

Journal papers

2017

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P. Cheben, J. H. Schmid, R. Halir, A. Sánchez-Postigo, D.-X. Xu, S. Janz, J. Lapointe, S. Wang, M. Vachon, A. Ortega-Moñux, G. Wangüemert-Pérez, I. Molina-Fernández, J. M. Luque-González, J. D. Sarmiento-Merenguel, J. Pond, D. Benedikovic, C. Alonso-Ramos, M. Dado, J. Müllerová, M. Pápeš, V. Vašinek, “Subwavelength index engineered waveguides and devices,” **Optical Fiber Communication Conference (OFC)**, March 2017, Los Angeles, USA (**Invited**).

E. Durán-Valdeiglesias, W. Zhang, C. Alonso-Ramos, H. C. Hoang, S. Serna, F. Sarti, F. La China, X. Le Roux, H. Yang, E. Cassan, A. Filoramo, V. Bezugly, M. Gurioli, L. Vivien, “Hybrid integration of carbon nanotubes in silicon photonic structures,” **SPIE Photonics West**, Feb. 2017, San Francisco, USA (**Invited**).

J-M Ramírez, V. Vakarín, P. Chaisakul, J. Frigerio, A. Ballabio, C. Gilles, D Chrastina, Q. Liu, G. Maisons, X. Le Roux, L. Vivien, M. Carras, G. Isella, D. Marris-Morini, “Ge-rich SiGe waveguides for mid-infrared photonics,” **SPIE Photonics West**, Feb. 2017, San Francisco, USA (**Invited**).

P. Damas, X. Le Roux, M. Berciano, G. Marcaud, C. Alonso-Ramos, D. Benedikovic, D. Marris-Morini, E. Cassan, L. Vivien, “Second-order nonlinearities in strained silicon photonic structures,” **SPIE Photonics West**, Feb. 2017, San Francisco, USA (**Invited**).

C. Alonso-Ramos, D. Pérez-Galacho, X. Le Roux, D. Benedikovic, F. Maezas, W. Zhang, S. Serna, V. Vakarín, E. Durán-Valdeiglesias, N. Belabas-Plougonven, L. Labonté, S. Tanzilli, P. Cheben, E. Cassan, D. Marris-Morini, L. Vivien, "Subwavelength Si photonics for near- and mid-infrared applications," **SPIE Photonics West**, Feb. 2017, San Francisco, USA (**Invited**).

C. Alonso-Ramos, D. Pérez-Galacho, X. Le Roux, D. Benedikovic, F. Mazeas, W. Zhang, S. Serna, V. Vakarín, E. Durán-Valdeiglesias, N. Belabas-Plougonven, L. Labonté, S. Tanzilli, P. Cheben, E. Cassan, D. Marris-Morini, L. Vivien, "Subwavelength engineered silicon photonics," *Nouveaux systèmes périodiques / Instrumentation diffractive, Journées du CCT-CNES et du GT2 – GDR Ondes*, Nov. 2016, Toulouse, France (**Invited**).

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P. Damas, X. Le Roux, M. Berciano, G. Marcaud, C. Alonso-Ramos, D. Benedikovic, E. Cassan, D. Marris-Morini, L. Vivien, "Advances in second order nonlinear effect in silicon," **Opto-Electronics and Communications Conference (OECC)**, November 2016, Niigata, Japan (**Invited**).

G. Z. Mashanovich, J. Soler Penadés, V. Mittal, G. S. Murugan, A. Z. Khokhar, C. J. Littlejohns, S. Stankovic, A. Ortega-Moñux, J. G. Wangüemert-Pérez, R. Halir, I. Molina-Fernández, C. Alonso-Ramos, D. Benedikovic, A. V. Villafranca, P. Cheben, J. J. Ackert, A. P. Knights, J. S. Wilkinson, M. Nedeljkovic, "Mid IR applications of Si photonics," **Opto-Electronics and Communications Conference (OECC)**, November 2016, Niigata, Japan (**Invited**).

