

List of publications of Stéphane Clemmen

List fulfilling the [Guide for applicants 2024](#)'s requirements

1. **Clemmen, S.**, & Massar, S. (2023). *Quasi-deterministic single-photon source*.
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/366754/3/2023-Clemmen-Brevet-US20230367176A1.pdf>
2. Manta Chapa, M., Krücker, C., Alanagh, H., Thourhout, D. V., & **Clemmen, S.** (2023). Silicon Photonics-based Geiger-operated Avalanche PD for Quantum PICs. *Frontiers in Optics + Laser Science 2023 (FiO, LS): Technical Digest Series (Optica Publishing Group, 2023)* (p. JM7A.132) *Frontiers in Optics + Laser Science 2023 (FiO, LS)*(12/10/2023).
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/368362/3/ls-2023-jm7a.132.pdf>
3. Vanackere, T., Vandekerckhove, T., Bogaert, L., Billet, M., Poelman, S., Cuyvers, S., Van Kerrebrouck, J., Moerman, A., Caytan, O., Singh, N., Lemey, S., Torfs, G., Ossieur, P., Roelkens, G., **Clemmen, S.**, & Kuyken, B. (2023). Heterogeneous integration of a high-speed lithium niobate modulator on silicon nitride using micro-transfer printing. *APL Photonics*, 8(8). doi:10.1063/5.0150878
 https://dipot.ulb.ac.be/dspace/bitstream/2013/366318/3/086102_1_5.0150878.pdf
4. Vandekerckhove, T., Vanackere, T., De Witte, J., Lufungula, I. L., Vissers, E., Roelkens, G., **Clemmen, S.**, & Kuyken, B. (2023). High-Efficiency Second Harmonic Generation in Heterogeneously-Integrated Periodically-Poled Lithium Niobate on Silicon Nitride. In *Conference on Lasers and Electro-Optics/Europe (CLEO/Europe 2023) and European Quantum Electronics Conference (EQEC 2023)* (p. cd_3_2) Optica Publishing Group.
 https://dipot.ulb.ac.be/dspace/bitstream/2013/366315/3/cleo_europe-2023-cd_3_2.pdf
5. Vandekerckhove, T., Vanackere, T., De Witte, J., Cuyvers, S., Dos Reis, L. N., Billet, M., Roelkens, G., **Clemmen, S.**, & Kuyken, B. (2023). Reliable micro-transfer printing method for heterogeneous integration of lithium niobate and semiconductor thin films. *Optical Materials Express*, 13(7), 1984. doi:10.1364/OME.494038
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/360540/3/ome-13-7-1984.pdf>
6. Vanackere, T., Vandekerckhove, T., Bogaert, L., Billet, M., Poelman, S., Cuyvers, S., Kerrebrouck, J. V., Moerman, A., Caytan, O., Lemey, S., Torfs, G., Roelkens, G., **Clemmen, S.**, & Kuyken, B. (2023). High-Speed Lithium Niobate Modulator on Silicon Nitride using Micro-Transfer Printing. In *CLEO 2023 Technical Digest Series: CLEO: Science and Innovations 2023* (p. STh1R.1) Optica Publishing Group. doi:10.1364/CLEO_SI.2023.STh1R.1
 https://dipot.ulb.ac.be/dspace/bitstream/2013/366316/3/cleo_europe-2023-cd_3_2.pdf
7. Vandekerckhove, T., Vanackere, T., De Witte, J., Cuyvers, S., Dos Reis, L. N., Billet, M., Roelkens, G., **Clemmen, S.**, & Kuyken, B. (2023). Pillar-Based High-Yield Heterogeneous Integration of Lithium Niobate and Gallium Phosphide Thin Films. In *CLEO 2023 Technical Digest Series: CLEO: Science and Innovations 2023* (p. STh4O.6) Optica Publishing Group. doi:10.1364/CLEO_SI.2023.STh4O.6
 https://dipot.ulb.ac.be/dspace/bitstream/2013/366317/3/cleo_si-2023-sth4o.6.pdf
8. Reep, T., Wu, C., Wang, Z., Brems, S., **Clemmen, S.**, Huyghebaert, C., Van Campenhout, J., Pantouvaki, M., Van Thourhout, D., & Kuyken, B. (2022). Saturable absorption of a

- double layer graphene modulator on a slot waveguide. *2022 IEEE Photonics Conference* (p. 9975477) 2022 IEEE Photonics Conference (IPC)(13-17 November 2022: Vancouver).
https://dipot.ulb.ac.be/dspace/bitstream/2013/355738/3/Saturable_absorption.pdf
9. David, T., Kockaert, P., & **Clemmen, S.** (2022). *Bragg gratings to compensate phase-mismatch in parametric processes*. Abstract session presented at IEEE Benelux Photonics Chapter Annual Symposium 2022(26: 24-25 November 2022: Eindhoven University of Technology, The Netherlands)
https://dipot.ulb.ac.be/dspace/bitstream/2013/352764/3/AbstractWord_2022_ieee.pdf
 10. Cuyvers, S., Vanackere, T., Vandekerckhove, T., Poelman, S., Op de Beeck, C., De Witte, J., Hermans, A., Van Gasse, K., Picque, N., Van Thourhout, D., Roelkens, G., **Clemmen, S.**, & Kuyken, B. (2022). High-Yield Heterogeneous Integration of Silicon and Lithium Niobate Thin Films. *Technical Digest Series (Optica Publishing Group, 2022)* (p. STu4G.2) Conference on Lasers and Electro-Optic(15 May 2022).
https://dipot.ulb.ac.be/dspace/bitstream/2013/355746/3/cleo_si-2022-stu4g.2.pdf
 11. Massar, S., & **Clemmen, S.** (2021). Resource efficient single photon source based on active frequency multiplexing. *Optics Letters*, 46(12), 2832-2835.
