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## TABLE OF CONTENTS

### Cleo: Qels-Fundamental Science Technical Sessions: Qma Novel Phenomena In Optics:

|   |           |
|---|-----------|
| <b>Electron Laguerre-Gaussian Beams.....</b>  | <b>1</b>  |
| <i>Benjamin Mcmorran</i>  |           |
| <b>Accelerating Light Beams Along Arbitrary Trajectories.....</b>                         | <b>3</b>  |
| <i>Elad Greenfield</i>  |           |
| <b>Broad Band Unidirectional Invisibility Using PT-Symmetry .....</b>                     | <b>5</b>  |
| <i>Hamidreza Ramezani</i>   |           |
| <b>Scale-Free Optics And Diffractionless Waves In Nano-Disordered Ferroelectrics.....</b> | <b>7</b>  |
| <i>Eugenio Delre</i>  |           |
| <b>Optical-Parametric-Amplification Imaging Of Complex Objects.....</b>                   | <b>9</b>  |
| <i>Peter Vaughan</i>  |           |
| <b>Scattering Phenomena In PT-Symmetric Optical Systems .....</b>                         | <b>11</b> |
| <i>Yidong Chong</i>   |           |

### QMB HIGH FIELD THZ AND STRONG COUPLING:

|   |           |
|---|-----------|
| <b>Transmission Coefficient Enhancement In Undoped Indium Arsenide By High Thz Field.....</b>                   | <b>13</b> |
| <i>Gurpreet Kaur</i>  |           |
| <b>Interaction Of Strong Terahertz Pulses With Exciton-Polaritons In Quantum-Well Microcavity .....</b>         | <b>15</b> |
| <i>Yun-Shik Lee</i>   |           |
| <b>THz Electro-Absorption Effect In Quantum Dots .....</b>  | <b>17</b> |
| <i>Dmitry Turchinovich</i>  |           |
| <b>Ultrafast Dynamics Of Semiconductor Interband Transitions In THz Fields Up To 4 MV/Cm .....</b>              | <b>19</b> |
| <i>Friederike Junginger</i>   |           |
| <b>High Field Transport Of Photo-Injected Electrons In Gaas: Transition From Ballistic To Drift Motion.....</b> | <b>21</b> |
| <i>Pamela Bowlan</i>  |           |
| <b>Light-Matter Strong Coupling In The Mid-Infrared Region With Metallic Microcavities .....</b>                | <b>23</b> |
| <i>Pierre Jouy</i>  |           |

### QMD SPATIOTEMPORAL DYNAMICS AND DISCRETE SYSTEMS:

|  |           |
|--|-----------|
| <b>Spatio-Temporal Nonlinear Optics In Arrays Of Subwavelength Waveguides .....</b>                | <b>25</b> |
| <i>Wei Ding</i>  |           |
| <b>Nonlinear Self-Trapping Of Broad Beams In Defocusing Lithium Niobate Waveguide Arrays .....</b> | <b>27</b> |
| <i>Dragomir Neshev</i>   |           |
| <b>Bandstructure Measurements Of Lithium Niobate Waveguide Arrays .....</b>                        | <b>29</b> |
| <i>Frank Setzpfandt</i>  |           |
| <b>Light Localization And Shockley Surface States In Honeycomb Photonic Lattices .....</b>         | <b>31</b> |
| <i>Zhigang Chen</i>  |           |
| <b>Observation Of Nonlinear Light Bullets In Waveguide Arrays.....</b>                             | <b>33</b> |
| <i>Falk Eilenberger</i>  |           |
| <b>Seeded Femtosecond Supercontinuum In Kr Gas .....</b>   | <b>35</b> |
| <i>Scott Webster</i>   |           |

### QME ULTRAFAST MAGNETISM:

|   |           |
|---|-----------|
| <b>Coherent Processes In The Ultrafast Magnetization Dynamics.....</b>                      | <b>37</b> |
| <i>Jean-Yves Bigot</i>  |           |
| <b>Ultrafast Non-Thermal Switching Of The Magnetization In (III,Mn)V Ferromagnets .....</b> | <b>39</b> |
| <i>Ilias Perakis</i>  |           |

|  |    |
|--|----|
| <b>Ultrafast Ferromagnetic-Paramagnetic Phase Transition In MnAs Observed By Second-Harmonic Generation.....</b> | 41 |
| <i>Christoph Lange</i>   |    |
| <b>Measuring The Terahertz Radiation From Optically Induced Spins In Diluted Magnetic Semiconductors.....</b>    | 43 |
| <i>Julien Madeo</i>  |    |

### **QMF ATOMS AND MOLECULES IN STRONG FIELDS:**

|  |    |
|--|----|
| <b>Measurement Of Laser-Induced Alignment Of Jet-Cooled Molecules Using Femtosecond Degenerate Four Wave Mixing.....</b> | 45 |
| <i>Varun Makhija</i>   |    |
| <b>Breakdown Of The Independent Electron Approximation In Sequential Double Ionization .....</b>                         | 47 |
| <i>Adrian Pfeiffer</i>   |    |
| <b>Ultraintense X-Ray Induced Multiple Ionization And Double Core-Hole Production In Molecules .....</b>                 | 49 |
| <i>Nora Berrah</i>   |    |
| <b>Influence Of Phase Matching Of The Cooper Minimum In Argon High Harmonic Spectra.....</b>                             | 51 |
| <i>Limor Spector</i>   |    |
| <b>Neutral Dissociation Of Simple Molecules In Strong Laser Field .....</b>  | 53 |
| <i>Ali Azarm</i>   |    |
| <b>Strong-Field Induced Optical Absorption In ZnO Crystal .....</b>  | 55 |
| <i>Shambhu Ghimire</i>   |    |