S. Serna, P. Colman, W. Zhang, X. Le Roux, L. Vivien, E. Cassan, "Tailoring the GVD of hollow core slotted silicon photonic crystal waveguides for hybrid integration of soft materials," **Asia Communications and Photonics Conference (ACP)**, Nov. 2016, Wuhan, China (**Invited**).

C. Alonso-Ramos, D. Benedikovic, P. Cheben, Diego Pérez-Galacho, J. H. Schmid, S. Wang, D.-X. Xu, B. Lamontagne, J. Lapointe, S. Janz, R. Halir, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, J.-M. Fédéli, M. Dado, E. Cassan, D. Marris-Morini, L. Vivien, "Sub-wavelength engineered surface grating couplers," **OSA Subwavelength Incubator**, September 2016, Washington, USA (**Invited**).

D. Marris-Morini, V. Vakarín, P. Chaisakul, J. Frigerio, M. Rahman, J. M. Ramírez, A. Ballabio, D. Chrastina, X. Le Roux, L. Vivien, G. Isella, "High-speed modulators and photodetectors based on Ge/SiGe quantum wells," **E-MRS Fall Meeting**, Sept. 2016, Warsaw, Poland (**Invited**).

C. Alonso-Ramos, E. Durán-Valdeiglesias, W. Zhang, T. H. C. Hoang, S. Serna, X. Le Roux, E. Cassan, F. Sarti, U. Torrini, M. Balestrieri, A.-S. Keita, H. Yang, V. Bezugly, A. Vinattieri, G. Cuniberti, A. Filoramo, M. Gurioli, L. Vivien, "Hybrid integration of carbon nanotubes in silicon photonic structures," **International Conference on Information Optics and Photonics (CIOP)**, August 2016, Shanghai, China (**Keynote**).

E. Durán-Valdeiglesias, W. Zhang, T. H. C. Hoang, C. Alonso-Ramos, S. Serna, F. Sarti, F. La China, X. Le Roux, H. Yang, E. Cassan, A. Filoramo, V. Bezugly, M. Gurioli, L. Vivien, "Hybrid integration of carbon nanotubes in silicon," **Progress In Electromagnetics Research Symposium (PIERS)**, August 2016, Shanghai, China (**Invited**).

C. Alonso-Ramos, J. D. Sarmiento-Merenguel, R. Halir, X. Le Roux, L. Vivien, P. Cheben, E. Durán-Valdeiglesias, I. Molina-Fernández, D. Marris-Morini, D.-X. Xu, J. H. Schmid, S. Janz, A. Ortega-Moñux, "Silicon-on-insulator integrated tunable polarization controller with a 40 dB range in extinction ratio," **Progress In Electromagnetics Research Symposium (PIERS)**, August 2016, Shanghai, China (**Invited**).

P. Cheben, J. H. Schmid, D.-X. Xu, S. Janz, J. Lapointe, S. Wang, M. Vachon, D. Benedikovic, C. Alonso-Ramos, L. Vivien, R. Halir, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, M. Dado, J. Müllerová, J. Soler Penadés, M. Nedeljkovic, G. Z. Mashanovich, "Subwavelength engineered structures for integrated photonics," **Progress In Electromagnetics Research Symposium (PIERS)**, August 2016, Shanghai, China (**Keynote**).

C. Alonso-Ramos, D. Benedikovic, P. Cheben, Diego Pérez-Galacho, J. H. Schmid, S. Wang, D.-X. Xu, B. Lamontagne, J. Lapointe, S. Janz, R. Halir, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, J.-M. Fédéli, M. Dado, E. Cassan, D. Marris-Morini, L. Vivien, "Sub-wavelength engineered high directionality fiber-to-chip blazed grating couplers," **International Conference on Metamaterials, Photonic Crystals and Plasmonics (META)**, July 2016, Malaga, Spain (**Invited**).

