

Peer-reviewed journal papers

2015-2017 (publications related to my group in Zurich)

- (42) 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. *Chemistry of Materials* **2017**, *29*, 8158–8166.
- (41) 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 Letters* **2017**, *17*, 5381–5388.
- (40) Reig Escalé, M.; Sergeyev, A.; Geiss, R.; Grange, R. Shaping the Light Distribution with Facet Designs in Lithium Niobate Nanowaveguides. *Applied Physics Letters* **2017**, *111*, 83101.
- (39) Timpu, F.; Sergeyev, A.; Hendricks, N.; Grange, R. Second-Harmonic Enhancement with Mie Resonances in Perovskite Nanoparticles. *ACS Photonics*, *4*, 1, 76–84, Jan. **2017**.
- (38) Reig Escalé, M.; Sergeyev, A.; Grange, R. Mode Switching in Lithium Niobate Nanowaveguides to Control Nonlinear Light Directionality. *Optics Express*, *25*, 4, 3013, **2017**.
- (37) Sergeyev, A.; Reig Escalé, M.; Grange, R. Generation and Tunable Enhancement of Sum-Frequency Signal in Lithium Niobate Nanowires. *J. Phys. D. Appl. Phys.*, *50*, **2017**.
- (36) Timofeeva, M.; Bouravleuv, A.; Cirilin, 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*, 6290–6297.
- (35) 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*, 065301.
- (34) Sergeyev, A.; Geiss, R.; Solntsev, A. S.; Sukhorukov, A. A.; Schrempel, F.; Pertsch, T.; Grange, R. Enhancing Guided Second-Harmonic Light in Lithium Niobate Nanowires. *ACS Photonics* **2015**, *2*, 687–691.

2011-2014 (publications related to my group in Jena)

- (33) Geiss, R.; Saravi, S.; Sergeyev, A.; Diziain, S.; Setzpfandt, F.; Schrempel, F.; Grange, R.; Kley, E.-B.; Tünnermann, A.; Pertsch, T. Fabrication of Nanoscale Lithium Niobate Waveguides for Second-Harmonic Generation. *Opt. Lett.* **2015**, *40*, 2715.
- (32) Pshenay-Severin, E.; Mukhin, I.; Fasold, S.; Geiss, R.; Steinbrück, A.; Grange, R.; Chipouline, A.; Pertsch, T. Relaxation Time Mapping of Single Quantum Dots and Substrate Background Fluorescence. *JETP Lett.* **2015**, *102*, 161–166.
- (31) Richter, J.; Steinbrück, A.; Zilk, M.; Sergeyev, A.; Pertsch, T.; Tünnermann, A.; Grange, R. Core-Shell Potassium Niobate Nanowires for Enhanced Nonlinear Optical Effects. *Nanoscale* **2014**, *6*, 5200–5207.
- (30) Steinbrück, A.; Choi, J.-W.; Fasold, S.; Menzel, C.; Sergeyev, A.; Pertsch, T.; Grange, R. Plasmonic Heating with Near Infrared Resonance Nanodot Arrays for Multiplexing Optofluidic Applications. *RSC Adv.* **2014**, *4*, 61898–61906.
- (29) Sergeyev, A.; Geiss, R.; Solntsev, A. S.; Steinbrück, A.; Schrempel, F.; Kley, E.-B.; Pertsch, T.; Grange, R. Second-Harmonic Generation in Lithium Niobate Nanowires for Local Fluorescence Excitation. *Opt. Express* **2013**, *21*, 19012–19021.
- (28) Kim, E.; Steinbrück, A.; Buscaglia, M. T.; Buscaglia, V.; Pertsch, T.; Grange, R. Second-Harmonic Generation of Single BaTiO₃ Nanoparticles down to 22 Nm Diameter. *ACS Nano* **2013**, *7*, 5343–5349.
- (27) Richter, J.; Steinbrück, A.; Pertsch, T.; Tünnermann, A.; Grange, R. Plasmonic Core-Shell Nanowires for Enhanced Second-Harmonic Generation. *Plasmonics* **2012**, *8*, 115–120.