### **QMG ATTOSECOND SCIENCE:**

|  |    |
|--|----|
| <b>Resolving Attosecond Processes Via High Harmonic Generation .....</b>   | 57 |
| <i>Nirit Dudovich</i>  |    |
| <b>Probing AC Stark Shift With Attosecond Transient Absorption .....</b>   | 59 |
| <i>Michael Chini</i>   |    |
| <b>Attosecond Time-Resolved Autoionization.....</b>  | 61 |
| <i>He Wang</i>   |    |
| <b>Frequency-Tuned Isolated Attosecond Pulses Characterized By Both 750 Nm And 400 Nm Wavelength Streak Fields .....</b> | 63 |
| <i>Hiroki Mashiko</i>  |    |

### **QMH COHERENT PHENOMENA IN SEMICONDUCTORS:**

|   |    |
|---|----|
| <b>Giant AC Stark Shift In Germanium.....</b>   | 65 |
| <i>Kolja Kolata</i>   |    |
| <b>Optical Orientation In Bulk Germanium .....</b>  | 67 |
| <i>Christine Hautmann</i>   |    |
| <b>Transition From Amplified Spontaneous Emission To Superfluorescence From Biexcitons In Semiconductor Quantum Dots.....</b> | 69 |
| <i>Kensuke Miyajima</i>   |    |
| <b>Decay Dynamics Of Radiatively Coupled Quantum Dots In Photonic Crystal Slabs .....</b>                                     | 71 |
| <i>Philip Kristensen</i>  |    |
| <b>Two-Photon Resonance Spectroscopy Of Single Quantum-Dots.....</b>  | 73 |
| <i>Yael Benny</i>   |    |

### **QMI INTEGRATED NONLINEAR DEVICES:**

|   |    |
|---|----|
| <b>Continuous-Wave Second Harmonic Generation In Sub-Micron AlGaAs Waveguides .....</b>                                       | 75 |
| <i>David Duchesne</i>   |    |
| <b>Continuous-Wave Mid-Infrared Frequency Conversion In Silicon Nanowaveguides .....</b>                                      | 77 |
| <i>Ryan Lau</i>   |    |
| <b>Low-Power Continuous-Wave Generation Of Second- And Third-Harmonic Light In Silicon Photonic Crystal Nanocavities.....</b> | 79 |
| <i>Matteo Galli</i>   |    |

|  |    |
|--|----|
| <b>Four-Wave Mixing In Short Silicon Slow-Light Engineered Photonic Crystal Waveguides .....</b>                 | 81 |
| <i>Christian Grillet</i>   |    |
| <b>Observation Of Gain Due To Four-Wave-Mixing In Photonic Crystal Waveguides.....</b>                           | 83 |
| <i>Pierre Colman</i>   |    |
| <b>Intracavity Second Harmonic Generation In Quantum Cascade Lasers Pumped By Femtosecond Mid-IR Pulses.....</b> | 85 |
| <i>Sheng Liu</i>   |    |
| <b>Ultrafast Pulse Compression By Two-Photon Gain In A Semiconductor Waveguide .....</b>                         | 87 |
| <i>Amir Nevet</i>  |    |

### **QMJ HIGH FIELD-PLASMAS AND SOURCES:**

|  |     |
|--|-----|
| <b>Ultrafast Electron Diffraction Using Femtosecond Electron Pulses From Laser-Produced Plasmas.....</b> | 89  |
| <i>Shigeki Tokita</i>  |     |
| <b>CO2 Laser Driven Ion Acceleration In A Gas Jet.....</b>   | 91  |
| <i>Sergei Tochitsky</i>  |     |
| <b>Self-Injected Petawatt Laser-Driven Plasma Electron Acceleration In 1017 Cm-3 Plasma.....</b>         | 93  |
| <i>Xiaoming Wang</i>   |     |
| <b>Tripling Of Plasma Filament Length By Molecular Quantum Wakes In Atmosphere .....</b>                 | 95  |
| <i>Sanjay Varma</i>  |     |
| <b>Electron Density Of The Femtosecond Optical Filament In Air.....</b>                                  | 97  |
| <i>Yu-Hsin Chen</i>  |     |
| <b>Progress In Enhancement Cavities For XUV Generation.....</b>  | 99  |
| <i>Ioachim Pupeza</i>  |     |
| <b>Tailored Transverse Modes In High-Finesse Femtosecond Enhancement Cavities.....</b>                   | 101 |
| <i>Ioachim Pupeza</i>  |     |

### **QMK QUANTUM CONTROL IN SOLID-STATE SYSTEMS:**

|   |     |
|---|-----|
| <b>Ultrafast Optical Entanglement Control Between Two Quantum Dot Spins .....</b>                                   | 103 |
| <i>Samuel Carter</i>  |     |
| <b>Robust Optical Inversion Of The Excitonic Population Of Ingaas Quantum Dots Via Adiabatic Rapid Passage.....</b> | 105 |
| <i>Peter Brereton</i>   |     |
| <b>Chirp Controls Nonlinear Response Of Excitons In Semiconductor Quantum Wells.....</b>                            | 107 |
| <i>Ryan Smith</i>   |     |
| <b>Intensity Dependence Of Optically-Induced Injection Currents In Semiconductor Quantum Wells .....</b>            | 109 |
| <i>Torsten Meier</i>  |     |
| <b>Optical Lattices For Electrons In Semiconductors .....</b>   | 111 |
| <i>Carlo Piermarocchi</i>   |     |
| <b>Two Pulse Control Of Magnetization Precession In Ferrimagnetic Gdfe Films Under Low-Power Excitation.....</b>    | 113 |
| <i>Kazuhiro Nishibayashi</i>  |     |