<https://dipot.ulb.ac.be/dspace/bitstream/2013/325063/3/OL.pdf>
 12. Reynkens, K., **Clemmen, S.**, Zhao, H., Raza, A., Vanackere, T., Stassen, A., Van Daele, M., Dendooven, J., & Baets, R. (2021). Gold-induced photothermal background in on-chip surface enhanced stimulated Raman spectroscopy. *Optics Letters*, 46(5), 953-956. doi:10.1364/OL.418527
<https://dipot.ulb.ac.be/dspace/bitstream/2013/321047/3/ol-46-5-953.pdf>
 13. Reynkens, K., **Clemmen, S.**, Raza, A., Zhao, H., Peñaranda, J. S.-D., Detavernier, C., & Baets, R. (2020). Mitigation of photon background in nanoplasmonic all-on-chip Raman sensors. *Optics express*, 28(22), 33564. doi:10.1364/OE.408638
<https://dipot.ulb.ac.be/dspace/bitstream/2013/315043/4/oe-28-22-33564.pdf>
<https://dipot.ulb.ac.be/dspace/bitstream/2013/315043/3/oe-28-22-33564.pdf>
 14. **Clemmen, S.** (2020). Coherent frequency conversion for quantum information processing. *Proceedings of SPIE - The International Society for Optical Engineering*, 11265, 112650G. doi:10.1117/12.2550159
<https://dipot.ulb.ac.be/dspace/bitstream/2013/305016/5/photonics-west2020.pdf>
 15. Li, Y., Zhao, H., Raza, A., **Clemmen, S.**, & Baets, R. (2020). Surface-Enhanced Raman Spectroscopy Based on Plasmonic Slot Waveguides with Free-Space Oblique Illumination. *IEEE journal of quantum electronics*, 56(1), 8864067. doi:10.1109/JQE.2019.2946839
<https://dipot.ulb.ac.be/dspace/bitstream/2013/298652/4/SERSoblique.pdf>
<https://dipot.ulb.ac.be/dspace/bitstream/2013/298652/3/SERSoblique.pdf>
 16. Van Daele, M., Griffiths, M. B., Raza, A., Minjauw, M., Solano, E., Feng, J.-Y., Ramachandran, R., **Clemmen, S.**, Baets, R., Barry, S. P., Detavernier, C., & Dendooven, J. (2019). Plasma-Enhanced Atomic Layer Deposition of Nanostructured Gold Near Room Temperature. *ACS Applied Materials & Interfaces*, 11(40), 37229-37238. doi:10.1021/acsami.9b10848

-  <https://dipot.ulb.ac.be/dspace/bitstream/2013/295392/3/PE-ALD-gold.pdf>
17. Raza, A., **Clemmen, S.**, Wuytens, P. C., De Goede, M., Tong, A., Le Thomas, N., Liu, C., Suntivich, J., Skirtach, A., Garcia-Blanco, S., Blumenthal, D., Wilkinson, J., & Baets, R. (2019). High index contrast photonic platforms for on-chip Raman spectroscopy. *Optics express*, 27(16), 23067-23079. doi:10.1364/OE.27.023067
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/295395/3/HI-Ramanplatforms.pdf>
 18. Losada, J., Raza, A., **Clemmen, S.**, Serrano, A., Griol, A., Baets, R., & Martínez, A. (2019). SERS Detection via Individual Bowtie Nanoantennas Integrated in Si₃N₄ Waveguides. *IEEE journal of selected topics in quantum electronics*, 25(3), 1-6. doi:10.1109/JSTQE.2019.2896200
 https://dipot.ulb.ac.be/dspace/bitstream/2013/285469/3/SERS_matinez_ali.pdf
 19. Hermans, A., **Clemmen, S.**, Baets, R. G., Genoe, J., & Rolin, C. (2019). *Growth of Organic Crystalline Thin Films with Strong Second-Order Nonlinearity for Integrated Optics*. European Conference on Integrated Optics(21: 24-04-2019: Ghent, Belgium)
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/289036/3/ecio2019.pdf>
 20. Ramelow, S., Farsi, A., Vernon, Z., **Clemmen, S.**, Ji, X., Sipe, J., Liscidini, M., Lipson, M., & Gaeta, A. A. (2019). Strong Nonlinear Coupling in a Si₃N₄ Ring Resonator. *Physical review letters*, 122, 153906.