- (26) Grange, R.; Brönstrup, G.; Kiometzis, M.; Sergeev, A.; Richter, J.; Leiterer, C.; Fritzsche, W.; Gutsche, C.; Lysov, A.; Prost, W.; *et al.* Far-Field Imaging for Direct Visualization of Light Interferences in GaAs Nanowires. *Nano Lett.* **2012**, *12*, 5412–5417.

2008-2011 (publications related to my post-doc at EPFL)

- (25) Grange, R.; Lanvin, T.; Hsieh, C.-L.; Pu, Y.; Psaltis, D. Imaging with Second-Harmonic Radiation Probes in Living Tissue. *Biomed. Opt. Express* **2011**, *2*, 2532–2539.
- (24) Hsieh, C.; Pu, Y.; Grange, R.; Psaltis, D. Second Harmonic Generation from Nanocrystals under Linearly and Circularly Polarized Excitations. *Opt. Express* **2010**.
- (23) Hsieh, C.-L.; Pu, Y.; Grange, R.; Laporte, G.; Psaltis, D. Imaging through Turbid Layers by Scanning the Phase Conjugated Second Harmonic Radiation from a Nanoparticle. *Opt. Express* **2010**, *18*, 20723–20731.
- (22) Hsieh, C.-L.; Pu, Y.; Grange, R.; Psaltis, D.; Laporte, G. Digital Phase Conjugation of Second Harmonic Radiation Emitted by Nanoparticles in Turbid Media. *Opt. Express* **2010**, *18*, 12283–12290.
- (21) Hsieh, C.-L.; Grange, R.; Pu, Y.; Psaltis, D. Bioconjugation of Barium Titanate Nanocrystals with Immunoglobulin G Antibody for Second Harmonic Radiation Imaging Probes. *Biomaterials* **2010**, *31*, 2272–2277.
- (20) Pu, Y.; Grange, R.; Hsieh, C.-L.; Psaltis, D. Nonlinear Optical Properties of Core-Shell Nanocavities for Enhanced Second-Harmonic Generation. *Phys. Rev. Lett.* **2010**, *104*.
- (19) Hsieh, C.-L.; Grange, R.; Pu, Y.; Psaltis, D. Three-Dimensional Harmonic Holographic Microcopy Using Nanoparticles as Probes for Cell Imaging. *Opt. Express* **2009**, *17*, 2880–2891.
- (18) Grange, R.; Choi, J.-W. J. W.; Hsieh, C.-L. C. L.; Pu, Y. Y.; Magrez, A.; Smajda, R.; Forró, L.; Psaltis, D.; Smadja, R.; Forro, L. Lithium Niobate Nanowires Synthesis, Optical Properties, and Manipulation. *Appl. Phys. Lett.* **2009**, *95*, 143105–143108.

2002-2007 (publications related to my PhD thesis)

- (17) Fong, K. H.; Kikuchi, K.; Goh, C. S.; Set, S. Y.; Grange, R.; Haiml, M.; Schlatter, A.; Keller, U. Solid-State Er: Yb: Glass Laser Mode-Locked by Using Single-Wall Carbon Nanotube Thin Film. *Opt. Lett.* **2007**, *32*, 38–40.
- (16) Grange, R.; Zeller, S.; Haiml, M.; Ostinelli, O.; Gini, E.; Schön, S.; Keller, U.; Member, S. Antimonide Semiconductor Saturable Absorber for Passive Mode Locking of a 1.5-M Er: Yb: Glass Laser at 10 GHz. *IEEE Photonics Technol. Lett.* **2006**, *18*, 805–807.
- (15) Ostinelli, O.; Bächtold, W.; Haiml, H.; Grange, R.; Keller, U.; Gini, E.; Almuneau, G. Carrier Lifetime Reduction in 1.5-Mm AlGaAsSb Saturable Absorbers with Air and AlAsSb Barriers. *Appl. Phys. Lett.* **2006**, *89*, 071114.
- (14) Marchese, S. V.; Südmeyer, T.; Golling, M.; Grange, R.; Keller, U. Pulse Energy Scaling to 5 μJ from a Femtosecond Thin Disk Laser. *Opt. Lett.* **2006**, *31*, 2728.
- (13) Ostinelli, O.; Haiml, M.; Grange, R.; Almuneau, G.; Ebnöther, M.; Gini, E.; Müller, E.; Keller, U.; Bächtold, W. Highly Reflective AlGaAsSb/InP Bragg Reflector at 1.55 μm Grown by MOVPE. *J. Cryst. Growth* **2006**, *286*, 247–254.
- (12) Spühler, G. J.; Weingarten, K. J.; Grange, R.; Krainer, L.; Haiml, M.; Liverini, V.; Golling, M.; Schön, S.; Keller, U. Semiconductor Saturable Absorber Mirror Structures with Low Saturation Fluence. *Appl. Phys. B* **2005**, *81*, 27–32.
- (11) Spühler, G. J.; Krainer, L.; Liverini, V.; Grange, R.; Haiml, M.; Pawlik, S.; Schmidt, B.; Schön, S.; Keller, U. Passively Mode-Locked 1.3-Mm Multi-GHz Nd: YVO₄ Lasers with Low Timing Jitter. *IEEE Photonics Technol. Lett.* **2005**, *17*, 1319–1321.
- (10) Grange, R.; Rutz, a.; Liverini, V.; Haiml, M.; Schön, S.; Keller, U. Nonlinear Absorption Edge Properties of 1.3-Mm GaInNAs Saturable Absorbers. *Appl. Phys. Lett.* **2005**, *87*, 132103.

