Research Outputs of Rachel Grange

The list of publication is limited to the last five years. For a comprehensive publication list you may look the group website: https://ong.ethz.ch/publications-and-awards.html

1. Peer-reviewed Publications in Scientific Journals

[1] Pohl, David, Messner, Andreas, Kaufmann, Fabian, Reig Escalé, Marc, Holzer, Jannis, Leuthold, Juerg and Rachel Grange. 100-GBd Waveguide Bragg Grating Modulator in Thin-Film Lithium Niobate. IEEE Photonics Technology Letters, vol. 33, no. 2, 2021, pp. 85-88. DOI: 10.1109/lpt.2020.3044648

[2] Karvounis, Artemios, Timpu, Flavia, Vogler-Neuling, Viola V., Savo, Romolo and Rachel Grange. Barium Titanate Nanostructures and Thin Films for Photonics. Advanced Optical Materials, vol. 8, no. 24, 2020, pp. 2001249. DOI: 10.1002/adom.202001249

[3] Reig Escalé, Marc, Kaufmann, Fabian, Jiang, Hehai, Pohl, David and Rachel Grange. Generation of 280 THz-spanning near-ultraviolet light in lithium niobate-on-insulator waveguides with sub-100 pJ pulses. APL Photonics, vol. 5, no. 12, 2020, pp. 121301. DOI: 10.1063/5.0028776

[4] Savo, R., Morandi, A., Müller, J.S., Kaufmann F., Timpu F., Reig Escalé M., Zanini M., Isa L., and Grange R., Broadband Mie driven random quasi-phase-matching. Nat. Photonics (2020). https://doi.org/10.1038/s41566-020-00701-x

[5] Karvounis, A., Vogler-Neuling, V., Richter, F. U., Dénervaud, E., Timofeeva, M. and Grange R. Electro-Optic Metasurfaces Based on Barium Titanate Nanoparticle Films. Advanced Optical Materials, 2020, pp. 2000623. https://doi.org/10.1002/adom.202000623.

[6] Saerens, G., Tang, I., Petrov, M. I., Frizyuk, K., Renaut, C., Timpu, F., Reig Escalé, M., Shtrom, I., Bouravleuv, A., Cirlin, G., Grange, R. and Timofeeva M. Engineering of the Second-Harmonic Emission Directionality with III–V Semiconductor Rod Nanoantennas. Laser & Photonics Reviews, vol. 14, no. 9, 2020, pp. 2000028. https://doi.org/10.1002/lpor.202000028

[7] Fedorov, Vladimir V., Bolshakov, Alexey, Sergaeva, Olga, Neplokh, Vladimir, Markina, Daria, Bruyere, Stephanie, Saerens, Grégoire, Petrov, Mihail I., Grange, Rachel, Timofeeva, Maria, Makarov, Sergey V. and Ivan S. Mukhin. Gallium Phosphide Nanowires in a Free-Standing, Flexible, and Semitransparent Membrane for Large-Scale Infrared-to-Visible Light Conversion. ACS Nano, vol. 14, no. 8, 2020, pp. 10624-10632. https://doi.org/10.1021/acsnano.0c04872

[8] Vogler-Neuling, V. V.; Savo, R.; Pohl, D.; Hendricks, N. R.; Lang, L.; Timofeeva, M.; Schneider, B.; Richter, F. U.; Timpu, F.; Monneret, S.; Starsich, F.; **Grange, R**. Solution-Processed Barium Titanate Nonlinear Woodpile Photonic Structures with Large Surface Areas. physica status solidi (b) 2020, 257 (5), 2070024. https://doi.org/10.1002/pssb.202070024.

[9] Reshef, O.; Aharonovich, I.; Armani, A. M.; Gigan, S.; Grange, R.; Kats, M. A.; Sapienza, R. How to Organize an Online Conference. Nature Reviews Materials 2020, 1–4. https://doi.org/10.1038/s41578-020-0194-0.

[10] Xu, L.; Saerens, G.; Timofeeva, M.; Smirnova, D. A.; Volkovskaya, I.; Lysevych, M.; Camacho-Morales, R.; Cai, M.; Zangeneh Kamali, K.; Huang, L.; Karouta, F.; Tan, H. H.; Jagadish, C.; Miroshnichenko, A. E.; Grange, R.; Neshev, D. N.; Rahmani, M. Forward and Backward Switching of Nonlinear Unidirectional Emission from GaAs Nanoantennas. ACS Nano 2019. https://doi.org/10.1021/acsnano.9b07117.