### **QTUA FRONTIER APPLICATIONS OF PLASMONICS:**

|   |     |
|---|-----|
| <b>Mid-Infrared Direct Injection And Sub-Wavelength Focusing Of Designer's Surface Plasmons Polaritons.....</b> | 115 |
| <i>Adel Bousseksou</i>  |     |
| <b>Demonstration Of An Elliptical Plasmonic Lens Illuminated With Radially-Like Polarized Field .....</b>       | 117 |
| <i>Gilad Lerman</i>   |     |
| <b>Piezopotential Tuned Single Zno Micro Nanowire Photodetector .....</b>                                       | 119 |
| <i>Qing Yang</i>  |     |

### **THZ GENERATION AND PULSE DIAGNOSTICS:**

|   |     |
|---|-----|
| <b>Highly Simplified Device For Measuring The Intensity And Phase Of Picosecond Pulses.....</b> | 121 |
| <i>Peter Vaughan</i>  |     |

|   |     |
|---|-----|
| <b>Frequency-Domain Tomography Of Evolving Light-Velocity Objects.....</b>  | 123 |
| <i>Zhengyan Li</i>  |     |
| <b>Cross-Correlation Frequency-Resolved Optical Gating By Molecular Wakes For Ultraviolet Femtosecond Pulse Measurement .....</b> | 125 |
| <i>Haifeng Pan</i>  |     |
| <b>Single-Shot Multiple-Delay Crossed-Beam Spectral Interferometry For Measuring Extremely Complex Pulses .....</b>               | 127 |
| <i>Peter Vaughan</i>  |     |
| <b>Demonstration Of Terahertz Generation By Mixing Passively Q-Switched Dual-Frequency Nd:YLF Laser Pulses.....</b>               | 129 |
| <i>Yujie Ding</i>   |     |
| <b>Molecular Orientation And Alignment By Resonant Single-Cycle Thz Fields.....</b>   | 131 |
| <i>Sharly Fleischer</i>   |     |
| <b>Two-Dimensional Multi-Wave Mixing With High-Field Thz Transients In Insb .....</b>   | 133 |
| <i>Bernhard Mayer</i>   |     |

## **QTUC ULTRAFAST X-RAYS:**

|   |     |
|---|-----|
| <b>High-Harmonic Generation From Plasma Mirrors With Carrier-Envelope Phase-Controlled Few-Cycle Pulses .....</b> | 135 |
| <i>Antonin Borot</i>  |     |
| <b>Explosions Of Methane Clusters Driven By Intense X-Ray FEL Pulses.....</b>                                     | 137 |
| <i>Nirmala Kandadai</i>   |     |
| <b>XUV Femtosecond Pulse Width Characterization With A Laser-Based Terahertz-Field-Driven Streak Camera .....</b> | 139 |
| <i>Bernd Schütte</i>  |     |
| <b>Partial-Coherence Colored-Noise Approach To Model FEL Pulse Statistics.....</b>                                | 141 |
| <i>Thomas Pfeifer</i>   |     |
| <b>Powerful Attosecond Pulses From Relativistic Mirrors .....</b>   | 143 |
| <i>Matthew Zepf</i>   |     |
| <b>Spectral Linewidth Measurement Of An Injection-Seeded Transient 18.9 Nm Soft X-Ray Laser.....</b>              | 147 |
| <i>David Alessi</i>   |     |

## **QTUD THZ METAMATERIALS I:**

|   |     |
|---|-----|
| <b>Diffractive Coupling Engineered Sharp LC Resonance In Terahertz Metamaterials .....</b>                                  | 149 |
| <i>Ranjan Singh</i>   |     |
| <b>Temperature Tunable Behavior Of Planar Terahertz Metamaterials Fabricated On Bulk Strontium Titanate Substrates.....</b> | 151 |
| <i>Ranjan Singh</i>   |     |
| <b>Time- And Frequency-Domain Imaging Of Dynamics In Terahertz Meta-Atoms .....</b>   | 153 |
| <i>Juraj Darmo</i>  |     |
| <b>Three-Wave Mixing In Microwave Nonlinear Metamaterial .....</b>  | 155 |
| <i>Da Huang</i>   |     |
| <b>Extremely High Refractive Index Terahertz Metamaterial .....</b>   | 157 |
| <i>Seung Hoon Lee</i>   |     |
| <b>Metamaterial Based Terahertz Detector .....</b>  | 159 |
| <i>Andrew Strikwerda</i>  |     |
| <b>Magnetic Properties Of Asymmetric Double-Wire Structures .....</b>   | 161 |
| <i>Ekaterina Pshenay-Severin</i>  |     |

## **QTUE PLASMONIC OPTICAL DEVICES:**

|  |     |
|--|-----|
| <b>Optical Trapping At The Ultimate Nanoscale In The Near-Field Of Plasmonic Antennas.....</b> | 163 |
| <i>Olivier Martin</i>  |     |
| <b>An Integrated Plasmonic Polarimeter.....</b>  | 165 |
| <i>Farzaneh Afshinmanesh</i>   |     |

|   |     |
|---|-----|
| <b>High-Throughput Fabrication Of Plasmonic Nanoantenna Arrays Using Nanostencils For Spectroscopy And Biosensing .....</b> | 167 |
| <i>Serap Aksu</i>   |     |
| <b>Hybrid Plasmonic-Photonic Resonators For Sensing And Spectroscopy.....</b>   | 169 |
| <i>Maysamreza Chamanzar</i>   |     |
| <b>Integrated Electrochromic Nanoplasmonic Optical Switch .....</b>   | 171 |
| <i>Amit Agrawal</i>   |     |
| <b>Locally-Oxidized Silicon Surface-Plasmon Schottky Detector For Telecom Wavelengths .....</b>                             | 173 |
| <i>Ilya Goykhman</i>  |     |