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/289032/3/StronNLCoupling.pdf>
 21. D'heer, H., Saurav, K., Tuccio, S., **Clemmen, S.**, Lenci, S., Stassen, A., Arce, C., Watte, J., & Thourhout, D. (2019). Broadband and Temperature Tolerant Silicon Nitride Liquid Controlled Waveguide Coupler. *Journal of lightwave technology*, 1-1. doi:10.1109/JLT.2019.2902113
 https://dipot.ulb.ac.be/dspace/bitstream/2013/285471/3/low_power_switch.pdf
 22. Hermans, A., Van Daele, M., Dendooven, J., **Clemmen, S.**, Detavernier, C., & Baets, R. G. F. (2018). Integrated silicon nitride electro-optic modulators with atomic layer deposited overlays. *Optics Letters*, 44(5), 1112-1115. doi:10.1364/OL.44.001112
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/285476/4/modulator.pdf>
 23. Hermans, A., Janneck, R., Rolin, C., **Clemmen, S.**, Heremans, P., Genoe, J., & Baets, R. (2018). Growth of thin film organic crystals with strong nonlinearity for on-chip second-order nonlinear optics. *Proceedings of the 23rd Annual Symposium of the IEEE Photonics Benelux Chapter* (pp. 1-4).
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/289578/3/Growthofthinfilmorga.pdf>
 24. Raza, A., **Clemmen, S.**, Wuytens, P. C., Muneeb, M., Van Daele, M., Dendooven, J., Detavernier, C., Skirtach, A., & Baets, R. (2018). ALD assisted nanoplasmonic slot waveguide for on-chip enhanced Raman spectroscopy. *APL: Organic Electronics and Photonics*, 3(11), 116105. doi:10.1063/1.5048266
 https://dipot.ulb.ac.be/dspace/bitstream/2013/283191/3/ALD_wg_nanoplasmonic.pdf
 25. Zhao, H., **Clemmen, S.**, Raza, A., & Baets, R. G. F. (2018). Stimulation of waveguide-enhanced Raman spectroscopy of liquids. In *Advanced Photonics 2018 (BGPP, IPR, NP, NOMA, Sensors, Networks, SPPCom, SOF) (2018), paper NpM3C.5* (p. NpM3C.5) Optical Society of America. doi:10.1364/NP.2018.NpM3C.5

-  <https://dipot.ulb.ac.be/dspace/bitstream/2013/280906/4/NP-2018-NpM3C.5.pdf>
26. **Clemmen, S.**, Farsi, A., Ramelow, S., & Gaeta, A. A. (2018). All-optically tunable buffer for single photons. *Optics Letters*, 43(9), 2138-2141. doi:10.1364/OL.43.002138
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/272822/3/ol-43-9-2138.pdf>
 27. Zhao, H., **Clemmen, S.**, Raza, A., & Baets, R. G. F. (2018). Demonstration of Stimulated Raman Scattering on a Silicon Nitride Photonic Integrated Waveguide. In *Conference on Lasers and Electro-Optics (2018)*, paper SM1B.3 (p. SM1B.3) Optical Society of America. doi:10.1364/CLEO_SI.2018.SM1B.3
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280907/4/pub_4206.pdf
 28. Raza, A., Daele, M., Wuytens, P. C., Dendooven, J., Detavernier, C., **Clemmen, S.**, & Baets, R. G. F. (2018). E-beam-lithography free plasmonic slot waveguides for on-chip Raman spectroscopy. *2018 Conference on Lasers and Electro-Optics (CLEO)* (pp. 1-2).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280908/3/pub_4045.pdf
 29. Joshi, C., Farsi, A., **Clemmen, S.**, Ramelow, S., & Gaeta, A. A. (2018). All-Optical Frequency Multiplexed Single-Photon Source. *2018 Conference on Lasers and Electro-Optics (CLEO)* (pp. 1-2).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280910/3/CLEO_QELS-2018-FM3G.2.pdf
 30. Joshi, C., Farsi, A., **Clemmen, S.**, Ramelow, S., & Gaeta, A. A. (2018). Frequency multiplexing for quasi-deterministic heralded single-photon sources. *Nature communications*, 9(1), 847. doi:10.1038/s41467-018-03254-4
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/269550/3/FrequencyMultiplexing.pdf>
 https://dipot.ulb.ac.be/dspace/bitstream/2013/269550/4/doi_253177.pdf
 31. Raza, A., **Clemmen, S.**, de Goede, M., Ali, R., Garcia-Blanco, S., Honkanen, S., Wilkinson, J., & Baets, R. G. F. (2018). The-performance of high-index-contrast photonics platforms for on-chip Raman spectroscopy. *20th European conference on integrated optics* (p. we.2.B1).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280912/3/pub_4068.pdf
 32. Zhao, H., **Clemmen, S.**, Raza, A., & Baets, R. (2018). Stimulated Raman spectroscopy of analytes evanescently probed by a silicon nitride photonic integrated waveguide. *Optics Letters*, 43(6), 1403.
 https://dipot.ulb.ac.be/dspace/bitstream/2013/283796/3/pub_4107.pdf
 33. Ramelow, S., Farsi, A., **Clemmen, S.**, Ji, X., Lipson, M., & Gaeta, A. A. (2017). Large Effective $\chi^{(2)}$ Nonlinearity on a Si₃N₄-Chip. In *2017 European Conference on Lasers and Electro-Optics and European Quantum Electronics Conference (2017)*, paper CK_6_5 (p. CK_6_5) Optical Society of America.