[11] Timpu, F.; Sendra, J.; Renaut, C.; Lang, L.; Timofeeva, M.; Buscaglia, M. T.; Buscaglia, V.; Grange, R. Lithium Niobate Nanocubes as Linear and Nonlinear Ultraviolet Mie Resonators. *ACS Photonics* **2019**, *6* (2), 545–552. https://doi.org/10.1021/acsphotonics.8b01594.

[12] Pohl, D.; Reig Escalé, M.; Madi, M.; Kaufmann, F.; Brotzer, P.; Sergeyev, A.; Guldimann, B.; Giaccari, P.; Alberti, E.; Meier, U.; R. Grange An Integrated Broadband Spectrometer on Thin-Film Lithium Niobate. *Nat. Photonics*, 14,24–29 **2019**. https://doi.org/10.1038/s41566-019-0529-9.

[13] Renaut, C.; Lang, L.; Frizyuk, K.; Timofeeva, M.; Komissarenko, F. E.; Mukhin, I. S.; Smirnova, D.; Timpu, F.; Petrov, M.; Kivshar, Y.; **Grange, R**. Reshaping the Second-Order Polar Response of Hybrid Metal-Dielectric Nanodimers. *Nano Lett.* **2019**, *19* (2), 877–884. https://doi.org/10.1021/acs.nanolett.8b04089.

[14] Rendón-Barraza, C.; Timpu, F.; Grange, R.; Brasselet, S. Crystalline Heterogeneity in Single Ferroelectric Nanocrystals Revealed by Polarized Nonlinear Microscopy. *Sci. Rep.* **2019**, *9* (1). https://doi.org/10.1038/s41598-018-38229-4.

[15] Saerens, G.; Lang, L.; Renaut, C.; Timpu, F.; Vogler-Neuling, V.; Durand, C.; Tchernycheva, M.; Shtrom, I.; Bouravleuv, A.; Grange, R.; Timofeeva, M. Image-Based Autofocusing System for Nonlinear Optical Microscopy with Broad Spectral Tuning. *Opt. Express* **2019**, *27* (14), 19915. https://doi.org/10.1364/oe.27.019915.

[16] Timpu, F.; Reig Escalé, M.; Timofeeva, M.; Strkalj, N.; Trassin, M.; Fiebig, M.; **Grange, R**. Enhanced Nonlinear Yield from Barium Titanate Metasurface Down to the Near Ultraviolet. *Adv. Opt. Mater.* 7, 22, **2019**, 1900936. https://doi.org/10.1002/adom.201900936.

[17] Timofeeva, M.; Lang, L.; Timpu, F.; Renaut, C.; Bouravleuv, A.; Shtrom, I.; Cirlin, G.; Grange, R. Anapoles in Free-Standing III-V Nanodisks Enhancing Second-Harmonic Generation. *Nano Lett.* **2018**, *18* (6), 3695–3702. https://doi.org/10.1021/acs.nanolett.8b00830.

[18] Escalé, M. R.; Pohl, D.; Sergeyev, A.; Grange, R. Extreme Electro-Optic Tuning of Bragg Mirrors Integrated in Lithium Niobate Nanowaveguides. *Opt. Lett.* **2018**, *43* (7), 1515. https://doi.org/10.1364/ol.43.001515.

[19] Fernández-Rodríguez, M. Á.; Elnathan, R.; Ditcovski, R.; Grillo, F.; Conley, G. M.; Timpu, F.; Rauh, A.; Geisel, K.; Ellenbogen, T.; Grange, R.; Scheffold, F.; Karg, M.;Richtering, W.; Voelcker, N.; Isa, L. Tunable 2D Binary Colloidal Alloys for Soft Nanotemplating. Nanoscale **2018**, 10 (47), 22189–22195. https://doi.org/10.1039/c8nr07059h.

[20] Sergeyev, A.; Reig Escalé, M.; Grange, R. Generation and Tunable Enhancement of a Sum-Frequency Signal in Lithium Niobate Nanowires. *J. Phys. D. Appl. Phys.* **2017**, *50* (4), 044002. https://doi.org/10.1088/1361-6463/50/4/044002.

[21] Starsich, F. H. L.; Gschwend, P.; Sergeyev, A.; Grange, R.; Pratsinis, S. E. Deep Tissue Imaging with Highly Fluorescent Near-Infrared Nanocrystals after Systematic Host Screening. *Chem. Mater.* **2017**, *29* (19), 8158–8166. https://doi.org/10.1021/acs.chemmater.7b02170.