#### **QTUF FREQUENCY COMBS AND CARRIER-ENVELOPE PHASE PHENOMENA:**

|   |     |
|---|-----|
| <b>Frequency Comb Generation In Crystalline MgF<sub>2</sub> Whispering-Gallery Mode Resonators .....</b>                  | 175 |
| <i>Tobias Herr</i>  |     |
| <b>Coherence Properties Of A Mid-Infrared Frequency Comb Produced By A Degenerate Optical Parametric Oscillator .....</b> | 177 |
| <i>Alireza Marandi</i>  |     |
| <b>Green Enhancement Cavity For Frequency Comb Generation In The Extreme Ultraviolet.....</b>                             | 179 |
| <i>Birgitta Bernhardt</i>   |     |
| <b>Second-Order Coherence Of Supercontinuum .....</b>   | 181 |
| <i>Goëry Genty</i>  |     |
| <b>Effect Of Carrier-Envelope Phase On Bound-State Atomic Excitation By Multi-Cycle Pulse .....</b>                       | 183 |
| <i>Pankaj Jha</i>   |     |
| <b>Passively Carrier-Envelope Phase Stable Mid-IR OPCPA Source At 100 KHz Repetition Rate .....</b>                       | 185 |
| <i>Alexandre Thai</i>   |     |
| <b>Few-Cycle CEP-Stable Source At 2.1 μm Based On Collinear OPA In Bib306.....</b>  | 187 |
| <i>Francisco Silva</i>  |     |

#### **QTUG INVISIBILITY AND ABSORBERS:**

|   |     |
|---|-----|
| <b>On The Isotropic Magnetic Response Of Fabricated Core-Shell Clusters And Its Ability To Cloak.....</b> | 189 |
| <i>Stefan Mühlig</i>  |     |
| <b>Three-Dimensional Newtonian Photorealistic Ray Tracing Of The Conformal Grating Cloak .....</b>        | 191 |
| <i>Martin Wegener</i>   |     |
| <b>Broadband Radiation-Absorbing Metamaterial .....</b>   | 193 |
| <i>Evguenii Narimanov</i>   |     |
| <b>Invisibility At Entire Visible Frequency Using Carbon Nanotube Carpet .....</b>                        | 195 |
| <i>Haofei Shi</i>   |     |
| <b>Three-Dimensional Invisibility Carpet Cloak At 700 nm Wavelength.....</b>                              | 197 |
| <i>Tolga Ergin</i>  |     |
| <b>Plasmonic Particles With Engineered Resonances - Superfilters And Superabsorbers .....</b>             | 199 |
| <i>Pavel Ginzburg</i>   |     |

#### **QTUH PLASMONIC FIELD ENHANCEMENT AND CONCENTRATION:**

|   |     |
|---|-----|
| <b>Surface Plasmon Resonances In Silver Bowtie Nanoantennas With Varied Bow Angles.....</b>   | 201 |
| <i>Wei Ding</i>   |     |
| <b>Plasmonic Junctions With Cucurbit[5]Uril ‘Glue’: Fabrication Of Precise Sub-Nm Junctions In Gold Nanoparticle Assemblies .....</b> | 203 |
| <i>Fumin Huang</i>  |     |
| <b>Simultaneous Nanometer And Femtosecond Spatiotemporal Control Of Optical Fields.....</b>   | 205 |
| <i>Samuel Berweger</i>  |     |
| <b>Hyperspectral Nanoscale Imaging On Dielectric Substrates With Coaxial Optical Antenna Scan Probes .....</b>                        | 207 |
| <i>Alexander Weber-Bargioni</i>   |     |
| <b>Coupled Mode Theory Of Field Enhancement In Complex Metal Nanoparticles .....</b>  | 209 |
| <i>Greg Sun</i>   |     |
| <b>Surface-Plasmon Coupled X-Apertures For Optical Field Enhancement And Localization .....</b>                                       | 211 |
| <i>Maxim Abashin</i>  |     |

|   |     |
|---|-----|
| <b>3D Imaging Of The Scattering Pattern Of Plasmonic Nanoantennas By Heterodyne Numerical Holography.....</b> | 213 |
| <i>Tessier Gilles</i>   |     |

### **QYUI COMPLEX MEDIA:**

|  |     |
|--|-----|
| <b>Ceramic Plasmonic Components For Optical Metamaterials.....</b>                   | 215 |
| <i>Gururaj Naik</i>  |     |
| <b>Nonlocality In Multilayered Metal-Dielectric Optical Metamaterials.....</b>       | 217 |
| <i>Alexey Orlov</i>  |     |
| <b>Anti-Mirror Effect.....</b>   | 219 |
| <i>Huanyang Chen</i>   |     |
| <b>Spin Symmetry Breaking In Thermal Emission .....</b>                              | 221 |
| <i>Erez Hasman</i>   |     |
| <b>Tight Binding Model Study Of Photonic One-Way Edge Mode .....</b>                 | 223 |
| <i>Kejie Fang</i>  |     |
| <b>Zero Phase Accumulation In Negative-Index Photonic Crystal Superlattices.....</b> | 225 |
| <i>Serdar Kocaman</i>  |     |
| <b>Optical Tractor Beams In Scattering-Induced Left-Handed Fields .....</b>          | 227 |
| <i>Alessandro Salandrino</i>   |     |

### **QTUJ QUANTUM MEASUREMENT AND METROLOGY:**

|  |     |
|--|-----|
| <b>Quantum-Light-Enhanced Optical Magnetometry .....</b>   | 229 |
| <i>Florian Wolfgramm</i>   |     |
| <b>Interaction-Based Quantum Metrology Giving A Scaling Beyond The Heisenberg Limit.....</b>                 | 231 |
| <i>Mario Napolitano</i>  |     |
| <b>Quantum Sensors, Computing, Metrology, And Imaging .....</b>  | 233 |
| <i>Jonathan Dowling</i>  |     |
| <b>Quantum Non-Demolition Measurements Of Light Via The Carrierenvelope Phase Of Mode-Locked Lasers.....</b> | 235 |
| <i>Sebastian Koke</i>  |     |
| <b>Light Shifts Of Ground-State Quantum Beats: A Monitor Of Quantum Jumps .....</b>                          | 237 |
| <i>Andres Cimmarusti</i>   |     |
| <b>Systematic Frequency Shifts In Spectroscopy Of 1s-2s Transition In Atomic Hydrogen.....</b>               | 239 |
| <i>Arthur Matveev</i>  |     |