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280947/4/CLEO_Europe-2017-CK_6_5.pdf
 34. Alexander, K., Mohsin, M., Dave, U., Shiramin, L. A., **Clemmen, S.**, Shiramin, L. A., Neumaier, D., Kuyken, B., & Thourhout, D. V. (2017). Electrically Tunable Optical Nonlinearity of Graphene-covered SiN waveguides. In *Conference on Lasers and Electro-Optics (2017)* (p. FM2F.3) Optical Society of America. doi:10.1364/CLEO_QELS.2017.FM2F.3

-  https://dipot.ulb.ac.be/dspace/bitstream/2013/280950/4/pub_3965.pdf
35. Hermans, A., Daele, M., Kieninger, C., Dendooven, J., **Clemmen, S.**, Detavernier, C., Koos, C., & Baets, R. (2017). CMOS-compatible ALD zinc oxide coating for on-chip second-order nonlinear optical functionalities. *2017 Conference on Lasers and Electro-Optics (CLEO)* (pp. 1-2).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280952/3/pub_3930.pdf
 36. Raza, A., Peyskens, F., Wuytens, P. C., Dorpe, P., **Clemmen, S.**, & Baets, R. (2017). Detection of surface-enhanced Raman signals from a single nanoplasmonic antenna integrated on a single mode waveguide. *2017 Conference on Lasers and Electro-Optics (CLEO)* (pp. 1-2).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280951/3/pub_3928.pdf
 37. Farsi, A., Ramelow, S., **Clemmen, S.**, Ji, X., Lipson, M., & Gaeta, A. A. (2017). Large Effective $\chi^{(2)}$ Nonlinearity via Coherent Photon Conversion on a Si₃N₄ Chip. In *Conference on Lasers and Electro-Optics (2017), paper FTu3D.5* (p. FTu3D.5) Optical Society of America. doi:10.1364/CLEO_QELS.2017.FTu3D.5
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280949/4/CLEO_QELS-2017-FTu3D.5.pdf
 38. Raza, A., Wuytens, P. C., Peyskens, F., Van Dorpe, P., **Clemmen, S.**, & Baets, R. (2017). On-chip Enhanced Raman spectroscopy using metal slot waveguide. *European Conference on Integrated Optics* (p. T7.4) European Conference on Integrated Optics.
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/289577/3/On-chipEnhancedraman.pdf>
 39. Hermans, A., Van Daele, M., Dendooven, J., **Clemmen, S.**, Detavernier, C., & Baets, R. (2017). Electro-Optic Modulation in Silicon Nitride Photonic Integrated Circuits by means of ALD ZnO Overlays. *European Conference on Integrated Optics* (p. T5.3).
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/289579/4/ElectroOpticMod.pdf>
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/289579/3/ElectroOpticMod.pdf>
 40. Hermans, A., Kieninger, C., Koskinen, K., Wickberg, A., Solano, E., Dendooven, J., Kauranen, M., **Clemmen, S.**, Wegener, M., Koos, C., & Baets, R. G. F. (2017). On the determination of $\chi^{(2)}$ in thin films: a comparison of one-beam second-harmonic generation measurement methodologies. *Scientific Reports*, 7, 44581. doi:10.1038/srep44581
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280954/4/pub_3919.pdf
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280954/5/doi_264581.pdf
 41. Rahim, A., Ryckeboer, E. M., Subramanian, A. Z., **Clemmen, S.**, Kuyken, B., Dhakal, A., Raza, A., Hermans, A., Muneeb, M., Dhoore, S., Li, Y., Dave, U., Bienstman, P., Thomas, N. L., Roelkens, G., Thourhout, D. V., Helin, P., Severini, S., Rottenberg, X., & Baets, R. G. F. (2017). Expanding the Silicon Photonics Portfolio With Silicon Nitride Photonic Integrated Circuits. *Journal of lightwave technology*, 35(4), 639-649.
 https://dipot.ulb.ac.be/dspace/bitstream/2013/280953/4/pub_3813.pdf
 42. **Clemmen, S.**, Raza, A., Dhakal, A., Peyskens, F., Subramanian, A. Z., Van Dorpe, P., Wuytens, P. C., Zhao, H., Ryckeboer, E. M., Severini, S., Le Thomas, N., & Baets, R. G. (2017). Spectroscopic sensing with silicon nitride photonic integrated circuits. *Integrated Optics: Devices, Materials, and Technologies XXI*, (p. 101060).