[22] Reig Escalé, M.; Sergeyev, A.; Geiss, R.; Grange, R. Shaping the Light Distribution with Facet Designs in Lithium Niobate Nanowaveguides. *Appl. Phys. Lett.* **2017**, *111* (8), 083101. https://doi.org/10.1063/1.4999157.

[23] Timpu, F.; Hendricks, N. R.; Petrov, M.; Ni, S.; Renaut, C.; Wolf, H.; Isa, L.; Kivshar, Y.; **Grange, R**. Enhanced Second-Harmonic Generation from Sequential Capillarity-Assisted Particle Assembly of Hybrid Nanodimers. *Nano Lett.* **2017**, *17* (9), 5381–5388. https://doi.org/10.1021/acs.nanolett.7b01940.

[24] Timpu, F.; Sergeyev, A.; Hendricks, N. R.; Grange, R. Second-Harmonic Enhancement with Mie Resonances in Perovskite Nanoparticles. *ACS Photonics* **2017**, *4* (1), 76–84. https://doi.org/10.1021/acsphotonics.6b00570.

[25] Escalé, M. R.; Sergeyev, A.; Geiss, R.; Grange, R. Nonlinear Mode Switching in Lithium Niobate Nanowaveguides to Control Light Directionality. *Opt. Express* **2017**, *25* (4), 3013. https://doi.org/10.1364/OE.25.003013.

[26] Timofeeva, M.; Bouravleuv, A.; Cirlin, G.; Shtrom, I.; Soshnikov, I.; Reig Escalé, M.; Sergeyev, A.; Grange, R. Polar Second-Harmonic Imaging to Resolve Pure and Mixed Crystal Phases along GaAs Nanowires. *Nano Lett.* **2016**, *16* (10), 6290–6297. https://doi.org/10.1021/acs.nanolett.6b02592.

[27] Geiss, R.; Sergeyev, A.; Hartung, H.; Solntsev, A. S.; Sukhorukov, A. A.; Grange, R.; Schrempel, F.; Kley, E.-B.; Tünnermann, A.; Pertsch, T. Fabrication of Free-Standing Lithium Niobate Nanowaveguides down to 50 Nm in Width. *Nanotechnology* **2016**, *27* (6), 065301. https://doi.org/10.1088/0957-4484/27/6/065301.

2. Peer-reviewed book chapters

- Sergeyev, A.; Grange, R. Enhancing the Second-Harmonic Generation in Lithium Niobate Nanowaveguides. In Light Robotics – Structure-mediated Nanobiophotonics, 1st Ed; Glückstad, J.; Palima, D., Eds.; 2016. (Book chapter)
- **R. Grange**, Nonlinear Optical Enhancement with Plasmonic Core-Shell Nanowires, in a volume entitled 'Active Plasmonic Nanomaterials' in Pan Stanford Publishing, publication June 2015. (Book chapter)

3. Peer-reviewed conference papers

Invited, Keynote and Plenary Talks of Rachel Grange

2021

1. Congrès de la Société Française d'Optique (SFO), OPTIQUE Dijon 2020, Dijon 7-10 July (**Keynote**)

2020

2. R. Grange, Quadratic Nanomaterials for Nonlinear Integrated Photonic Devices, 7th SFB/TRR 142 Workshop, "Tailored Nonlinear Photonics" as Video-Online Workshop, 28-30 September 2020
3. Rachel Grange, second annual workshop of the GdR Complexe, https://complexe2020.sciencesconf.org/, 30.11-2.12.2020.
4. Lithium Niobate and Other Quadratic Materials for Nanophotonic Devices, 14th Pacific Rim Conference on Lasers and Electro-Optics (CLEO Pac Rim 2020), Sydney 2-6 Aug. (**Invited** talk)
5. Grange, Rachel. Quadratic nanomaterials for nonlinear active metasurfaces. Metamaterials XII Ed. MacDonald, Kevin F., Staude, Isabelle and Zayats, Anatoly V.. Bellingham, WA: SPIE, 2020. pp. 1134415.