### **OTUK OPTICAL PROCESSES IN GRAPHENE:**

|   |     |
|---|-----|
| <b>Very Slow Carrier Cooling In Graphene Measured By Optical/Thz Pump-Probe Spectroscopy .....</b>  | 241 |
| <i>Jared Strait</i>   |     |
| <b>Diffusion And Energy Relaxation Of Hot Carriers In Graphene .....</b>  | 243 |
| <i>Brian Ruzicka</i>  |     |
| <b>Observation Of The Relativistic Response Of An Electron-Hole Plasma In Graphene On Femtosecond Timescales .....</b>  | 245 |
| <i>Keshav Dani</i>  |     |
| <b>Interlayer Electronic Coupling Observed By Polarization Dependent Coherently Controlled Photocurrent Generation In Multilayer Epitaxial Graphene .....</b> | 247 |
| <i>Dong Sun</i>   |     |
| <b>Microscopic Study Of Carrier Multiplication In Graphene .....</b>  | 249 |
| <i>Torben Winzer</i>  |     |
| <b>Observation Of Image States In Graphene On Ir(111) By Two-Photon Photoemission.....</b>  | 251 |
| <i>Jerry Dadap</i>  |     |
| <b>Identifying Edge Chirality Of Graphene Using Polarization Resolved <math>\mu</math>-Raman Spectroscopy.....</b>  | 253 |
| <i>Milan Begliarbekov</i>   |     |

## **QTUL EXCITON AND CARRIER DYNAMICS IN NANOPHOTONIC SYSTEMS:**

|   |     |
|---|-----|
| All-Semiconductor Plasmonic System In Mid Infrared Range.....   | 255 |
| <i>Debin Li</i>   |     |
| Ultracompact Wavelength-Selective Silicon-Based Plasmonic Components .....  | 257 |
| <i>Hong Son Chu</i>   |     |
| Broadband Electrical Permittivity Of Gold For Plasmonics And Nano-Optics Applications.....  | 259 |
| <i>Robert Olmon</i>   |     |
| Space-And-Time-Resolved Spectroscopy Of Single Gan Nanowires.....   | 261 |
| <i>Prashanth Upadhyaya</i>  |     |
| Exciton-Photon Coupling Of Inas Quantum Dot In Gaas Photonic Crystal Mode-Gap Nanocavities.....   | 263 |
| <i>Jie Gao</i>  |     |
| Room-Temperature, High-Efficiency Conversion Of Mott-Wannier To Frenkel Excitons In Hybrid Semiconductor Quantum Dot/Polymer Composites ..... | 265 |
| <i>Sedat Nizamoglu</i>  |     |
| Strong Coupling Between Excitons In J Aggregates And Waveguide Modes In Thin Polymer Films.....   | 267 |
| <i>Tal Ellenbogen</i>   |     |

## **QTUM METATRONICS AND TRANSFORMATION OPTICS:**

|   |     |
|---|-----|
| Optical Metatronics .....   | 269 |
| <i>Nader Engheta</i>  |     |
| Fabrication Of Dielectric Aperiodic Nanostructured Luneburg Lens In Optical Frequencies.....              | 271 |
| <i>Satoshi Takahashi</i>  |     |
| Metamaterial Models Of Exotic Spacetimes.....   | 273 |
| <i>Igor Smolyaninov</i>   |     |
| The Cosmological Redshift Inside The Transformation-Optical Analogue Of The Robertson-Walker Metric ..... | 275 |
| <i>Vincent Ginis</i>  |     |

## **QTUN ULTRAFAST STRUCTURAL DYNAMICS AND COLLECTIVE PHENOMENA:**

|   |     |
|---|-----|
| Femtosecond X-Ray Powder Diffraction On KDP.....  | 277 |
| <i>Flavio Zamponi</i>   |     |
| Ultrafast Lattice Dynamics In Fs Laser-Excited Ferh Probed By Time-Resolved X-Ray Diffraction .....                       | 279 |
| <i>F. Quirin</i>  |     |
| Coherent Phonons In Polycrystalline Bismuth Film Monitored By Ultrafast Electron Diffraction .....                        | 281 |
| <i>Hani Elsayed-Ali</i>   |     |
| Generation And Detection Of Very Short-Wavelength Surface Acoustic Waves At Nano-Interfaces .....                         | 283 |
| <i>Qing Li</i>  |     |
| Coherent Control Of Gold Nanoparticles Formation.....   | 285 |
| <i>Cleber Mendonca</i>  |     |
| Ultrafast, Surface Plasmon Enhanced Strong-Field Photoemission With A Mid-IR OPCPA .....                                  | 287 |
| <i>Jens Biegert</i>   |     |
| Measuring The Lifetime Of Ultrashort Electronic Coherences With Long Light Pulses: The Fragile Eg State In Sb And Bi..... | 289 |
| <i>Jingjing Li</i>  |     |

## **QTUO SPIN COHERENCE:**

|   |     |
|---|-----|
| Spin-Wave Generation And Storage In A Solid State System .....                                | 291 |
| <i>Elizabeth Goldschmidt</i>  |     |
| Spin Polarization Of Single NV- Centers In Diamond After Non-Resonant Optical Excitation..... | 293 |
| <i>Anton Batalov</i>  |     |
| Quantum Control Of Electron Spins In Semiconductors With Phase-Locked Raman Pulse Pairs.....  | 295 |
| <i>Timothy Sweeney</i>  |     |
| Spatial And Temporal Dynamics Of Raman Coherence In Hydrogen-Filled HC-PCF .....              | 297 |
| <i>Yingying Wang</i>  |     |

|  |     |
|--|-----|
| <b>Spin Self-Rephasing And Very Long Coherence Times In Trapped Atomic Ensembles.....</b>                              | 299 |
| <i>Peter Rosenbusch</i>  |     |
| <b>Nuclear Spin Induced Collapse And Revival Shape Of Rabi Oscillations Of A Single Electron Spin In Diamond .....</b> | 301 |
| <i>Xinyu Pan</i>   |     |

