Research outputs:

Deep-UV to Mid-IR Supercontinuum Generation driven by Mid-IR Ultrashort Pulses in a Gas-filled Hollow-core Fiber
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Directional supercontinuum generation: The role of the Soliton
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Poor-man's model of hollow-core anti-resonant fibers
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Multi-stage generation of extreme ultraviolet dispersive waves by tapering gas-filled hollow-core anti-resonant fibers
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review

Optical fiber
Research output: Patent › Patent – Annual report year: 2018 › Research

Cascaded nonlinearities for ultrafast nonlinear optical science and applications
Research output: Book/Report › Doctoral thesis – Annual report year: 2018 › Research

Curvature and position of nested tubes in hollow-core anti-resonant fibers
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2017 › Research › peer-review

Experimental verification of the intrinsic ultrafast delayed nonlinearity of gold
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2017 › Research › peer-review

Generation of multiple VUV dispersive waves using a tapered gas-filled hollow-core anti-resonant fiber
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2017 › Research › peer-review

Influence of dispersion of nonlinearity on coherent supercontinuum generation bandwidth in photonic crystal fibers pumped at 2 μm
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2017 › Research › peer-review

Multiple soliton compression stages in mid-IR gas-filled hollow-core fibers
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2017 › Research › peer-review

Octave-spanning supercontinuum generation in a silicon-rich nitride waveguide: Erratum
Research output: Contribution to journal › Comment/debate – Annual report year: 2017 › Research › peer-review

Parametrically tunable soliton-induced resonant radiation by three-wave mixing
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review

Soliton-plasma nonlinear dynamics in mid-IR gas-filled hollow-core fibers
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review
Octave-spanning supercontinuum generation in a silicon-rich nitride waveguide
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

Octave-spanning supercontinuum generation in a silicon-rich nitride waveguide
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

Third-order susceptibility of gold for ultrathin layers
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

Widely tunable mid-IR femtosecond resonant radiation induced by self-defocusing solitons in a quadratic nonlinear medium
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2016 › Research › peer-review

High-energy pulse compressor using self-defocusing spectral broadening in anomalously dispersive media
Research output: Patent › Patent – Annual report year: 2016 › Research

Coherent near-mid-IR supercontinuum generation in highly nonlinear multi-cladding liquid-core fiber designed for flat normal dispersion
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2015 › Research › peer-review

Collision between soliton and dispersive wave in phase-mismatched quadratic nonlinear crystals
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2015 › Research › peer-review

Dispersive waves induced by self-defocusing temporal solitons in a beta-barium-borate crystal.
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Efficient supercontinuum generation in quadratic nonlinear waveguides without quasi-phase-matching
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2015 › Research › peer-review

Energetic mid-IR femtosecond pulse generation by self-defocusing soliton-induced dispersive waves in a bulk quadratic nonlinear crystal
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Experimental observation of dispersive wave generation by self-defocusing nonlinearity in BBO crystal
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2015 › Research › peer-review

High-energy compression of mid-IR pulses in a bulk nonlinear crystal
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2015 › Research › peer-review

Improved Low-loss Hollow Core Anti-Resonant Silica Mid-IR Fibers
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2015 › Research › peer-review

Low Loss Double-clad Hollow Core Anti-Resonant Fibers in the Mid-IR
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2015 › Research › peer-review
Low-loss hollow-core silica fibers with adjacent nested anti-resonant tubes
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Mid-IR femtosecond frequency conversion by soliton-probe collision in phase-mismatched quadratic nonlinear crystals
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Supercontinuum generation in quadratic nonlinear waveguides without quasi-phase matching
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Tunable mid-infrared radiations in quadratic media through near-infrared soliton interactions with second-harmonic resonances
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2015 › Research › peer-review

Efficient femtosecond mid-infrared pulse generation by dispersive wave radiation in bulk lithium niobate crystal
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2014 › Research › peer-review

Efficient Femtosecond Mid-infrared Pulse Generation by Dispersive Wave Radiation in Bulk Lithium Niobate Crystal
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2014 › Research › peer-review