- (9) Rutz, A.; Grange, R.; Liverini, V.; Haiml, M.; Schön, S.; Keller, U. 1.5 [Micro Sign]m GaInNAs Semiconductor Saturable Absorber for Passively Modelocked Solid-State Lasers. *Electron. Lett.* **2005**, *41*, 321.
- (8) Lorensen, D.; Unold, H. J.; Maas, D. J. H. C.; Aschwanden, a.; Grange, R.; Paschotta, R.; Ebling, D.; Gini, E.; Keller, U. Towards Wafer-Scale Integration of High Repetition Rate Passively Mode-Locked Surface-Emitting Semiconductor Lasers. *Appl. Phys. B* **2004**, *79*, 927–932.
- (7) Grange, R.; Ostinelli, O.; Haiml, M.; Krainer, L.; Spu, G. J.; Gini, E.; Scho, S.; Keller, U. Antimonide Semiconductor Saturable Absorber for 1.5 L M. *Electron. Lett.* **2004**, *40*.
- (6) Haiml, M.; Grange, R.; Keller, U. Optical Characterization of Semiconductor Saturable Absorbers. *Appl. Phys. B Lasers Opt.* **2004**, *79*, 331–339.
- (5) Grange, R.; Haiml, M.; Paschotta, R.; Spühler, G. J.; Krainer, L.; Golling, M.; Ostinelli, O.; Keller, U. New Regime of Inverse Saturable Absorption for Self-Stabilizing Passively Mode-Locked Lasers. *Appl. Phys. B* **2004**, *80*, 151–158.
- (4) Liverini, V.; Schön, S.; Grange, R.; Haiml, M.; Zeller, S. C.; Keller, U. Low-Loss GaInNAs Saturable Absorber Mode Locking a 1.3-Mm Solid-State Laser. *Appl. Phys. Lett.* **2004**, *84*, 4002.
- (3) Schlatter, A.; Zeller, S. C.; Grange, R.; Paschotta, R.; Keller, U. Pulse-Energy Dynamics of Passively Mode-Locked Solid-State Lasers above the Q-Switching Threshold. *J. Opt. Soc. Am. B* **2004**, *21*, 1469.
- (2) Spühler, G. J.; Golding, P. S.; Krainer, L.; Kilburn, I. J.; Crosby, P. a.; Brownell, M.; Weingarten, K. J.; Paschotta, R.; Haiml, M.; Grange, R.; *et al.* Multi-Wavelength Source with 25 GHz Channel Spacing Tunable over C-Band. *Electron. Lett.* **2003**, *39*, 778.
- (1) Hoogland, S.; Garnache, a.; Sagnes, I.; Paldus, B.; Weingarten, K. J.; Grange, R.; Haiml, M.; Paschotta, R.; Keller, U.; Tropper, a. C. Picosecond Pulse Generation with 1.5 [Micro Sign]m Passively Modelocked Surface-Emitting Semiconductor Laser. *Electron. Lett.* **2003**, *39*, 846.