### **QWA OPTICAL WAVEGUIDES AND QUANTUM INFORMATION SCIENCE:**

|  |     |
|--|-----|
| <b>New Photonic Components For Quantum Information Science.....</b>  | 303 |
| <i>Alberto Politi</i>  |     |
| <b>Generation Of Correlated Photons In An Integrated Chalcogenide As<sub>2</sub>S<sub>3</sub> Waveguide.....</b>                           | 305 |
| <i>Chunle Xiong</i>  |     |
| <b>Silicon-On-Insulator Microresonator-Based Source Of Frequency-Bin Entangled Comb Of Photon Pairs .....</b>                              | 307 |
| <i>Jun Chen</i>  |     |
| <b>Quantum Optics Of Spontaneous Four-Wave Mixing In A Silicon Nitride Microring Resonator .....</b>                                       | 309 |
| <i>L. Helt</i>   |     |
| <b>High-Performance Entangled Photon Pair Generation In Bragg Reflection Waveguides .....</b>  | 311 |
| <i>Sergei Zhukovsky</i>  |     |
| <b>Type II Parametric Downconversion In A Poled Fiber .....</b>  | 313 |
| <i>Eric Zhu</i>  |     |
| <b>Characterization Of High-Purity, Pulsed Squeezed Light At Telecom Wavelengths From Pp-KTP For Quantum Information Applications.....</b> | 315 |
| <i>Thomas Gerrits</i>  |     |

### **QWB QUANTUM COMPUTING AND METROLOGY WITH COLD MATTER:**

|   |     |
|---|-----|
| <b>Ultracold Molecules: Production Techniques And Scientific Applications .....</b> | 317 |
| <i>David Demille</i>  |     |
| <b>Spectroscopy Of Rydberg Atoms In A Ponderomotive Optical Lattice .....</b>       | 319 |
| <i>Georg Raithel</i>  |     |
| <b>Production Of Ultracold Molecular Ion.....</b>                                   | 321 |
| <i>Kuang Chen</i>   |     |
| <b>Momentum-Space Engineering Of Gaseous Bose-Einstein Condensates.....</b>         | 323 |
| <i>Charles Clark</i>  |     |

### **QWC EMISSION CONTROL WITH NANOOPTICS:**

|  |     |
|--|-----|
| <b>Unidirectional Emission Of A Quantum Dot Coupled To An Optical Nanoantenna.....</b>   | 325 |
| <i>Niek Van Hulst</i>  |     |
| <b>Enhancement Of Optical Emission By Coupled Metal Nanoparticles .....</b>  | 326 |
| <i>Greg Sun</i>  |     |
| <b>First Observation Of Raman Scattering Emission From Silicon High-Q Photonic Crystal Nanocavities .....</b>  | 328 |
| <i>Yasushi Takahashi</i>   |     |
| <b>Raman Antenna Formed By Molecule/Plasmonic Nanostructure Hybrid System.....</b>   | 330 |
| <i>Shiuan-Yeh Chen</i>   |     |
| <b>Nanophotonic Circular Dielectric Grating For Efficient Free-Space Extraction Of Single Quantum Dot Emission .....</b>   | 332 |
| <i>Marcelo Davanço</i>   |     |
| <b>Differentiating The Roles Of Surface Plasmon Polaritons In Excitation And Spontaneous Emission Rates And Outcoupling Efficiency Enhancement From Nanohole Arrays.....</b> | 334 |
| <i>Kay Fung Chan</i>   |     |

### **QWD STRONGLY CORRELATED ELECTRON SYSTEMS:**

|   |     |
|---|-----|
| <b>Large Strain-Induced Conductivity Anisotropy In VO<sub>2</sub> Thin Films Probed By Thz Spectroscopy .....</b> | 336 |
| <i>Elsa Abreu</i>   |     |

|  |     |
|--|-----|
| <b>Effect Of Phase-Transforming Medium On Coherent Electron Dynamics In Gold Nanoantennas .....</b>                    | 338 |
| <i>Kannatassen Appavoo</i>   |     |
| <b>Femtosecond Dynamics Of Superconducting And Spin-Density Wave Gaps In Pnictides.....</b>                            | 340 |
| <i>Kyungwan Kim</i>  |     |
| <b>Ultrafast Optical Spectroscopy Of Multiferroic Lufe2o4.....</b>   | 342 |
| <i>Jinho Lee</i>   |     |
| <b>Terahertz Frequency Magnetoelectric Phenomena In Condensed Matter .....</b>   | 344 |
| <i>Ryo Shimano</i>   |     |
| <b>Photoinduced Femtosecond Formation Of Ferromagnetism In A Strongly Correlated Antiferromagnetic Manganite .....</b> | 346 |
| <i>Jigang Wang</i>   |     |

### **QWE OPTOMECHANICAL SYSTEMS I:**

|   |     |
|---|-----|
| <b>Cavity Optomechanics.....</b>  | 348 |
| <i>Pierre Meystre</i>   |     |
| <b>Thermo-Optical Effects On The Transduction Of Mechanical Motion Of A Microspherical Pendulum.....</b>        | 374 |
| <i>Jonathan Ward</i>  |     |
| <b>Surface Optomechanics: Observation Of Surface Acoustic Resonances In Whispering Gallery Resonators .....</b> | 376 |
| <i>Gaurav Bahl</i>  |     |
| <b>Optomechanical Self-Channelling Of Light In Freely Suspended Dual-Planar-Waveguide Structure .....</b>       | 378 |
| <i>Anna Butsch</i>  |     |