-  https://dipot.ulb.ac.be/dspace/bitstream/2013/289590/3/pub_3934.pdf
43. Kuyken, B., Leo, F., **Clemmen, S.**, Dave, U., Zhao, H., Holzner, S., Idegushi, T., Liu, X., Safioui, J., Yan, M., Coen, S., Green, W., Gorza, S.-P., Hansch, T., Selvaraja, S. K., Massar, S., Picque, N., Osgood, R. M. J. R., Verheyen, P., Van Campenhout, J., Baets, R. G. F., & Roelkens, G. (2016). Nonlinear optical interactions in silicon waveguides. *Nanophotonics*, 5, 1-16. doi:10.1515/nanoph-2016-0001
 https://dipot.ulb.ac.be/dspace/bitstream/2013/208938/3/xj0t6J-pub_3574.pdf
 https://dipot.ulb.ac.be/dspace/bitstream/2013/208938/4/doi_192565.pdf
 44. Dhakal, A., Peyskens, F., **Clemmen, S.**, Raza, A., Wuytens, P. C., Zhao, H., Le Thomas, N., & Baets, R. (2016). Single mode waveguide platform for spontaneous and surface-enhanced on-chip Raman spectroscopy". *Interface Focus*, 6(4), 20160015.
 https://dipot.ulb.ac.be/dspace/bitstream/2013/283794/3/pub_3768.pdf
 45. **Clemmen, S.**, Farsi, A., Ramelow, S., & Gaeta, A. A. (2016). Ramsey interference with single photons. *Physical review letters*, 117, 223601.
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/283795/3/PhysRevLett.117.223601.pdf>
 46. Joshi, C., Farsi, A., Ramelow, S., **Clemmen, S.**, & Gaeta, A. A. (2016). Frequency Multiplexing for Quasi-deterministic Heralded Single-photon Sources. *Conference on Lasers and Electro-Optics 2016: OSA Technical Digest* (p. FTh1C2).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/289593/3/CLEO_QELS-2016-FTh1C.2.pdf
 47. Ryckeboer, E. M., Nie, X., Subramanian, A. Z., Martens, D., Bienstman, P., **Clemmen, S.**, Severini, S., Jansen, R., Roelkens, G., & Baets, R. G. (2016). CMOS-compatible silicon nitride spectrometers for lab-on-a-chip spectral sensing. *Silicon Photonics and Photonic Integrated Circuits V* (p. 98911).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/289595/3/pub_3782.pdf
 48. Raza, A., Peyskens, F., **Clemmen, S.**, & Baets, R. G. (2016). Towards Single Antenna On-Chip Surface Enhanced Raman Spectroscopy: Arch Dipole Antenna. *The 7th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META'16)* (pp. 1196-1197).
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/289594/3/SingleAntenna.pdf>
 49. Baets, R. G., Subramanian, A. Z., **Clemmen, S.**, Kuyken, B., Bienstman, P., Le Thomas, N., Roelkens, G., Van Thourhout, D., Helin, P., & Severini, S. (2016). Silicon Photonics: silicon nitride versus silicon-on-insulator. *Optical Fiber Communication Conference: OSA Technical Digest* (p. Th3J.1).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/289596/3/pub_3692.pdf
 50. Ramelow, S., Farsi, A., **Clemmen, S.**, Orquiza, D., Luke, K., Lipson, M., & Gaeta, A. A. (2015). Silicon-Nitride Platform for Narrowband Entangled Photon Generation. *arXiv.org*.
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/280939/4/SiN-ring-pairs.pdf>
 51. Zhao, H., Kuyken, B., Leo, F., **Clemmen, S.**, Brainis, E., Roelkens, G., & Baets, R. G. F. (2015). Visible-to-near-infrared octave spanning supercontinuum generation in a partially underetched silicon nitride waveguide. In *2015 Conference on Lasers and Electro-Optics Europe: Technical Digest* (p. SF2D.6) Washington: Optical Society of America.

-  https://dipot.ulb.ac.be/dspace/bitstream/2013/264833/3/CLEO_SI-2015-SF2D.6.pdf
52. Zhao, H., Kuyken, B., **Clemmen, S.**, Leo, F., Subramanian, A. Z., Dhakal, A., Helin, P., Severi, S., Brainis, E., Roelkens, G., & Baets, R. G. F. (2015). Visible-to-near-infrared octave spanning supercontinuum generation in a silicon nitride waveguide. *Optics Letters*, 40(10), 2177-2180. doi:10.1364/OL.40.002177
 https://dipot.ulb.ac.be/dspace/bitstream/2013/264836/3/pub_3530.pdf
 53. **Clemmen, S.**, Hermans, A., Solano, E., Dendooven, J., Koskinen, K., Kauranen, M., Brainis, E., Detavernier, C., & Baets, R. (2015). Atomic layer deposited second order nonlinear optical metamaterial for back-end integration with CMOS-compatible nanophotonic circuitry. *Optics Letters*, 40, 5371.
 https://dipot.ulb.ac.be/dspace/bitstream/2013/283792/3/pub_3649.pdf
 54. Donvankar, P., Ramelow, S., **Clemmen, S.**, & Gaeta, A. A. (2015). Continuous generation of Rubidium vapor in hollow-core photonic band-gap fibers. *Optics Letters*, 40, 5379.
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/283793/3/12.pdf>
 55. Farsi, A., Ramelow, S., **Clemmen, S.**, & Gaeta, A. A. (2015). Low-Noise Quantum Frequency Translation of Single Photons. *Conference on Lasers and Electro-Optics 2015: OSA Technical Digest (online)* (p. fm3a.4).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/289582/3/CLEO_QELS-2015-FM3A.4.pdf
 56. Zhao, H., **Clemmen, S.**, & Baets, R. G. (2015). Multiplex coherent anti-stokes Raman spectroscopy on a CMOS compatible platform. *Proceedings of the 20th Annual Symposium of the IEEE Photonics Society Benelux Chapter* (pp. 181-184).