2019

6. Beyond Metals and Semiconductors: Nano-Oxides for Nonlinear Photonic Devices. CLEO US, San Jose USA 2019, 5–10.05 (**Invited** talk)
7. Beyond metals and semiconductors: nano-oxides for nonlinear photonic devices, PR'19, Photorefractive Photonics and beyond, June 18-21, Gerardmer, France. (**Invited** talk)

2018

8. Beyond metals and semiconductors: nano-oxides for nonlinear photonic devices 10èmes Journées Scientifiques du C'Nano-PACA, Porquerolles 2018, France, 09.10-12 (**Keynote** talk).
9. Engineering Nano-Oxides to Enhance Nonlinear Optical Signal for Integrated Devices. SPIE Photonics Europe 2018, Strasbourg, France 2018, 22–26.04 (invited talk).
10. How to Enhance Nonlinear Optical Signals of Metal-Oxide Nanomaterials ? New Frontiers in Plasmonics and Nano-Photonics (NANOPLASM 2018), Cetraro, Italy, on 10–15 June, 2018 2018, 10–15.06. (Invited talk)
11. CHi2 Materials at the Nanoscale. Foundations of Nonlinear Optics (FoNLO) 2018, Skidmore College in NY, U.S.A. 2018, 19–21.06. (Invited talk)

2017

12. Enhancing Nonlinear Optical Signal of Perovskite Nanomaterials. 6th International Topical Meeting on Nanophotonics and Metamaterials, Nanometa, Seefeld, Austria 2017, 01.04-07, Invited Talk.
13. Beyond Plasmonics: Oxide and Semiconductor Nanomaterials for Enhancing Nonlinear Optical Signals. Complex Nanophotonics Science Camp, Cumberland Lodge, UK, 2017, 07.25-28. Invited talk 2017, 07.25-28, Invited Talk.

2016

14. Mie Resonances Enhancing Second-Harmonic Generation in Single All-Dielectric BaTiO3 Nanoparticles. Workshop on Nonlinear Plasmonics and its Applications, Cost Action Nanospectroscopy, Rom, Italy 2016, 03.21, Invited Talk.
15. Enhancing Nonlinear Optical Signal in Noncentrosymmetric Nanomaterials. SPIE Photonics Europe , Brussels 2016, 04.03-06, Invited.
16. Enhancing Nonlinear Optical Signal in Perovskite Nanostructures. Days on Diffraction, St. Petersburg, Russia 2016, 07.01, Invited.

Contributed or Invited Talks from the members of my team

2020

1. Karvounis, Artemios, Vogler-Neuling, Viola V., Richter, Felix and Rachel Grange. Broadband electro-optic modulators enabled via BaTiO3 meta-coatings. Photonics Online Meetup (POM 2020) (virtual), January 13-14, 2020.
2. Kaufmann, Fabian, Pohl, David, Reig Escalé, Marc, Maeder, Andreas and Rachel Grange. Integrated microring-resonators and waveguide Bragg cavities in lithium niobate-on-insulator. Photonics Online Meetup (POM 2020) (virtual), January 13-14, 2020.
3. Saerens, Grégoire, Tang, Iek, Bloch, Esther, Frizyuk, Kristina, Reig Escalé, Marc, Renaut, Claude, Timpu, Flavia, Vogler-Neuling, Viola V., Shtrom, Igor, Semenova, Ekaterina, Lebedkina, E., Sadrieva, Zarina, Bouravleuv, A., Cirlin, George, Petrov, M., Grange, Rachel and Maria Timofeeva. III-V nanowires as building blocks for nonlinear photonics. Photonics Online Meetup (POM 2020) (virtual), January 13-14, 2020.
4. Karvounis, Artemios, Vogler-Neuling, Viola V., Richter, Felix and Rachel Grange. Electro-optic metamaterial switch based on BaTiO3 nanoparticles. Conference on Lasers and Electro-Optics. Washington, DC: Optical Society of America, 2020. pp. FM2R.6.DOI: 10.1364/CLEO_QELS.2020.FM2R.6
5. Pohl, David, Kaufmann, Fabian, Reig Escalé, Marc, Holzer, Jannis and Rachel Grange. Tunable Bragg Grating Filters and Resonators in Lithium Niobate-on-Insulator Waveguides. Conference on Lasers and Electro-Optics. Washington, DC: Optical Society of America, 2020. pp. STu4J.5.DOI: 10.1364/CLEO_SI.2020.STu4J.5
6. Richter, Felix, Vogler-Neuling, Viola V., Timpu, Flavia, Karvounis, Artemios, Pohl, David, Weigand, Helena, Reig Escalé, Marc and Rachel Grange. Electrically Tunable Optical Metasurfaces with Barium Titanate Nanoparticles. Conference on Lasers and Electro-Optics. Washington, DC: Optical Society of America, 2020. pp. FM3B.7. DOI: 10.1364/CLEO_QELS.2020.FM3B.7
7. Saerens, Grégoire, Tang, Iek, Bloch, Esther, Frizyuk, Kristina, Reig Escalé, Marc, Renaut, Claude, Timpu, Flavia, Vogler-Neuling, Viola V., Shtrom, Igor, Semenova, Elizaveta, Lebedkina, Elizaveta,