### **QWF QUANTUM INTERFACE OF LIGHT AND MATTER:**

|  |     |
|--|-----|
| <b>Interfacing Single Photons From Dissimilar Sources .....</b>  | 380 |
| <i>Sergey Polyakov</i>   |     |
| <b>Enhanced Single Photon Emission By Diamond-Plasmon Nanostructures .....</b>                                   | 382 |
| <i>Jennifer Choy</i>   |     |
| <b>Preparation And Storage Of Frequency-Uncorrelated Entangled Photons From Cavity-Enhanced SPDC .....</b>       | 384 |
| <i>Jian Yang</i>   |     |
| <b>Photonic Zitterbewegung: Relativistic Physics In Waveguide Arrays .....</b>                                   | 386 |
| <i>Felix Dresow</i>  |     |
| <b>Observation Of A Red-Blue Detuning Asymmetry In Matter-Wave Superradiance .....</b>                           | 388 |
| <i>Lu Deng</i>   |     |
| <b>Canonical Quantization Of Macroscopic Electromagnetism And The Casimir-Lifshitz Effect .....</b>              | 390 |
| <i>Thomas Philbin</i>  |     |
| <b>Demonstration Of Statistical Mechanics Phase Transitions With Arrays Of Thousands Of Coherent Lasers.....</b> | 392 |
| <i>Eitan Ronen</i>   |     |

### **QWG OPTOMECHANICS AND OPTICAL FORCES:**

|   |     |
|---|-----|
| <b>Optical Bonding And Antibonding Forces In Asymmetric Geometries For Casimir Force Detection.....</b> | 394 |
| <i>David Woolf</i>  |     |
| <b>Nanoparticle Manipulation Using A Plasmonic Nano-Tweezer With An Integrated Heat Sink .....</b>      | 396 |
| <i>Kai Wang</i>   |     |
| <b>Photonic Crystal Dumbbell Cavity For Low-Power Opto-Mechanical Actuation .....</b>                   | 398 |
| <i>Wolfram Pernice</i>  |     |
| <b>Electrostatic Tuning Of Optomechanical Cavities To Semiconductor Quantum Dots.....</b>               | 400 |
| <i>Justin Cohen</i>   |     |
| <b>Optomechanical Coupling In A Two-Dimensional Photonic Crystal Defect Cavity .....</b>                | 402 |
| <i>Emanuel Gavartin</i>   |     |

### **QWH DYNAMICS IN NANOWIRES, RODS AND TUBES:**

|   |     |
|---|-----|
| <b>Acoustic Plasmons In Inas Nanowires .....</b>  | 404 |
| <i>Denis Seletskiy</i>  |     |
| <b>Ultrafast Optical-Pump Terahertz-Probe Spectroscopy Of Oriented Ge And Ge/Si Core/Shell Nanowires.....</b>     | 406 |
| <i>Momchil Mihnev</i>   |     |
| <b>Lasing In Zno Nanowires Is Electron-Hole Plasma Lasing.....</b>  | 408 |
| <i>Jaap Dijkhuis</i>  |     |
| <b>Femtosecond Excitation Of Confined Acoustic Modes In 2-D Arrayed Gan Nanorods .....</b>                        | 410 |
| <i>Hung-Pin Chen</i>  |     |
| <b>Motional Narrowing Of Dysonian Lineshape In Electron Spin Resonance Of Single-Walled Carbon Nanotubes.....</b> | 412 |
| <i>William Rice</i>   |     |
| <b>Tracking Charge Transfer In Carbon Nanotube Networks With Chirped Pump-Probe Spectroscopy .....</b>            | 414 |
| <i>Daniele Brida</i>  |     |
| <b>Splitting And Lasing Of Whispering Gallery Modes In Quantum Dot Micropillars.....</b>                          | 416 |
| <i>Mark Fox</i>   |     |

## **QWI OPTOMECHANICAL SYSTEMS II:**

|   |     |
|---|-----|
| <b>Long-Range Synchronization Of Optomechanical Structures.....</b>                                       | 418 |
| <i>Sasikanth Manipatruni</i>  |     |
| <b>Optical “Tractor Beams” With Nonconservative Forces .....</b>  | 421 |
| <i>Sergey Sukhov</i>  |     |
| <b>An Optically Pumped Phonon Laser In A Silicon Micromechanical Oscillator.....</b>                      | 423 |
| <i>Marcel Pruessner</i>   |     |
| <b>High Sensitivity Optical Refrigeration Spectroscopy: Local Cooling Of Yb:YLF Crystal To 110 K.....</b> | 425 |
| <i>Seth Meldgaard</i>   |     |
| <b>Sheet Optical Parametric Oscillator .....</b>  | 427 |
| <i>Zhenda Xie</i>   |     |
| <b>Trapping And Manipulating Aerosols With Optical Bottle Beams Generated By Moiré Technique .....</b>    | 429 |
| <i>Zhigang Chen</i>   |     |

## **QTHA ELECTRO-MAGNETIC METAMATERIALS:**

|  |     |
|--|-----|
| <b>Metamaterial Blazed Gratings.....</b>   | 431 |
| <i>Yu-Ju Tsai</i>  |     |
| <b>Passive Resonance Tuning Through Closely Spaced Coupled Split Ring Resonators .....</b>                 | 433 |
| <i>Matthew Reiten</i>  |     |
| <b>Funneling Light Through A Subwavelength Aperture Using Epsilon-Near-Zero Materials .....</b>            | 435 |
| <i>David Slocum</i>  |     |
| <b>Two-Dimensionally Isotropic High Index Metamaterials .....</b>  | 437 |
| <i>Bunki Min</i>   |     |
| <b>Highly Confined Hybrid Spoof Surface Plasmons In Ultra-Thin Metal/Dielectric Heterostructures .....</b> | 439 |
| <i>Hossein Mousavi</i>   |     |
| <b>On-Way Slow Light In Nonreciprocal Low-Symmetry Metamaterials .....</b>                                 | 441 |
| <i>Alexander Khanikaev</i>   |     |
| <b>Retarded-Interaction Magnetization Waves In Planar Splitring-Resonator Arrays.....</b>                  | 443 |
| <i>Manuel Decker</i>   |     |