 57. **Clemmen, S.**, Zhao, H., Peyskens, F., Dhakal, A., Wuytens, P. C., Subramanian, A. Z., Le Thomas, N., & Baets, R. G. (2015). Coherent anti-Stokes Raman spectroscopy on chip. *28th IEEE Photonics Conference* (p. WJ2.3).
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/289586/3/Coherentanti-Stokes.pdf>
 58. Farsi, A., **Clemmen, S.**, Ramelow, S., & Gaeta, A. A. (2015). Ramsey Interferometry for Manipulation of Single Photons. *Conference on Lasers and Electro-Optics 2015: OSA Technical Digest* (p. FM3A6).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/289591/3/CLEO_QELS-2015-FM3A.6.pdf
 59. Ramelow, S., Farsi, A., **Clemmen, S.**, Luke, K., Lipson, M., & Gaeta, A. A. (2015). Monolithic Source of Tunable Narrowband Photons for Future Quantum Networks. *Conference on Lasers and Electro-Optics 2015: OSA Technical Digest (online)* (p. FM2A.7).
 https://dipot.ulb.ac.be/dspace/bitstream/2013/289592/3/CLEO_QELS-2015-FM2A.7.pdf
 60. Fridman, M., Okawachi, Y., **Clemmen, S.**, Menard, M., Lipson, M., & Gaeta, A. A. (2015). Waveguide-based single-shot temporal cross-correlator. *Journal of optics*, 17, 035501.
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/283799/3/Waveguidecross-cor.pdf>
 61. Dhakal, A., Raza, A., Peyskens, F., Subramanian, A. Z., **Clemmen, S.**, Le Thomas, N., & Baets, R. (2015). Efficiency of evanescent excitation and collection of spontaneous Raman scattering near high index contrast channel waveguides. *Optics express*, 23, 27391.

- https://dipot.ulb.ac.be/dspace/bitstream/2013/283800/3/pub_3630.pdf
62. Donvalkar, P., Venkataraman, V., **Clemmen, S.**, Saha, K., & Gaeta, A. A. (2014). Frequency translation via four-wave mixing Bragg scattering in Rb filled photonic bandgap fibers. *Optics Letters*, 39, 1557.
<https://dipot.ulb.ac.be/dspace/bitstream/2013/283797/3/13.pdf>
 63. **Clemmen, S.**, Farsi, A., & Gaeta, A. A. (2013). Continuous delay of single photons. in *The Rochester Conferences on Coherence and Quantum Optics and the Quantum Information and Measurement meeting: OSA Technical Digest (online)* (p. M6.62).
<https://dipot.ulb.ac.be/dspace/bitstream/2013/289584/3/CQO-2013-M6.62.pdf>
 64. Olislager, L., Safioui, J., **Clemmen, S.**, Phan Huy, K., Bogaerts, W., Baets, R. G. F., Emplit, P., & Massar, S. (2013). Silicon-on-insulator integrated source of polarization-entangled photons. *Optics Letters*, 38(11), 1960-1962. doi:10.1364/OL.38.001960
https://dipot.ulb.ac.be/dspace/bitstream/2013/163373/3/OL_38_11_1960_2013_Olislager.pdf
 65. **Clemmen, S.**, Farsi, A., Ramelow, S., & Gaeta, A. A. (2013). Ramsey interferometry with photons. *Conference on Lasers and Electro-Optics 2014: OSA Technical Digest* (p. FTh5A.2).
<https://dipot.ulb.ac.be/dspace/bitstream/2013/289585/3/14.pdf>
 66. **Clemmen, S.**, Perret, A., Safioui, J., Bogaerts, W., Baets, R. G. F., Gorza, S.-P., Emplit, P., & Massar, S. (2012). Low-power inelastic light scattering at small detunings in silicon wire waveguides at telecom wavelengths. *Journal of the Optical Society of America. B, Optical physics*, 29, 1977. doi:10.1364/JOSAB.29.001977
https://dipot.ulb.ac.be/dspace/bitstream/2013/132007/3/JOSA-B_29.08_1977_2012_Clemmen.pdf
 67. **Clemmen, S.**, Van Laere, R., Farsi, A., Levy, J. S., Lipson, M., & Gaeta, A. A. (2012). Towards frequency-coded q-dit manipulation using coherent four-wave mixing. *Conference on Lasers and Electro-Optics 2012: OSA Technical Digest* (p. QM2H.6).
<https://dipot.ulb.ac.be/dspace/bitstream/2013/289580/3/QELS-2012-QM2H.6.pdf>
 68. Fridman, M., Okawachi, Y., **Clemmen, S.**, Menard, M., Lipson, M., & Gaeta, A. A. (2012). Optical Cross Correlator in a Silicon Waveguide. *Conference on Lasers and Electro-Optics 2012: OSA Technical Digest* (p. CF2L.2).