Selected conference papers and invited talks

2015-2018 Contributions related to my SNSF Professorship at ETH Zurich

2018

- (1) Grange, R. Engineering Nano-Oxides to Enhance Nonlinear Optical Signal for Integrated Devices. SPIE Photonics Europe 2018, Strasbourg, France 2018, 22–26.04, **invited talk**.
- (2) Renaut, C.; Hendricks, N. R.; Timpu, F.; Petrov, M.; Ni, S.; Wolf, H.; Isa, L.; Kivshar, Y. S.; Grange, R. Heterogeneous BaTiO₃-Au Nanodimers for Increased Second-Harmonic Signals. SPIE Photonics Europe 2018 2018, 22–26.04, **talk**.
- (3) Timofeeva, M.; Lang, L.; Renaut, C.; Timpu, F.; Bouravlev, A. G.; Cirilin, M.; Grange, R. III-V Nanoantennas Fabricated from Nanowires for Enhanced Nonlinear Optical Signal at the Mie Resonances. SPIE Photonics Europe 2018 2018, 22–26.04, **talk**.
- (4) Grange, R. 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**.
- (5) Grange, R. 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

- (6) Grange, R. Enhancing Nonlinear Optical Signal of Perovskite Nanomaterials. *6th International Topical Meeting on Nanophotonics and Metamaterials, Nanometa, Seefeld, Austria* **2017**, 01.04-07, **Invited Talk**.
- (7) Grange, R. 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**.
- (8) Petrov, M.; Timpu, F.; Renaut, C.; Hendricks, N. R.; Ni, S.; Wolf, H.; Isa, L.; Kivshar, Y.; Grange, R. Hybrid Plasmonic - All-Dielectric Nanodimers for Second-Harmonic Generation. *Nanophotonics and Micro/Nano Optics International Conference, Barcelona, Spain* **2017**, 09.13-15, Talk.
- (9) Reig Escalé, M.; Sergeyev, A.; Geiss, R.; Grange, R. Nonlinear Mode Switching in Lithium Niobate Nanowaveguides. *CLEO/Europe-EQEC Conference, Munich, Germany, CK-2.4* **2017**, 06.25-29, Talk.
- (10) Renaut, C.; Hendricks, N. R.; Timpu, F.; Petrov, M.; Ni, S.; Wolf, H.; Isa, L.; Kivshar, Y. S.; Grange, R. Hybrid Gold-Perovskite Nanodimers for Enhancing Second-Harmonic Generation. *ICMAT 2017, 9th International conference Materials for Advanced Technologies, Singapore* **2017**, 06.21-25, Talk.
- (11) Sergeyev, A.; Le Floch, K.; Geiss, R.; Grange, R. Mapping near-Field of the Guided Second-Harmonic in Lithium Niobate Nanowaveguides with Photosensitive Polymer. *CLEO/Europe-EQEC Conference, Munich, Germany, EG-P.5* **2017**, 06.25-29, Poster.
- (12) Sergeyev, A.; Reig Escalé, M.; Geiss, R.; Grange, R. Generation and Waveguiding of the Sum-Frequency Signal in Lithium Niobate Nanowires. *CLEO/Europe-EQEC Conference, Munich, Germany, CD-7.3* **2017**, 06.25-29, Talk.
- (13) Timofeeva, M.; Bouravlev, A. G.; M., C.; Reig Escalé, M.; Sergeyev, A.; Grange, R. Second-Harmonic Generation Imaging for Crystal Structure Characterization in III-V Nanowires. *CLEO/Europe-EQEC Conference, Munich, Germany, CE – 8.6* **2017**, 06.25-29, Talk.
- (14) Timpu, F.; Renaut, C.; Trassin, M.; Fiebig, M.; Grange, R. Barium Titanate Meta-Atoms for Nonlinear Photonics. *E-MRS 2017 Spring Meeting, Strasbourg, France* **2017**, 05.22-26, Talk.
- (15) Timpu, F.; Renaut, C.; Trassin, M.; Fiebig, M.; Grange, R. Perovskite Nanostructures as Meta-Atoms for Mie Resonances Inducing Nonlinear Optical Enhancement. *11th International Congress on Engineered Material Platforms for Novel Wave Phenomena – Metamaterials, Marseille, France* **2017**, 08.28-31, Talk.
- (16) Timpu, F.; Sergeyev, A.; Hendricks, N. R.; Grange, R. Mie Resonance Induced Enhancement of Second-Harmonic Generation in Perovskite Nanoparticles. *ICMAT 2017, 9th International conference Materials for Advanced Technologies, Singapore* **2017**, 06.21-25, Talk.
- (17) Timpu, F.; Sergeyev, A.; Hendricks, N. R.; Grange, R. Mie Resonance Induced Enhancement of Second-Harmonic Generation in Perovskite Nanoparticles. *CLEO/Europe-EQEC Conference, Munich, Germany* **2017**, 06.25.29, Talk.
- (18) Vogler-Neuling, V. V.; Hendricks, N. R.; B., S.; Chausse, V.; Grange, R. Solution Processing of Non-Centrosymmetric Nanomaterials for Photonic Crystal Applications. *Metamaterials 2017, Marseille, France* **2017**, 08.28-31, Talk.
- (19) Reig Escalé, M.; Sergeyev, A.; Geiss, R.; Grange, R. Shaping the Light Distribution with Perovskite Nanowaveguides. *MetaNano 2017, Vladivostok, Russia* 2017, 18–22.09, **invited talk**.