Bouravleuv, Alexei, Sadrieva, Zarina, Cirlin, George, Petrov, Mihail, Grange, Rachel and Maria Timofeeva. Semiconductor III-V Nanowires as Building Blocks for Flexible Nonlinear Photonic Components. Conference on Lasers and Electro-Optics. Washington, DC: Optical Society of America, 2020. pp. FTu3Q.3. DOI: 10.1364/CLEO_QELS.2020.FTu3Q.3

2019

8. Savo, Romolo, Morandi, Andrea, Kaufmann, Fabian, Timpu, Flavia, Reig Escalé, Marc, Zanini, Michele, Isa, Lucio and Rachel Grange. Second harmonic generation in complex assemblies of oxide nanoparticle. 4th EOS Topical Meeting on Optics at the NanoScale (ONS 2019), September 9-11, 2019, Anacapri, Italy.
9. Savo, Romolo, Morandi, Andrea, Müller, Jolanda, Kaufmann, Fabian, Timpu, Flavia, Reig Escalé, Marc, Zanini, Michele, Isa, Lucio and Rachel Grange. Random Quasi-Phase Matching in Chi2 disordered optically resonant micro-structures. Nanophotonics: Foundations and Applications, September 1-6, 2019, Ascona, Switzerland.
10. Savo, Romolo and Rachel Grange. Second harmonic generation in complex assemblies of oxide nanoparticle. Foundations of Nonlinear Optics (FoNLO 2019), August 6-8, 2019, Dayton, OH, USA.
11. Savo, Romolo, Morandi, Andrea, Müller, Jolanda, Kaufmann, Fabian, Timpu, Flavia, Reig Escalé, Marc, Zanini, Michele, Isa, Lucio and Rachel Grange. Nonlinear light generation in disordered micro-balls. Complex Nanophotonics Science Camp, Cumberland Lodge, Windsor Great Park, UK, 11th-14th August 2019. Book of Abstracts Ed. Gigan, Sylvain, Grange, Rachel, Muskens, Otto, Sapienza, Riccardo and Vignolini, Silvia, 2019. pp. 72-73.
12. Bloch, Esther, Sadrieva, Zarina, Timofeeva, Maria, Grange, Rachel and Mihail Petrov. Tunable all-dielectric metamaterial for light control and efficient second harmonicgeneration. 4th Conference on Nanophotonics and Metamaterials (Metanano 2019), July 15-19, 2019, St. Petersburg, Russia.
13. Pohl, David, Reig Escalé, Marc, Madi, Mohammad, Brotzer, Peter, Kaufmann, Fabian, Sergeyev, Anton, Giaccari, Philippe, Meier, Urs, Alberti, Edoardo and Rachel Grange. Integrated Waveguide Fourier Transform Spectrometer on Thin-Film Lithium Niobate. 2019 Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC). Piscataway, NJ: IEEE, 2019. pp. 8871874. DOI: 10.1109/CLEOE-EQEC.2019.8871874
14. Savo, Romolo, Morandi, Andrea, Kaufmann, Fabian, Timpu, Flavia, Reig Escalé, Marc, Zanini, Michele, Isa, Lucio and Rachel Grange. Nonlinear light generation in disordered micro-balls. 7th Workshop on Plasmonics and its Applications (PLASMONICA 2019), June 19-21, 2019, Napoli, Italy.
15. Savo, Romolo, Morandi, Andrea, Kaufmann, Fabian, Timpu, Flavia, Reig Escalé, Marc, Zanini, Michele, Isa, Lucio and Rachel Grange. Nonlinear light generation in disordered micro-balls. GdR Complexe annual workshop (2019), April 1-2, 2019, Paris, France.
16. Reig Escalé, Marc, Pohl, David, Madi, Mohammad, Brotzer, Peter, Kaufmann, Fabian, Sergeyev, Anton, Meier, Urs, Alberti, Edoardo and Rachel Grange. Integrated Electro-Optic Spectrometers on Thin-Film Lithium Niobate. Proceedings of the 2019 Conference on Lasers and Electro-Optics (CLEO). Washington, DC: Optical Society of America, 2019. pp. SF2J.4. DOI: 10.1364/CLEO_SI.2019.SF2J.4
17. Renaut, Claude, Lang, Lukas, Frizyuk, Kristina, Timofeeva, Maria, Petrov, Mihail, Komissarenko, Filipp E., Mukhin, Ivan S., Timpu, Flavia, Kivshar, Yuri and Rachel Grange. Metal-Dielectric Nanodimers with Hybridized Resonances Probed by Second-Harmonic Polarization. Conference on Lasers and Electro-Optics. Washington, DC: Optical Society of America, 2019. pp. FM2C.6.DOI: 10.1364/cleo_qels.2019.fm2c.6 Research Collection
18. Saerens, Grégoire, Tang, Iek, Reig Escalé, Marc, Renaut, Claude, Petrov, Mihail, Shtrom, Igor, Bouravleuv, Alexey, Cirlin, George, Grange, Rachel and Maria Timofeeva. III-V Nanowires as