<https://dipot.ulb.ac.be/dspace/bitstream/2013/289581/3/Waveguidecross-cor.pdf>
 69. **Clemmen, S.**, Perret, A., Safioui, J., Bogaerts, W., Baets, R. G. F., Gorza, S.-P., Emplit, P., & Massar, S. (2012). Low intensity inelastic photon scattering in silicon wire waveguide below the bandgap. In *CLEO: applications and technology*. (OSA technical digest). Washington: Optical Society of America.
https://dipot.ulb.ac.be/dspace/bitstream/2013/132004/3/pub_3024.pdf
 70. Baets, R. G. F., Kuyken, B., Liu, X., **Clemmen, S.**, Selvaraja, S. K., Bogaerts, W., Van Thourhout, D., Ji, H., Hu, H., Pu, M., Galili, M., Jeppesen, P., Oxenløwe, L. K., Osgood, R. M. J. R., Emplit, P., Massar, S., Vlasov, Y. Y., Green, W. M. J., & Roelkens, G. (2012). Nonlinear optical functions in crystalline and amorphous silicon-on-insulator nanowires. In *Optical Fiber Communication Conference and Exposition (OFC/NFOEC), 2012 and*

the National Fiber Optic Engineers Conference (p. 2J7). (Optics InfoBase Conference Papers). Washington ; Piscataway: Optical Society of America ; Institute of Electrical and Electronics Engineers.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/132561/3/3623Ed01.pdf>

71. **Clemmen, S.**, Emplit, P., Massar, S., Phan Huy, K., Bogaerts, W., & Baets, R. G. (2012). Integrated quantum optics using the Silicon on Insulator (SOI) platform. *Frontiers in Optics 2012/Laser Science XXVIII: OSA Technical Digest (online)* (p. FTu4D.1).
<https://dipot.ulb.ac.be/dspace/bitstream/2013/289583/3/FiO-2012-FTu4D.1.pdf>
72. Kuyken, B., Ji, H., **Clemmen, S.**, Selvaraja, S. K., Hu, H., Pu, M., Galili, M., Jeppesen, P., Morthier, G., Massar, S., Oxenlowe, L., Roelkens, G., & Baets, R. G. F. (2011). Nonlinear properties of and nonlinear processing in hydrogenated amorphous silicon waveguides. *Optics express*, 19, B146. doi:10.1364/OE.19.00B146
https://dipot.ulb.ac.be/dspace/bitstream/2013/132009/3/pub_3574.pdf
73. Helt, L. G., Liscidini, M., Farsi, A., **Clemmen, S.**, Venkataraman, V., Levy, J. S., Lipson, M., Gaeta, A. A., & Sipe, J. (2011). Quantum Optics of Spontaneous Four Wave Mixing in a Silicon Nitride Microring Resonator. *Conference on Lasers and Electro-Optics 2011: OSA Technical Digest (CD)* (p. QWA4).
<https://dipot.ulb.ac.be/dspace/bitstream/2013/289588/3/QELS-2011-QWA4.pdf>
74. Kuyken, B., **Clemmen, S.**, Selvaraja, S. K., Bogaerts, W., Van Thourhout, D., Emplit, P., Massar, S., Roelkens, G., & Baets, R. G. F. (2011). On-chip parametric amplification with 26.5 dB gain at telecommunication wavelengths using CMOS-compatible hydrogenated amorphous silicon waveguides. *Optics Letters*, 36, 552-554. doi:10.1364/OL.36.000552
<https://dipot.ulb.ac.be/dspace/bitstream/2013/95648/1/2011KuykenClemmenOL-ParamAmpl-aSi.pdf>
75. Kuyken, B., Liu, X., **Clemmen, S.**, Selvaraja, S. K., Van Thourhout, D., Osgood, R. M. J. R., Emplit, P., Massar, S., Vlasov, Y. Y., Green, W. M. J., Roelkens, G., & Baets, R. G. F. (2011). Four-Wave-Mixing Gain and All-optical Signal Processing in Silicon Nanowires. In *Proceedings of the 37th European Conference on Optical Communication*. (OSA Technical Digest). Optical Society of America.
https://dipot.ulb.ac.be/dspace/bitstream/2013/132560/3/C74_ECOC2011_Optical_Comm_European_Conf_Exhibition.pdf
https://dipot.ulb.ac.be/dspace/bitstream/2013/132560/4/C74_ECOC_2011_ECOCFourWaveMixing.pptx
76. **Clemmen, S.**, Farsi, A., Levy, J. S., Helt, L. G., Liscidini, M., Sipe, J., Lipson, M., & Gaeta, A. A. (2011). On-chip spectrally-bright photon-pair source from SiN ring micro-cavity. *Frontiers in Optics 2011/Laser Science XXVII: OSA Technical Digest* (p. FThE5).
<https://dipot.ulb.ac.be/dspace/bitstream/2013/289589/3/FiO-2011-FThE5.pdf>
77. **Clemmen, S.** (2010). *Optique quantique dans des structures guidantes en silicium: caractérisation non linéaire, génération et manipulation de paires de photons* (Unpublished doctoral dissertation). Université libre de Bruxelles, Faculté des Sciences – Physique, Bruxelles.