Few-cycle solitons and supercontinuum generation with cascaded quadratic nonlinearities in unpoled lithium niobate ridge waveguides
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Generating Efficient Femtosecond Mid-infrared Pulse by Single Near-infrared Pump Wavelength in Bulk Nonlinear Crystal Without Phase-matching
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2014 › Research › peer-review

High-energy pulse compressor using self-defocusing spectral broadening in anomalously dispersive media
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2014 › Research › peer-review

Highly coherent mid-IR supercontinuum by self-defocusing solitons in lithium niobate waveguides with all-normal dispersion
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Low-energy Self-defocusing Soliton Compression at Optical Communication Wavelengths in Unpoled Lithium Niobate Ridge Waveguide
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2014 › Research › peer-review

Nanoplasmonic solution for nonlinear optics
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2014 › Research › peer-review

Observation of an octave-spanning supercontinuum in the mid-infrared using ultrafast cascaded nonlinearities
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2014 › Research › peer-review
Octave-Spanning Mid-IR Supercontinuum Generation with Ultrafast Cascaded Nonlinearities
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2014 › Research › peer-review

Soliton-Induced nonlocal resonances observed through high-intensity tunable spectrally compressed second-harmonic peaks
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Nonlinear wave equation in frequency domain: accurate modeling of ultrafast interaction in anisotropic nonlinear media
Research output: Contribution to journal › Journal article – Annual report year: 2013 › Research › peer-review

Broadband Cherenkov Radiation by Using Group-velocity-matching in Index-guiding Photonic Crystal Fiber
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2013 › Research › peer-review

Completely background free broadband coherent anti-Stokes Raman scattering spectroscopy
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2013 › Research › peer-review

Cross-correlation frequency-resolved optical gating by molecular vibration for ultrashort pulse
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2013 › Research › peer-review

Directional Selective Nonlinear Transmission of Femtosecond Pulses in Glass-Metal Nanocomposites
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2013 › Research › peer-review

Few-cycle nonlinear mid-IR pulse generated with cascaded quadratic nonlinearities
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2013 › Research › peer-review

Generalized Nonlinear Wave Equation in Frequency Domain
Research output: Working paper › Working paper – Annual report year: 2013 › Research

Generating mid-IR octave-spanning supercontinua and few-cycle pulses with solitons in phase-mismatched quadratic nonlinear crystals
Research output: Contribution to journal › Journal article – Annual report year: 2013 › Research › peer-review

Near- and Mid-IR Few-cycle Self-defocusing Soliton Compression in PPLNWaveguide
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2013 › Research › peer-review

Near- and MID-IR few-cycle self-defocusing soliton compression in PPLN Waveguide
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2014 › Research › peer-review

Pressure tunable cascaded third order nonlinearity and temporal pulse switching
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2013 › Research › peer-review

Soliton Delay Driven by Cascading and Raman Responses
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2013 › Research › peer-review
Temporal switching induced by cascaded third order nonlinearity
Research output: Contribution to journal › Journal article – Annual report year: 2012 › Research › peer-review

Ultrafast and octave-spanning optical nonlinearities from strongly phase-mismatched cascaded interactions
Research output: Contribution to journal › Journal article – Annual report year: 2012 › Research › peer-review

Improved thermal and strain performance of annealed polymer optical fiber Bragg gratings
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review

Modulational instability and solitons in nonlocal media with competing nonlinearities
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review

Nonlocal quintic nonlinearity by cascaded THG in dispersive media
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2011 › Research › peer-review

Optical Cherenkov radiation by cascaded nonlinear interaction: an efficient source of few-cycle energetic near- to mid-IR pulses
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review

Optical Cherenkov radiation by cascaded nonlinear interaction: an efficient source of few-cycle near- to mid-IR pulses
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2011 › Research › peer-review

Sub-20 fs energetic near-IR pulses generated with cascaded soliton compression in short lithium niobate crystals
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2011 › Research › peer-review

Few-cycle femtosecond optical pulses in the visible and near-infrared: [invited]
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2010 › Research › peer-review

Generating energetic few-cycle pulses at 800 nm using soliton compression with type 0 cascaded quadratic interaction in lithium niobate
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2010 › Research › peer-review