2016

- (20) Grange, R. 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**.
- (21) Grange, R. Enhancing Nonlinear Optical Signal in Noncentrosymmetric Nanomaterials. *SPIE Photonics Europe*, Brussels 2016, 04.03-06, **Invited**.

- (22) Grange, R. Enhancing Nonlinear Optical Signal in Perovskite Nanostructures. Days on Diffraction, St. Petersburg, Russia 2016, 07.01, Invited.
- (23) Rendon Barraza, C.; Balla, N. K.; Bermudez-Urena, E.; Timpu, F.; Grange, R.; Quidant, R.; Brasselet, S. Polarized Nonlinear Nanoscopy in Metal and Ferroelectric Nanostructures. SPIE Photonics West, San Francisco, USA 2016, 02.16-18, Talk.
- (24) Sergeyev, A.; Grange, R. Nonlinear Wave-Mixing in Lithium Niobate Nanowaveguides. EMN Meeting, Amsterdam, Netherlands 2016, 05.16-19, Invited.
- (25) Sergeyev, A.; Grange, R. Generation of Nonlinear Optical Light in Lithium Niobate Nanowaveguides. IEEE Photonics Society Summer Topicals Meeting Series, Nanowires optoelectronics, New Port beach USA 2016, 07.11-13, Invited.

2015-2012 Contributions related to my junior group in Jena, Germany.