<https://dipot.ulb.ac.be/dspace/bitstream/2013/210083/4/be027883-24a7-4322-9013-9c266fb37b05.txt>

-  <https://dipot.ulb.ac.be/dspace/bitstream/2013/210083/1/58520133-765f-46b5-aca8-99eec59daafb.txt>
78. **Clemmen, S.**, Massar, S., Phan Huy, K., Bogaerts, W., Baets, R. G. F., & Emplit, P. (2010). Erratum: Continuous wave photon pair generation in silicon-on-insulator waveguides and ring resonators (*Optics Express* (2009) 17: 16558-16570). *Optics express*, 18(13), 14107. doi:10.1364/OE.18.014107
 https://dipot.ulb.ac.be/dspace/bitstream/2013/204812/3/OE_18_13_14107_Clemmen_Erratum_OE_17.pdf
 79. **Clemmen, S.**, Perret, A., Selvaraja, S. K., Bogaerts, W., Van Thourhout, D., Baets, R. G. F., Emplit, P., & Massar, S. (2010). Generation of correlated photons in hydrogenated amorphous-silicon waveguides. *Optics Letters*, 35, 3483-3485. doi:10.1364/OL.35.003483
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/95646/1/2010-Clemmen-PhotonpairsinA-Si-Hwaveguides.pdf>
 80. Kuyken, B., **Clemmen, S.**, Selvaraja, S. K., Bogaerts, W., Massar, S., Baets, R. G. F., & Roelkens, G. (2010). Self Phase Modulation in Highly Nonlinear Hydrogenated Amorphous Silicon. *23rd Annual Meeting of the IEEE Photonics Society* (November 2010: Denver USA)
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/95690/1/2010-Kuyken-ParamAmpliaSi-H.pdf>
 81. **Clemmen, S.**, Kuyken, B., Selvaraja, S. K., Bogaerts, W., Massar, S., Baets, R. G. F., & Roelkens, G. (2010). Unprecedented parametric gain from a CMOS compatible silicon photonic wire. *23rd Annual Meeting of the IEEE Photonics Society* (November 2010: Denver USA)
 https://dipot.ulb.ac.be/dspace/bitstream/2013/95692/1/2010IEEEPhotonicsClemmentetal_postdeadline.pdf
 82. **Clemmen, S.**, Phan Huy, K., Bogaerts, W., Baets, R. G. F., Emplit, P., & Massar, S. (2009). Continuous wave photon pair generation in silicon-on-insulator waveguides and ring resonators. *Optics express*, 17(19), 16558-16570. doi:10.1364/OE.17.016558
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/95642/1/2009ClemmenSOIpairsI-OpticsExpress.pdf>
 83. **Clemmen, S.**, Phan Huy, K., Bogaerts, W., Baets, R. G. F., Emplit, P., & Massar, S. (2009). Towards an integrated narrowband source for quantum information : Photon pair generation in a silicon racetrack resonator. In *Proceedings of OSA Optics & Photonics Congress and Tabletop Exhibits*. (OSA Technical Digest). Washington: Optical Society of America.
 https://dipot.ulb.ac.be/dspace/bitstream/2013/95657/3/C65_IPNRA_NLO_SL_2009_Paper_IME1.pdf
 84. **Clemmen, S.**, Phan Huy, K., Bogaerts, W., Baets, R. G. F., Emplit, P., & Massar, S. (2009). Integrated photon pair source for SOI-based quantum optics. In *CLEO Europe-EQEC 2009 : European Conference on Lasers and Electro-Optics 2009, and the European Quantum Electronics Conference*. (Optics InfoBase Conference Papers). Piscataway: Institute of Electrical and Electronics Engineers.

-  https://dipot.ulb.ac.be/dspace/bitstream/2013/95656/3/C63_CLEO_Europe_2009_Integrated_photon.pdf
85. **Clemmen, S.**, Phan Huy, K., Bogaerts, W., Baets, R., Emplit, P., & Massar, S. (2009). Towards an integrated narrowband source for quantum information: Photon pair generation in a silicon racetrack resonator. *Optics InfoBase Conference Papers*. doi:10.1364/ipnra.2009.ime1
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/311475/3/IPNRA-2009-IME1.pdf>
 86. **Clemmen, S.**, Phan Huy, K., Bogaerts, W., Baets, R. G. F., Emplit, P., & Massar, S. (2008). Photon pair generation in a continuous regime in nanophotonic silicon waveguide. *Proceedings of the 2008 IEEE/LEOS Symposium Benelux Chapter* (pp. 67-70) (December 27-28, 2008: University of Twente, Twente, The Netherlands).
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/95655/1/2008IEEELEOSBenelux-SClemmen.pdf>
 87. Brainis, E., **Clemmen, S.**, & Massar, S. (2007). Spontaneous growth of Raman Stokes and anti-Stokes waves in fibers. *Optics Letters*, 32(19), 2819-2821. doi:10.1364/OL.32.002819
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/38020/1/Brainis2007OL.pdf>
 https://dipot.ulb.ac.be/dspace/bitstream/2013/38020/2/BrainisOL270807_2col_.pdf
 88. **Clemmen, S.**, Brainis, E., & Massar, S. (2007). Quantum theory of degenerate four-wave mixing and Raman scattering in fibers. *Proceedings of the 12th annual symposium of the IEEE/LEOS Benelux Chapter* (pp. 55-58) 12th annual symposium of the IEEE/LEOS Benelux Chapter(17-18 décembre 2007: Brussels, Belgium).
 <https://dipot.ulb.ac.be/dspace/bitstream/2013/67616/1/ClemmenLEOSBenelux2007.pdf>