Building Block for Nonlinear Photonics. 1D2D Nanomat summer school, July 2-13, 2019, Lille, France.

19. Savo, Romolo, Morandi, Andrea, Kaufmann, Fabian, Timpu, Flavia, Reig Escalé, Marc, Zanini, Michele, Isa, Lucio and Rachel Grange. Random quasi-phase-matching in bottom-up assemblies of nanoparticles into disordered microspheres. NANOP 2019. Functional Nanophotonics. Nanophotonics and Micro/Nano Optics International Conference / Sept 4-6, 2019, Munich. Book of Abstracts. s.l.: NANOP, 2019. pp. 267.
20. Timofeeva, Maria, Tang, Iek, Lang, Lukas, Renaut, Claude, Timpu, Flavia, Petrov, Mihail, Frizyuk, Kristina, Shtrom, Igor, Bouravleuv, Alexey, Cirlin, George and Rachel Grange. Nonlinear optical nanoantennas fabricated from III-V nanowires. IV International Conference on Metamaterials and Nanophotonics (METANANO 2019), July 15-19, 2019, St. Petersburg, Russia.
21. Timpu, Flavia, Vogler-Neuling, Viola V. and Rachel Grange. Second-harmonic generation from metal oxide metasurfaces and photonic crystals. Proceedings of META 2019, The 10th International Conference on Metamaterials, Photonic Crystals and Plasmonics Ed. Zouhdi, Said and Topa, Antonio. s.l.: META Publishing, 2019. pp. 827-828.DOI: 10.3929/ethz-b-000358114
22. Vogler-Neuling, Viola V., Pohl, David, Hendricks, Nicholas R., Lang, Lukas, Timofeeva, Maria, Schneider, Barbara, Richter, Felix, Timpu, Flavia, Monneret, Serge, Starsich, Fabian and Rachel Grange. Large-Area 3D Nonlinear Woodpile Photonic Crystal With Barium Titanate Nanoparticles. Complex Nanophotonics Science Camp: Book of Abstracts. s.l.: Complex Nanophotonics Camp, 2019. pp. 118-119.
23. Xu, Lei, Saerens, Grégoire, Timofeeva, Maria, Miroshnichenko, Andrey E., Chamacho-Morales, Rocio, Volkovskaya, Irina, Smirnova, Daria, Lysevych, Mykhaylo, Huang, Lujun, Cai, Marcus, Karouta, Fouad, Tan, H. Hoe, Kauranen, Martti, Jagadish, Chennupati, Grange, Rachel, Neshev, Dragomir N. and Mohsen Rahmani. Switchable unidirectional second-harmonic emission through GaAs nanoantennas. AOS Australian Conference on Optical Fibre Technology (ACOFT) and Australian Conference on Optics, Lasers, and Spectroscopy (ACOLS) 2019 Ed. Mitchell, Arnan and Rubinsztein-Dunlop, Halina. Bellingham, WA: SPIE, 2019. pp. 112000J-1. DOI: 10.1117/12.2539887