- (26) Sergeyev, A.; Geiss, R.; Solntsev, A. S.; Sukhorukov, A. A.; Schreppe, F.; Pertsch, T.; Grange, R. Maximizing the Guided Second-Harmonic in Lithium Niobate Nanowires. Eur. Conf. Lasers Electro-Optics, Munich 2015, June.
- (27) Timpu, F.; Wojdyr, M.; Grange, R. Second Harmonic Enhancement at Mie Resonance, of Single BaTiO₃ Nanoparticle. Front. Nanophotonics, CSF Conf. Monte Verit. Switz. 2015, 09.01-04.
- (28) Sergeyev, A.; Geiss, R.; Solntsev, A.; Kley, E.-B.; Pertsch, T.; Grange, R. Local Fluorescent Dye Excitation with Guided Second-Harmonic in Lithium Niobate Nanowires. CLEO US, San Jose USA 2014, 06.8-13.
- (29) Grange, R. Coherent Nanoprobes for New Multiphoton Imaging Modalities. In International Workshop on New Frontiers in Nonlinear Raman Microscopy, Heidelberg; 2014; pp. 08.08–09.
- (30) Sergeyev, A.; Geiss, R.; Solntsev, A. S.; Kley, E.-B.; Pertsch, T.; Grange, R. Dye Excitation with the Generated and Guided Second Harmonic in LiNbO₃ Nanowires. EOSAM, Berlin 2014, 09.15-19.
- (31) Kim, E.; Steinbrück, A.; Buscaglia, M. T.; Buscaglia, V.; Pertsch, T.; Grange, R. Coherent Nanoprobes down to 22 Nm Diameter for Turbid Media Imaging. EOSAM, Berlin 2014, 09.15-19.
- (32) A. Steinbrück; Choi, J.; Fasold, S.; Menzel, C.; Sergeyev, A.; Pertsch, T.; Grange, R. Plasmonic Optofluidic Device for Multiplexing Heat-Induced Applications. EOSAM, Berlin 2014, 09.15-19.
- (33) Steinbrück, A.; Richter, J.; Choi, J.-W.; Pertsch, T.; Tünnermann, A.; Grange, R. A Visible to Near Infrared Optofluidic Device Based on Functionalized Plasmonic Nanoparticle Dense Films. 2nd EOS Conf. Optofluidics, Munich 2013, June.
- (34) Sergeyev, A.; Geiss, R.; Kley, E.-B.; Pertsch, T.; Grange, R. Propagation of Second-Harmonic Generation in LiNbO₃ Nanowires. Eur. Conf. Lasers Electro-Optics, Munich 2013, June.
- (35) R. Grange; Sergeyev, A.; Brönstrup, G.; Richter, J.; Tünnerman, A.; Pertsch, T.; Christiansen, S.; Leiterer, C.; Fritzsche, W.; Gutsche, C.; et al. Imaging of Waveguided and Scattered Interferences in Individual GaAs Nanowires via Second-Harmonic Generation, Oral Presentation. SPIE Photonics Eur. Brussels 2012, 04.16-19.
- (36) Richter, J.; Steinbrück, A.; Pertsch, T.; Tünnermann, A.; R. Grange. Plasmonic Core-Shell Nanowires for Enhanced Second-Harmonic Generation. EMRS Spring Meet. Strasbg. 2012.
- (37) Grange, R. Plasmonic Core-Shell Nanoparticles to Enhance Nonlinear Optical Effects. 13e Journées la matière Condens. Montpellier, 27 -31 August 2012, 08.27-31, Invited.
- (38) Brönstrup, G.; Grange, R. Observation of Waveguiding- Mie Scattering Interference at GaAs Nanowires by Second Harmonic Generation,. EOS Annu. Meet. Aberdeen, Scotl. 2012, 09-25-28.

2011-2009 Contributions related to my post-doc at EPFL

- (39) Hsieh, C.-L.; Grange, R.; Lanvin, T.; Pu, Y.; Psaltis, D. In Vivo Imaging Using Second Harmonic Nanoparticles. Talk QFC5, CLEO USA Balt. 2011.
- (40) R. Grange. Plasmonic Nanoshells Enhancing Nonlinear Optical Effects. Mol. Plasmonics, Jena, Ger. 2011, 05.19-21, Invited.