Generating ultra-short energetic pulses with cascaded soliton compression in lithium niobate crystals
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2011 › Research › peer-review

Hvordan er universet sammensat?
Research output: Contribution to journal › Contribution to newspaper - Newspaper article – Annual report year: 2010 › Communication

Optical Cherenkov radiation in ultrafast cascaded second-harmonic generation
Research output: Contribution to journal › Journal article – Annual report year: 2010 › Research › peer-review

Scaling laws for soliton pulse compression by cascaded quadratic nonlinearities (vol 24, pg 2752, 2007)
Research output: Contribution to journal › Journal article – Annual report year: 2010 › Research › peer-review
Type-I cascaded quadratic soliton compression in lithium niobate: Compressing femtosecond pulses from high-power fiber lasers
Research output: Contribution to journal › Journal article – Annual report year: 2010 › Research › peer-review

Controlling the outcome: how extremely short laser pulses can help us in the future
Research output: Chapter in Book/Report/Conference proceeding › Book chapter – Annual report year: 2009 › Communication

Designing microstructured polymer optical fibers for cascaded quadratic soliton compression of femtosecond pulses
Research output: Contribution to journal › Journal article – Annual report year: 2009 › Research › peer-review

Dispersive waves in fs cascaded second-harmonic generation
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2009 › Research › peer-review

Cascaded quadratic soliton compression of high-power femtosecond fiber lasers in Lithium Niobate crystals
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2008 › Research › peer-review

Compression limits in cascaded quadratic soliton compression
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2008 › Research › peer-review

Controllable nonlocal behaviour by cascaded second-harmonic generation of fs pulses
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2008 › Research › peer-review

Limits to compression with cascaded quadratic soliton compressors
Research output: Contribution to journal › Journal article – Annual report year: 2008 › Research › peer-review

Accurate nonlocal theory for cascaded quadratic soliton compression
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2007 › Research › peer-review

Cascaded quadratic soliton compression at 800 nm
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2007 › Research › peer-review

Coherent imaging of a pure phase object with classical incoherent light
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2007 › Research › peer-review

Designing quadratic nonlinear photonic crystal fibers for soliton compression to few-cycle pulses
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2007 › Research › peer-review

Ghost imaging
Research output: Chapter in Book/Report/Conference proceeding › Book chapter – Annual report year: 2007 › Research › peer-review

Nonlocal explanation of stationary and nonstationary regimes in cascaded pulse compression
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2007 › Research › peer-review
Tuning quadratic nonlinear photonic crystal fibers for zero group-velocity mismatch
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2006 › Research › peer-review

Cavity soliton laser based on VCSEL with saturable absorber
Research output: Contribution to journal › Journal article – Annual report year: 2005 › Research › peer-review

Cavity solitons in a VCSEL with saturable absorber
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2005 › Research › peer-review

Classical and entangled ghost imaging schemes
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2005 › Research › peer-review

Entangled imaging in the large photon number regime
Research output: Contribution to journal › Journal article – Annual report year: 2005 › Research › peer-review

Ghost imaging with spatial averages: fast and broadband
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2005 › Research › peer-review

High resolution ghost image and ghost diffraction experiments with incoherent pseudo-thermal light
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2005 › Research › peer-review

High-resolution ghost imaging and ghost diffraction experiments with thermal light
Research output: Contribution to journal › Journal article – Annual report year: 2005 › Research › peer-review

High resolution ghost imaging experiments with classical thermal light
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2005 › Research › peer-review

Analysis of elliptically polarized states in vertical-cavity-surface-emitting lasers
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review

Correlated imaging, quantum and classical
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review

Correlated imaging with macroscopic fields
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review

Ghost imaging schemes: fast and broadband
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review

Ghost imaging using homodyne detection
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review
Ghost imaging with thermal light: comparing entanglement and classical correlation
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review

Simultaneous near-field and far-field spatial quantum correlations in the high gain regime of parametric down-conversion
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review

Single-shot detection of spatial quantum correlation in high-gain parametric down-conversion
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review

Nonclassical statistics of intracavity coupled chi((2)) waveguides: The quantum optical dimer
Research output: Contribution to journal › Journal article – Annual report year: 2003 › Research › peer-review