D. Benedikovic, C. Alonso-Ramos, L. Vivien, P. Cheben, J. H. Schmid, S. Wang, D.-X. Xu, B. Lamontagne, J. Lapointe, S. Janz, R. Halir, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, J.-M. Fédéli, M. Dado, “High-efficiency single etch step surface grating couplers engineered by subwavelength structured metamaterials,” **International Conference on Metamaterials, Photonic Crystals and Plasmonics (META)**, July 2016, Malaga, Spain (**Invited**).

P. Cheben, J. H. Schmid, D.-X. Xu, S. Janz, J. Lapointe, M. Rahim, S. Wang, M. Vachon, R. Halir, A. Ortega-Moñux, J. G. Wangüemert-Pérez, I. Molina-Fernández, J. Pond, D. Benedikovic, C. Alonso-Ramos, J. Soler Penadés, M. Nedeljkovic, G. Z. Mashanovich, A. V. Velasco, M. L. Calvo, Y. Painchaud, M.-J. Picard, M. Poulin, M. Dado, J. Müllerová, W. Ye, M. Pápeš, V. Vašinek, “Subwavelength grating engineered metamaterial waveguide structures for silicon photonic integrated circuits,” **International Conference on Metamaterials, Photonic Crystals and Plasmonics (META)**, July 2016, Malaga, Spain (**Invited**).

M. Nedeljkovic, A. Ortega-Moñux, J. Soler Penadés, J. G. Wangüemert-Pérez, A. Z. Khokhar, R. Halir, Z. Qu, W. Cao, C. Mitchell, S. Stankovic, F. Gardes, C. Alonso-Ramos, P. Cheben, I. Molina-Fernández, “Sub-wavelength cladded suspended silicon photonic components for the mid-infrared: fabrication and experiments,” **International Conference on Metamaterials, Photonic Crystals and Plasmonics (META)**, July 2016, Malaga, Spain (**Invited**).

A. Ortega-Moñux, J. G. Wangüemert-Pérez, R. Halir, I. Molina-Fernández, J. Soler Penadés, M. Nedeljkovic, A. Z. Khokhar, Z. Qu, W. Cao, C. Mitchell, S. Stankovic, F. Gardes, G. Z. Mashanovich, C. Alonso-Ramos, P. Cheben, “Design of integrated photonic devices based on subwavelength structures for near and mid-infrared applications,” **International Conference on Metamaterials, Photonic Crystals and Plasmonics (META)**, July 2016, Malaga, Spain (**Invited**).

W. Zhang, S. Serna, X. Le Roux, C. Alonso-Ramos, L. Vivien, E. Cassan, “Analysis of silicon-on-insulator slot waveguide ring resonators targeting high Q-factors,” **International Conference on Transparent Optical Networks (ICTON)**, July 2016, Trento, Italy (**Invited**).

L. Viroth, D. Marris-Morini, D. Benedikovic, C. Alonso-Ramos, J.-M. Hartmann, E. Cassan, P. Crozat, X. Le Roux, C. Baudot, F. Boeuf, J.-M. Fédéli, L. Vivien, “Low power consumption receiver on silicon,” **International Conference on Transparent Optical Networks (ICTON)**, July 2016, Trento, Italy (**Invited**).

P. Damas, X. Le Roux, M. Berciano, G. Marcaud, C. Alonso-Ramos, D. Benedikovic, D. Marris-Morini, E. Cassan, L. Vivien, “Strained silicon photonics: Recent advances,” **International Conference on Transparent Optical Networks (ICTON)**, July 2016, Trento, Italy (**Invited**).

D. Marris-Morini, V. Vakarin, P. Chaisakul, J. Frigerio, M. Rahman, J. M. Ramírez, M.-S. Rouifed, D. Chrastina, X. Le Roux, G. Isella, L. Vivien, “Silicon photonics based on Ge/SiGe quantum well structures,” **International Conference on Transparent Optical Networks (ICTON)**, July 2016, Trento, Italy (**Invited**).