- (41) Grange, R.; Lanvin, T.; Hsieh, C.-L.; Pu, Y.; Psaltis, D. Second-Harmonic Nanoparticles for Deep Tissue In Vivo Imaging. oral CL/EB2.2, CLEO Eur. Munich 2011, 05.22-25.
- (42) Choi, J.-W.; Grange, R.; Papadopoulos, I. N.; Psaltis, D. Optical and Fluidic Applications of Wavelength Multiplexed Plasmonic Nanoparticles as Localized Heat Sources. 1st EOS Conf. Optofluidics, Munich 2011, 05.23-25.
- (43) Hönig, J.; Brenet, G.; Sergeev, A.; Janunts, N.; Pertsch, T.; Tünnerman, A.; Grange, R. Core-Shell Nanowires for Enhanced-Second Harmonic Generation,. 2nd Ger. French Work. Nanosci. Landau 2011, 09.1-2, Invited.
- (44) Psaltis, D.; Grange, R.; Choi, J.-W.; Hsieh, C.-L.; Pu, Y.; Magrez, A.; Forro, L. Optofluidic Applications with Lithium Niobate Nanowires. SPIE Opt. + Photonics, San Diego 2010, Invited.
- (45) Choi, J.-W.; Grange, R.; Hsieh, C.-L.; Pu, Y.; Magrez, A.; Forro, L.; Psaltis, D. Optically Generated Electric Fields by Lithium Niobate Nanowires. Oral CWM7, CLEO USA 2010.
- (46) Pu, Y.; Grange, R.; Hsieh, C.-L.; Psaltis, D. Enhanced Second Harmonic Generation in Plasmonic Nanocavities. Oral QFC5, CLEO USA 2010.
- (47) Psaltis, D.; Grange, R.; Hsieh, C.-L.; Pu, Y. Second Harmonic Nanocrystals. SPIE Photonics Eur. Brussels 2010, 04.12-16, Invited.
- (48) Ch.-L. Hsieh; Grange, R.; Pu, Y.; Psaltis, D. 25. Ch.-L. Hsieh, R. Grange, Y. Pu, and D. Psaltis Imaging Cells with Second-Harmonic Generation Active Nanocrystals. Biomed. Opt. (BIOMED), OSA Top. Meet. Florida 2010, 04.13.
- (49) Hsieh, C.; Grange, R. Characterization of the Cytotoxicity and Imaging Properties of Second-Harmonic Nanoparticles. Proc. SPIE 2010, 7759.
- (50) Grange, R.; Choi, J.-W.; Hsieh, C.-L.; Pu, Y.; Magrez, A.; Forro, L.; Psaltis, D. Optical and Electrical Properties of Lithium Niobate Nanowires. Top. Meet. Photorefractive Mater. Eff. Devices, Bad Honnef, Ger. 2009, 06.11-14.
- (51) (Pu, Y.; Grange, R.; Hsieh, C.-L.; Psaltis, D. Ultrasensitive Second Harmonic Generation Nanoprobes via Plasmonic Core-Shell Structures. CLEO Eur. Munich 2009, 06.14-19, Postdeadline.
- (52) Grange, R.; Hsieh, C.-L.; Pu, Y.; Psaltis, D. Second-Harmonic Efficiency of Single Barium Titanate Nanoparticles Used as Biomarkers for Cells Imaging. CLEO Eur. Munich 2009, 06.14-19.
- (53) Grange, R.; Choi, J.-W.; Hsieh, C.-L.; Pu, Y.; Magrez, A.; Forro, L.; Psaltis, D. Lithium Niobate Nanowires: Growth, Second-Harmonic and Dielectrophoretic Properties. CLEO Eur. Munich 2009, 06.14-19, Invited.
- (54) Grange, R.; Pu, Y.; Hsieh, C.-L.; Psaltis, D. Second Harmonic Nanoparticle Markers. SPIE Opt. Photonics 2009, 08.2-6, Invited.

2004-2006 Contributions related to my PhD studies at ETH Zurich

- (55) Grange, R.; Rutz, A.; Liverini, V.; Haiml, M.; Schön, S.; Keller, U. Saturation Fluence and Modulation Depth of GaInNAs SESAM around Its Band Edge for Optimal Mode Locking. CLEO Eur. 2005, 06.12-17.
- (56) Grange, R.; Haiml, M.; Paschotta, R.; Spühler, G. J.; Krainer, L.; Keller, U.; Ostinelli, O. Antimonide Semiconductor Saturable Absorber for Passive Mode Locking of a 1.5-Mu M Er : Yb : Glass Laser. Conf. Lasers Electro-Optics (CLEO), Balt. USA 2005, 05.22-27.
- (57) Grange, R.; Haiml, M.; Paschotta, R.; Spühler, G. J.; Krainer, L.; Keller, U.; Ostinelli, O. Novel Inverse Saturable Absorption for Improved Passive Mode Locking. Conf. Lasers Electro-Optics (CLEO), Balt. 2005, 05.22-27.
- (58) Grange, R.; Schön, S.; Liverini, V.; Zeller, S.; Haiml, M.; Keller, U. A Low-Loss and Low-Saturation-Fluence GaInNAs SESAM for Ultrafast 1.3-Mm Solid-State Lasers. Adv. Solid-State Photonics (ASSP), St. Fe, USA 2004, 02.1-4.

Published Dissertation

R. Grange, "Near Infrared Semiconductor Saturable Absorber Mirrors for High Repetition Rate lasers ", Series in Quantum Electronics, Vol. 38, Hartung-Gorre Verlag, Konstanz, **2006**. ISBN 3-86628-073-4.

