel Centeno, "Photo-generated metasurfaces at THz frequencies induced by a CW low-pump", GDR NanoTeraMIR–Montpellier–2018 May, 29-31th.
26. F. Barho, M. Bomers, F. González-Posada, L. Cerutti, E. Tournié, T. Taliercio, "Highly doped semiconductor plasmonic nanoantenna arrays for surface enhanced infrared absorption spectroscopy", International Conference on Biomedical Photonics, March 16-17 2018, La Grande Motte, France.
27. J. Tournet, Y. Rouillard, E. Tournié, "Towards the Monolithic Integration of GaSb Solar Cells on Si", Compound Semiconductor Week (CSW), Cambridge, United States, May 29 - June 1 2018
28. Z. Loghmari, « Room temperature continuous wave operation of InAs-based distributed feedback quantum cascade lasers at $\sim 11 \mu\text{m}$ », Affiche présenté à Journée GdR NanoTeraMIR, Montpellier, France, 29-mai-2018.
29. R. Teissier, H. Nguyen-Van, M. Bahriz, Z. Loghmari, et A. N. Baranov, « Long wavelength ($\lambda > 17 \mu\text{m}$) DFB QCL operating in continuous wave at room temperature », Affiche présenté à IQCLSW 2018, Cassis, France, 09-sept-2018.
30. I. Lucci, S. Charbonnier, M. Vallet, P. Turban, Y. Léger, T. Rohel, N. Bertru, A. Létoublon, J.B. Rodriguez, L. Cerutti, E. Tournié, G. atriarche, A. Ponchet, L. Pedesseau, and C. Cornet "Large scale textured GaP(114) growth on vicinal Si substrate by molecular beam epitaxy for water splitting

applications” International Conference on Molecular Beam Epitaxy (IC-MBE), Paper Tu-P-43, Shanghai, China, 2-7 September 2018

31. D.A. Diaz Thomas, A.N. Baranov, M. Bahriz, A. Meguekam-Sado E.Tournié, and, L. Cerutti, “Study of Sb-based interband cascade lasers for MIR VCSELs” Conference on Mid-infrared Optoelectronics: Materials and Devices (MIOMD), Paper MIOMD-MoP3, Flagstaff, USA, 7-10 October 2018

Books

E. Tournié, A. Castellano, K. Madiomanana, A. Garreau, F. Lelarge, J.-B. Rodriguez, and L. Cerutti, GaSb lasers grown on Silicon for telecom applications, In: *Molecular-Beam Epitaxy, from research to mass production*, Second edition, edited by M. Henini (Elsevier, Amsterdam, 2018), pp. 625 – 635. ISBN: 978-0-12-812136-8.

Eric Tournié, Jean-Baptiste Rodriguez, Laurent Cerutti, Roland Teissier, Alexei N. Baranov, Epitaxial integration of antimonide-based semiconductor lasers on Si, In: *Silicon Photonics*, edited by S. Lourduoss, R. T. Chen and C. Jagadish, in *Semiconductors and Semimetals*, vol. 99, pp. 1 – 25 (Academic Press, San Diego, 2018). ISSN: 0080-8784. doi: 10.1016/bs.semsem.2018.08.002