P. Cheben, J. H. Schmid, D.-X. Xu, S. Janz, J. Lapointe, M. Rahim, S. Wang, M. Vachon, R. Halir, A. Ortega-Moñux, J. D. Sarmiento-Merenguel, J. G. Wangüemert-Pérez, I. Molina-Fernández, J. Pond, D. Benedikovic, C. Alonso-Ramos, X. Le Roux, L. Vivien, D. Marris-Morini, J. Soler Penadés, M. Nedeljkovic, G. Z. Mashanovich, A. V. Velasco, M. L. Calvo, M. Dado, J. Müllerová, W. Ye, M. Pápeš, V. Vašinek, “Subwavelength structures for nanophotonic couplers, colourless splitters, polarization control and mid-infrared waveguides,” **International Conference on Transparent Optical Networks (ICTON)**, July 2016, Trento, Italy (**Invited**).

D. Benedikovic, C. Alonso-Ramos, L. Vivien, P. Cheben, J. H. Schmid, S. Wang, D.-X. Xu, B. Lamontagne, J. Lapointe, S. Janz, R. Halir, A. Ortega-Moñux, J.-G. Wangüemert-Pérez, I. Molina-Fernández, J.-M. Fédéli, M. Dado, “High-efficiency fiber-chip surface grating couplers,” **Photonics North**, May 2016, Québec City, Canada (**Invited**).

M. Nedeljkovic, J. Soler Penadés, A. Z. Khokhar, Z. Qu, W. Cao, C. Mitchell, S. Stanković, F. Gardes, A. Ortega-Moñux, J. G. Wangüemert-Pérez, R. Halir, I. Molina-Fernández, C. Alonso-Ramos, P. Cheben “Design of integrated mid-IR photonic devices,” **Photonics North**, May 2016, Québec City, Canada (**Invited**).

E. Casan, S. Serna, W. Zhang, T. H. Cam Hoang, X. Le Roux, L. Vivien, “GVD control of low loss slot photonic crystal waveguides for hybrid silicon photonics,” **SPIE Photonics Europe**, April 2016, Bruxelles, Belgium (**Invited**).

L. Vivien, D. Marris-Morini, L. Viro, D. Pérez-Galacho, P. Damas, C. Alonso-Ramos, J-M. Hartmann, E. Cassan, P. Crozat, X. Le Roux, C. Baudot, F. Boeuf, J-M. Fédéli, "Recent advances in silicon photonics," **SPIE Photonics West**, Feb. 2016, San Francisco, USA (**Invited**).

P. Cheben, D.-X. Xu, J. Schmid, S. Janz, S. Wang, M. Vachon, J. G. Wangüemert-Pérez, R. Halir, A. Ortega-Moñux, I. Molina-Fernández, M. Dado, D. Benedikovic, J. Müllerová, C. Alonso-Ramos, M. Pápeš, V. Vašínek, Y. Painchaud, M.-J. Picard, M. Guy, M. Rahim, "High-efficiency subwavelength index engineered fibre-chip couplers for photonics integration and sensing," **SPIE Photonics West**, Feb. 2016, San Francisco, USA (**Invited**).

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E. Durán-Valdeiglesias, C. Alonso-Ramos, W. Zhang, S. Serna, F. Sarti, F. La China, T. H. C. Hoang, X. Le Roux, H. Yang, E. Cassan, A. Noury, N. Izard, A. Filoramo, V. Bezugly, M. Gurioli, L. Vivien, "Hybrid Si photonics: Carbon nanotubes Integration on silicon," **Workshop Progress in Photonics**, October 2015, Florence, Italy (**Workshop**).

P. Cheben, D. Benedikovic, C. Alonso-Ramos, J. H. Schmid, R. Halir, D.-X. Xu, S. Janz, S. Wang, M. Vachon, J. Lapointe, B. Lamontagne, M. Rahim, M. Dado, J. Müllerová, J. G. Wangüemert-Pérez, A. Ortega-Moñux, I. Molina-Fernández, M. J. Picard, M. Poulin, M. Guy, M. Pápeš, V. Vašínek, "Sub-wavelength engineering for silicon photonics," **Asia Communications and Photonics Conference (ACP)**, November 2015, Shanghai, China (**Workshop**).