Book chapters (peer reviewed)

- (1) Sergeev, 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.
- (2) R. Grange, Nonlinear Optical Enhancement with Plasmonic Core-Shell Nanowires, in a volume entitled 'Active Plasmonic Nanomaterials' in Pan Stanford Publishing, publication June 2015.
- (3) R. Grange, F. Dutto, and A. Radenovic, "Niobates Nanowires: Synthesis, Characterization and Applications," in *Nanowires / Book 2*, A. Hashim, ed. (Intec, 2011), ISBN 978-953-307-563-1.
- (4) Ye Pu, Chia-Lung Hsieh, Rachel Grange, and Demetri Psaltis, Harmonic Holography. In Peter W. Hawkes, editor: *Advances in Imaging and Electron Physics*, Vol. 160, Academic Press, 2010, pp. 75-112. ISBN 978-0-12-381017-5.

Invited Seminars

- (1) Beyond plasmonics: oxide and semiconductor nanomaterials for enhancing nonlinear optical signals, University of Exeter, Jacopo Bertolotti's lab, Exeter, UK, November 3, 2017.
- (2) Beyond plasmonics: oxide and semiconductor nanomaterials for enhancing nonlinear optical signals, *Advances in Materials Seminar Series*, EPFL, 24 April 2017.
- (3) Fix the leaky Pipeline, Information Event on March 30th 2017 in Berne.
- (4) R. Grange, Applications of Nonlinear Optical Signal in GaAs Nanowires and LiNbO₃ Nanowaveguides, Institut Fresnel, Marseille, France, 01.12.2016
- (5) R. Grange, Beyond plasmonics: perovskite nanomaterials for enhancing nonlinear optical signals., Institute of Physical Chemistry, ETH Zurich, 22.10.2016
- (6) R. Grange, Les cristaux qui changent la lumière, TEDx talk, Martigny, 06.09.2016.
- (7) R. Grange, Enhancing Nonlinear Optical Signal in Non Centrosymmetric Nanomaterials, Besançon, Femto-ST, 12.05.2016.
- (8) R. Grange, Le génie des nanocristaux pour l'imagerie et l'optoélectronique, *Trends in Micro Nano*, 28.10.2015, Yverdon organized from the <http://www.swissmntnetwork.ch/content/>.
- (9) R. Grange, Enhancing Nonlinear Optical Signal in χ^2 Nanomaterials, IMPRS Graduate students seminar, Max Planck Institute for the Science of Light (MPL), 12.11.2015, Erlangen, Germany.
- (10) R. Grange, Coherent Nanoprobes for Multiphoton Imaging in Turbid Media, Université Pierre et Marie Curie, Laboratoire Kastler-Brossel, 11.12.2014, Paris.
- (11) R. Grange, Coherent Nanoprobes for New Multiphoton Imaging Modalities, invited talk, Carl Zeiss AG, Jena, 30.07.2013.
- (12) R. Grange, Y. Pu, Ch.-L. Hsieh, D. Psaltis, SHRIMPs: Second harmonic radiation imaging probes, Invited talk, Photonics Day, 6 November 2009, EPFL.

Schools / Short courses

- (1) R. Grange, lecturer at the 2018 winter school of Linné Center on Advanced Optics and Photonics (ADOPT) in Romme Alpin, Sweden on March 22-25 2018.
- (2) R. Grange, Fundamentals of Plasmonics, Summer school 'Perspectives on photonics: from materials to devices', Gstaad, 25-30.07.2016

- (3) R. Grange, $\chi(2)$ and $\chi(3)$ nanomaterials for nonlinear applications, Summer school 'Perspectives on photonics: from materials to devices', Gstaad, 25-30.07.2016.
- (4) R. Grange, tutorial on nanostructured materials for photonic crystal and plasmonic applications, European Optical Society Annual Meeting in Berlin, 15.09.2014.

Research Policy publications

- (1) R. Grange, "Le système suisse d'innovation en comparaison internationale ", SBF News SER, 02/2006, août 2006.
- (2) R. Grange, "Le déficit en scientifiques met l'innovation suisse en péril ", AGEFI, 22 septembre 2006.
- (3) Bibliometrische Untersuchung zur Forschung in der Schweiz. Bericht des Staatssekretariats für Bildung und Forschung. SBF 2008.
- (4) OECD (2010), 'The Impacts of Nanotechnology on Companies: Policy Insights from Case Studies', OECD Publishing. <http://dx.doi.org/10.1787/9789264094635-en>.