Observation of self-pulsing in singly resonant optical second-harmonic generation with competing nonlinearities
Research output: Contribution to journal › Journal article – Annual report year: 2002 › Research › peer-review

Quantum noise and spatio-temporal pattern formation in nonlinear optics

Quantum properties of transverse pattern formation in second-harmonic generation
Research output: Contribution to journal › Journal article – Annual report year: 2002 › Research › peer-review

Observation of self-pulsing in intracavity singly resonant second-harmonic generation with competing nonlinearities
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2002 › Research › peer-review

Spatiotemporal structures in the internally pumped optical parametric oscillator
Research output: Contribution to journal › Journal article – Annual report year: 2001 › Research › peer-review

Spiral intensity patterns in the internally pumped optical parametric oscillator
Research output: Contribution to journal › Journal article – Annual report year: 2001 › Research › peer-review

Spiral waves in optical second-harmonic generation
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2001 › Research

Modification of pattern formation in doubly resonant second
Research output: Contribution to journal › Journal article – Annual report year: 2000 › Research › peer-review

Modification of pattern formation in doubly resonant second-harmonic generation by competing parametric oscillation
Research output: Contribution to journal › Journal article – Annual report year: 2000 › Research › peer-review

Influence of competing parametric oscillation on pattern formation in second harmonic generation
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 1999 › Research

Instabilities and localized structures in cavity enhanced $\chi^{(2)}$-nonlinear processes
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 1999 › Research

Pattern formation in second harmonic generation with competing parametric oscillation
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 1999 › Research

Stationary space-periodic structures with equal diffusion coefficients
Research output: Contribution to journal › Journal article – Annual report year: 1999 › Research › peer-review
Projects:

Efficient mid-IR supercontinuum generation in quadratic nonlinear waveguides  
Project: PhD

Nanophotonics devices for ultra-fast nonlinear processes in the infrared  
Project: PhD

Supercontinuum generation with rugged femtosecond fibre lasers  
Project: PhD

Novel ultrafast mid-IR laser source for spectroscopy  
Project: Research

Ultrafast mid-IR nonlinear optics in gas-filled hollow-core photonic crystal fibers  
Project: PhD

Spatial solitons, vortices, and patterns in non-linear optical media  
Project: PhD

Hollow-core fibers for high power laser applications  
Project: PhD

Laser frequency standards based on gas-filled hollow-core fibres  
Project: PhD

2-10um mid-infrared supercontinuum light sources  
Project: PhD

High-intensity terahertz radiation for nonlinear spectroscopy at long wavelengths  
Project: PhD

Femtosecond few-cycle mid-infrared laser pulses  
Project: PhD

Cascaded Quadratic Soliton Compression in Waveguide Structures  
Project: PhD

Terabit/s Optical Regeneration  
Project: PhD

Nonlinear optical properties of ultra-thin metal layers  
Project: PhD

Continuous Wave Supercontinuum Light Sources based on Tapered Photonic Crystal Fibres  
Project: PhD

Femto-midIR: Femtosecond few-cycle mid-infrared laser pulses  
Project: Research
Nanostructured polymer photonic crystal fibers for effective second-harmonic generation
Project: Research

Cascaded Optical Pulse Compressor
Project: Research

Few-cycle femtosecond optical pulses in the visible and near-infrared
Project: Research

Activities:

Ultrafast mid-IR laser pulses - enabling new frontiers in science
Activity: Talks and presentations › Conference presentations

Ultrasound and broadband mid-IR pulses: challenges and solutions
Activity: Talks and presentations › Conference presentations

Reviews in Physics (Journal)
Activity: Editorial work and peer review › Journal editor › Research

Ultra-korte laserpulser i fremtidens forskning
Activity: Talks and presentations › Conference presentations

Generating ultra-short energetic pulses with cascaded soliton compression in lithium niobate crystals
Activity: Talks and presentations › Conference presentations

Phase-matching with a twist: Second-harmonic generation in birefringent periodically poled fibers (Journal)
Activity: Editorial work and peer review › Peer review of manuscripts › Research