2018

24. Savo, Romolo, Morandi, Andrea, Kaufmann, Fabian, Timpu, Flavia, Reig Escalé, Marc, Vogler-Neuling, Viola V., Zanini, Michele, Isa, Lucio and Rachel Grange. Second Harmonic Generation in Disordered Nano-Oxides Assemblies. Book of Abstracts from the 2018 MRS Fall Meeting. Warrendale, PA: Materials Research Society, 2018. pp. EP07.05.02.
25. Timofeeva, Maria, Lang, Lukas, Renaut, Claude, Timpu, Flavia, Shtrom, Igor, Bouravleuv, A., Cirlin, George and Rachel Grange. III-V nanowires as building blocks for nonlinear photonics. Dissemination work shop of the research unit FOR1616: „Dynamics and Interactions of Semiconductor Nanowires for Optoelectronics“, September 24-27, 2018, Weimar, Germany.
26. Renaut, Claude, Hendricks, Nicholas R., Timpu, Flavia, Petrov, Mihail, Ni, Songbo, Wolf, Heiko, Isa, Lucio, Kivshar, Yuri and Rachel Grange. Heterogeneous BaTiO3-Au Nanodimers for Increased Second-Harmonic Signals. SPIE Photonics Europe 2018, April 22-26, 2018, Strasbourg, France.
27. Timpu, Flavia, Reig Escalé, Marc, Merkt, A., Lang, Lukas, Timofeeva, Maria and Rachel Grange. Metasurfaces Of Barium Titanate As Filters In The Visible Range. Swiss NanoConvention, June 6-7, 2018, Zürich.
28. Timofeeva, Maria, Lang, Lukas, Renaut, Claude, Timpu, Flavia, Shtrom, Igor, Bouravleuv, Alexey, Cirlin, George and Rachel Grange. III-V nanoantennas fabricated from nanowires for enhanced nonlinear optical signal at Mie resonances. Nanophotonics VII Ed. Andrews, David L., Bain, Angus

J., Nunzi, Jean-Michel and Ostendorf, Andreas. Bellingham, WA: SPIE, 2018. pp. 106721U.DOI: 10.1117/12.2306050

29. Kaufmann, Fabian, Sergeyev, Anton, Reig Escalé, Marc and Rachel Grange. On-chip optical parametric amplification in subwavelength lithium niobate nanowaveguides. Advanced Photonics 2018 (BGPP, IPR, NP, NOMA, Sensors, Networks, SPPCom, SOF). Washington, DC: The Optical Society (OSA), 2018. pp. JTu5A.52. DOI: 10.1364/bgppm.2018.jtu5a.52
30. Reig Escalé, Marc, Pohl, David, Heni, Wolfgang, Bäuerle, Benedikt, Josten, Arne, Sergeyev, Anton, Leuthold, Juerg and Rachel Grange. Integrated electro-optic Bragg modulators in lithium niobate nanowaveguides. Advanced Photonics 2018 (BGPP, IPR, NP, NOMA, Sensors, Networks, SPPCom, SOF). Washington, DC: The Optical Society (OSA), 2018. pp. IW4I.4. DOI: 10.1364/IPRSN.2018.IW4I.4
31. Timofeeva, Maria, Lang, Lukas, Renaut, Claude, Timpu, Flavia, Shtrom, Igor, Bouravlev, Alexei, Cirlin, George and Rachel Grange. Anapoles in Disk Nanoantennas Fabricated from III-V Nanowires for Enhancement Second Harmonic Generation. MRS Fall Meeting & Exhibit 2018. Abstract Book, 2018. pp. 711-711.
32. Timpu, Flavia, Garcia, Joan S., Buscaglia, Maria T., Buscaglia, Vincenzo and Rachel Grange. Ultraviolet Mie Resonances From LiNbO3 Nanocubes For Enhancing Nonlinear Signals. Advanced Photonics 2018 (BGPP, IPR, NP, NOMA, Sensors, Networks, SPPCom, SOF). Washington, DC: The Optical Society (OSA), 2018. pp. NpW3C.1. DOI: 10.1364/np.2018.npw3c.1 Research Collection
33. Timpu, Flavia, Reig Escalé, Marc, Merkt, A., Lang, Lukas, Timofeeva, Maria and Rachel Grange. Top-down Fabrication Of Barium Titanate Metasurfaces With Transmission Filtering In The Visible. Proceedings of the 12th International Congress on Artificial Materials for Novel Wave phenomena. Rome: Metamorphose VI AISBL, 2018. pp. VI-333-VI-335.