W. Zhang, S. Serna, X. Le Roux, L. Vivien, E. Cassan, "Silicon slot waveguide ring resonators: can we target high Q factors?," **International Conference on Transparent Optical Networks (ICTON)**, July 2015, Budapest, Hungary (**Invited**).

D. Pérez-Galacho, D. Marris-Morini, E. Cassan, C. Baudot, J.-M. Fédéli, S. Olivier, F. Boeuf, L. Vivien, "Comparison among silicon modulators based on free-carrier plasma dispersion effect," **International Conference on Transparent Optical Networks (ICTON)**, July 2015, Budapest, Hungary (**Invited**).

P. Damas, X. Le-Roux, D. Marris-Morini, E. Cassan, L. Vivien, "Strained silicon for photonics applications," **International Conference on Transparent Optical Networks (ICTON)**, July 2015, Budapest, Hungary (**Invited**).

L. Vivien, D. Marris-Morini, L. Viro, D. Perez-Galacho, G. Rasigade, J-M. Hartmann, E. Cassan, P. Crozat, S. Olivier, C. Baudot, F. Boeuf, J-M. Fédéli, "Ultra-fast silicon-based optoelectronic devices on a 300mm CMOS platform for on-chip optical interconnects," **International Conference on Transparent Optical Networks (ICTON)**, July 2015, Budapest, Hungary (**Invited**).

P. Cheben, D. Benedikovic, C. Alonso-Ramos, J. H. Schmid, M. Pápeš, D.-X. Xu, S. Janz, S. Wang, M. Vachon, J. G. Wangüemert-Pérez, R. Halir, A- Ortega- Moñux, I. Molina-Fernández, J.-M. Fédéli, J. Ctyroky, J. Soler Penadés, M. Nedeljkovic, G. Z. Mashanovich, W. Ye, M. L. Calvo, M. Dado, J. Müllerová, V. Vašínek, "Subwavelength waveguide structures for optical interconnects," **International Conference on Transparent Optical Networks (ICTON)**, July 2015, Budapest, Hungary (**Invited**).

L. Vivien, D. Marris-Morini, L. Viro, D. Perez-Galacho, G. Rasigade, J-M. Hartmann, E. Cassan, P. Crozat, S. Olivier, C. Baudot, F. Boeuf, J-M. Fédéli, "Ultra-fast silicon-based optoelectronic devices on a 300mm CMOS platform for on-chip optical interconnects," **First workshop for Data Center Interconnects**, July 2015, Budapest, Hungary (**Workshop**).

W. Zhang, S. Serna, X. Le Roux, L. Vivien, E. Cassan, "Hollow core slot silicon photonics for enhanced light-matter interaction," **International Photonics and Optoelectronics Meetings (POEM)**, July 2015, Wuhan, China (**Invited**).

P. Damas, X. Le Roux, E. Cassan, D. Marris-Morini, L. Vivien, "Recent advances in Pockels effect in silicon," **Asia Communications and Photonics Conference (ACP)**, November 2015, Hong-Kong, China (**Invited**).

A. Noury, E. Durán-Valdeiglesias, W. Zhang, F. Sarti, C. Alonso-Ramos, F. La China, T. H. C. Hoang, X. Le Roux, H. Yang, E. Cassan, N. Izard, A. Filoramo, V. Bezugly, M. Gurioli, L. Vivien, "Recent advances in carbon nanotube photonics on silicon platform," **Progress In Electromagnetics Research Symposium (PIERS)**, July 2015, Prague, Czech Republic (**Invited**).