2017

34. Sergeyev, Anton, Reig Escalé, Marc, Floc'H, Kevin, Geiss, Reinhard and Rachel Grange. Mapping near-field of the guided second-harmonic in lithium niobate nanowaveguides with photosensitive polymer. 2017 Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC). Piscataway, NJ: IEEE, 2017. pp. 8087629.DOI: 10.1109/CLEOE-EQEC.2017.8087629
35. Reig Escalé, Marc, Sergeyev, Anton, Geiss, Reinhard and Rachel Grange. Shaping the Light Distribution with Perovskite Nanowaveguides. International Conference on Metamaterials and Nanophotonics (MetaNano 2017), September 18-22, 2017, Vladivostok, Russia.
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44. Rendon Barraza, Carolina, Balla, Naveen K., Bermúdez Ureña, Esteban, Timpu, Flavia, Grange, Rachel, Quidant, Romain and Sophie Brasselet. Polarized nonlinear nanoscopy in metal and ferroelectric nanostructures. 2016 SPIE Photonics West, February 13-18, 2016, San Francisco, CA. USA.
45. Sergeyev, Anton and Rachel Grange. Generation of nonlinear optical light in lithium niobate nanowaveguides. 2016 IEEE Photonics Society Summer Topical Meeting Series (SUM). Piscataway, NJ: IEEE, 2016. pp. 197-198.DOI: 10.1109/PHOSST.2016.7548800
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4. Patents

- R. Grange, M. Timofeeva, L. Lang, C. Renaut, Automated System For Wide-Field Multiphoton Microscope, European Patent Application, EP18193103, September 7, 2018.
- M. Reig Escalé, F. Kaufmann, D. Pohl, R. Grange, E-Beam Based Fabrication Method for Micro- and Nano-Structures and Optical Devices Fabricated by the Method, EP20177729.9, filing date 02.06.2020

5. Invited Seminars, Public Outreach and Media Appearances

1. Invited to talk about the 'hubs' concept of the Photonics online Meetup (POM20) "A green future for Astronomy: Maintaining world-class research and collaboration in the climate crisis" European Astronomical Society's Annual Meeting 29 June - 3 July 2020 in Leiden, The Netherlands
2. Photonics Online Meetup poster session on Twitter January 9, 2020:
   - Broadband electro-optic modulators enabled via BaTiO3 meta-coatings
   - Integrated microring resonators and waveguide Bragg cavities in Lithium-niobate on insulator
   - III-V nanowires as building blocks for nonlinear photonics

3. Blog post on the PolarNon microscope for material quality control (to appear in the industry News website in December 2019)
4. Article about my research for the EU Grants Access, Ingenieurin des Lichts, Science Stories (To appear Edition 03 / 2019).
5. χ(2) Nanomaterials for Nonlinear Integrated Photonic Devices, Rhur University, Bochum, Germany, 13.06.2019.
6. Engineering metal-oxide nanomaterials to enhance nonlinear optical signal for compact photonic devices, Ecole Nationale Supérieure de Chimie de Paris, 28.03.2019.
7. $\chi^{(2)}$ Nanomaterials for Nonlinear Integrated Photonic Devices, MPQ Garching, 05.02.2019
8. $\chi^{(2)}$ Nanomaterials for Nonlinear Integrated Photonic Devices, ICFO, Barcelona, 17.01.2019
9. How to Enhance Nonlinear Optical Signals at the Nanoscale?, OSA Webinar, 10.01.2019
10. Metal-Oxide and Semiconductor Nanostructures to Enhance Nonlinear Optical Signal, Harvard University, Boston, 18.07.2018
11. Beyond metals and semiconductors: nano-oxides for integrated nonlinear photonic devices, MUST Women Scientist Workshop, Grindelwald, 22 January 2018
12. Beyond plasmonics: oxide and semiconductor nanomaterials for enhancing nonlinear optical signals, University of Exeter, Jacopo Bertolotti's lab, Exeter, UK, November 3, 2017.
13. Beyond plasmonics: oxide and semiconductor nanomaterials for enhancing nonlinear optical signals, Advances in Materials Seminar Series, EPFL, 24 April 2017.
14. Fix the leaky Pipeline, Information Event on March 30th 2017 in Berne.
15. Applications of Nonlinear Optical Signal in GaAs Nanowires and $LiNbO_3$ Nanowaveguides, Institut Fresnel, Marseille, France, 01.12.2016
16. Beyond plasmonics: perovskite nanomaterials for enhancing nonlinear optical signals., Institute of Physical Chemistry, ETH Zurich, 22.10.2016
17. Les cristaux qui changent la lumière**, TEDx talk**, Martigny, 06.09.2016.