F. Sarti, F. Biccari, F. Fioravanti, U. Torrini, A. Vinattieri, M. Gurioli, A. Filoramo, V. Derycke, V. Bezugly, H. Yang, G. Cuniberti, X. Le Roux, A. Noury, W. Zhang, N. Izard, E. Duran, C. Alonso-Ramos, E. Cassan and L. Vivien, "Integration of carbon nanotubes on silicon for efficient emission at telecom wavelengths," **Wonton**, June 2015, Kloster Banz, Germany (**Invited**).

F. Sarti, F. Biccari, F. Fioravanti, U. Torrini, A. Vinattieri, M. Gurioli, A. Filoramo, V. Derycke, V. Bezugly, H. Yang, G. Cuniberti, X. Le Roux, A. Noury, W. Zhang, N. Izard, E. Duran, C. Alonso-Ramos, E. Cassan and L. Vivien, "Carbon nanotubes for efficient emission at telecom wavelengths on silicon photonic structures," **EMRS spring meeting**, May 2015, Lille, France (**Invited**).

W. Zhang, S. Serna, X. Le Roux, L. Vivien, E. Cassan, "Investigation of loss mechanism of SOI slot waveguide ring resonators," **Opto-Electronics and Communications Conference (OECC)**, July 2015, Shanghai, China (**Invited**).

T.-H.-C. Hoang, W. Zhang, S. Serna, C. Caer, X. Le Roux, L. Vivien, E. Cassan, "SOI slot photonic crystal cavities on SiO₂ from $\lambda = 1.3 \mu\text{m}$ to $1.6 \mu\text{m}$," **Opto-Electronics and Communications Conference (OECC)**, July 2015, Shanghai, China (**Invited**).

A. Noury, E. Durán-Valdeiglesias, W. Zhang, F. Sarti, C. Alonso-Ramos, F. La China, H. C. Hoang, X. Le Roux, H. Yang, E. Cassan, N. Izard, A. Filoramo, V. Bezugly, M. Gurioli, L. Vivien, "Recent advances in carbon nanotube photonics on silicon platform," **Progress In Electromagnetics Research Symposium (PIERS)**, July 2015, Prague, Czech Republic.

P. Chaisakul, D. Marris-Morini, J. Frigerio, D. Chrastina, M-S. Rouifed, S. Cecchi, P. Crozat, G. Isella, L. Vivien, "Ge quantum well photonic platform on bulk silicon," **SPIE Photonics West**, Feb. 2015, San Francisco, USA (**Invited**).

D. Marris-Morini, P. Chaisakul, J. Frigerio, D. Chrastina, V. Vakarín, S. Cecchi, G. Isella, L. Vivien, "Optical Interconnects based on Ge/SiGe multiple quantum well structures," **Conference on Laser and Optoelectronics Europe (CLEO)**, May 2015, San Jose, USA (**Invited**).

P. Chaisakul, V. Vakarín, D. Marris-Morini, J. Frigerio, K. Wada, G. Isella, L. Vivien, "Ge/SiGe multiple quantum wells for photonic integrated circuits on silicon," **Photonics North**, June 2015, Ottawa, Canada (**Invited**).

D. Marris-Morini, P. Chaisakul, J. Frigerio, M-S. Rouifed, V. Vakarín, D. Chrastina, X. Le Roux, G. Isella, L. Vivien, "Silicon photonics based on Ge/SiGe quantum well," **International Conference on Group IV Photonics (GFP)**, August 2015, Vancouver, Canada (**Invited**).

D. Marris-Morini, V. Vakarín, P. Chaisakul, M-S. Rouifed, J. Frigerio, D. Chrastina, S. Cecchi, G. Isella, L. Vivien, "Ge/SiGe Quantum well optical modulator," **International conference on Solid State Device and Materials (SSDM)**, September 2015, Sapporo, Japan (**Invited**).

D. Marris-Morini, P. Chaisakul, J. Frigerio, M-S. Rouifed, V. Vakarín, D. Chrastina, X. Le Roux, G. Isella, L. Vivien, "Silicon photonics based on Ge/SiGe quantum well structures," **Asia Communications and Photonics Conference (ACP)**, November 2015, Hong Kong, China (**Invited**).