## **OTHB SYMPOSIUM ON THE ZENO EFFECT IN OPTOELECTRONICS AND QUANTUM OPTICS I:**

|  |     |
|--|-----|
| <b>Zeno Or Anti-Zeno : Which Is More Useful?.....</b>  | 445 |
| <i>Gershon Kurizki</i>   |     |
| <b>Quantum Zeno Effect And Quantum Zeno Dynamics In Cavity Quantum Electrodynamics .....</b> | 447 |
| <i>Igor Dotsenko</i>   |     |
| <b>Optical 'Bistability' With Single Atom Absorbers .....</b>                                | 449 |
| <i>Joseph Kerckhoff</i>  |     |

|  |     |
|--|-----|
| <b>Organic Materials For Zeno-Based Optical Switching.....</b> | 451 |
| <i>Joseph Perry</i>  |     |
| <b>Quantum Logic Operations Using The Zeno Effect.....</b>     | 453 |
| <i>James Franson</i>   |     |

## **QTHC FUNDAMENTALS OF NANO-OPTICS AND PLASMONICS:**

|  |     |
|--|-----|
| <b>The Role Of Kinetic Inductance In Metal Optics.....</b>                                   | 455 |
| <i>Matteo Staffaroni</i>   |     |
| <b>Plasmonic Properties Of Metallic Nanoparticles: The Effects Of Size Quantization.....</b> | 457 |
| <i>Emily Townsend</i>  |     |
| <b>Organic Materials With Negative And Controllable Electric Permittivity.....</b>           | 459 |
| <i>Guohua Zhu</i>  |     |
| <b>Photon Drag Effect In Nanostructured Plasmonic Films.....</b>                             | 461 |
| <i>Andrey Yakim</i>  |     |
| <b>Temporal Coupled-Mode Theory For Resonant Apertures.....</b>                              | 463 |
| <i>Lieven Verslegers</i>   |     |
| <b>Wood's Anomaly In Arrays Of Highly Anisotropic Plasmonic Antennas .....</b>               | 465 |
| <i>Paul Kolb</i>   |     |
| <b>Super-Resolution Via Enhanced Evanescent Tunneling .....</b>                              | 467 |
| <i>Alessandro Salandrino</i>   |     |

## **QTHD DISCRETE OPTICS AND PERIODIC STRUCTURES:**

|   |     |
|---|-----|
| <b>Optical Tachyons, Broken PT-Symmetry, And Strain Effects In Photonic Graphene .....</b>        | 469 |
| <i>Alexander Szameit</i>  |     |
| <b>New Physics Of Subwavelength High Contrast Gratings.....</b>                                   | 471 |
| <i>Vadim Karagodsky</i>   |     |
| <b>Notch Nonlinear Frequency Shift In Algaas Bragg Grating Waveguides.....</b>                    | 473 |
| <i>Matteo Clerici</i>   |     |
| <b>Discrete Solitons In Photonic Lattices With Topological Defects .....</b>                      | 475 |
| <i>Matthias Heinrich</i>  |     |
| <b>Diverging Rabi Oscillations In Sub-Wavelength Photonic Lattices .....</b>                      | 477 |
| <i>Barak Alfassi</i>  |     |
| <b>Anderson Localization In Optical Waveguide Arrays With Off-Diagonal Coupling Disorder.....</b> | 479 |
| <i>Giovanni Di Giuseppe</i>   |     |
| <b>Observation Of Glauber-Fock Dynamics In Photonic Lattices .....</b>                            | 481 |
| <i>Armando Perez-Leija</i>  |     |

## **OTHE SINGLE PHOTONS: SOURCES AND DETECTORS:**

|   |     |
|---|-----|
| <b>Optical Fibre With Embedded Diamond Nanocrystals: Towards A High Collection Efficiency, Waveguided Single Photon Source.....</b> | 483 |
| <i>Matthew Henderson</i>  |     |
| <b>Sub-Nanosecond Electro-Optic Modulation Of Triggered Single Photons From A Quantum Dot .....</b>                                 | 485 |
| <i>Matthew Rakher</i>   |     |
| <b>Third-Order Antibunching From An Imperfect Single-Photon Source.....</b>   | 487 |
| <i>Martin Stevens</i>   |     |
| <b>Multi-Wavelength Pumping Technique For Up-Conversion Single-Photon Detectors .....</b>   | 489 |
| <i>Lijun Ma</i>   |     |
| <b>Accessing Photon Bunching With Photon Number Resolving Multi-Pixel Detector.....</b>   | 491 |
| <i>Leonid Krivitsky</i>   |     |
| <b>Full-Field Quantum Correlations With Multi-Pixel Detectors .....</b>   | 493 |
| <i>Ryan Warburton</i>   |     |
| <b>Cavity-Enhanced Nanowire Superconducting Single Photon Detectors On Gaas .....</b>   | 495 |
| <i>Alessandro Gaggero</i>   |     |

## **QTHF DISORDERED MATERIAL:**

|  |     |
|--|-----|
| Fabrication And Characterization Of 3D Deterministic Aperiodic Structures.....   | 497 |
| <i>Michael Renner</i>  |     |
| Hyper-Transport Of Light By Virtue Of Disorder .....   | 499 |
| <i>Liad Levi</i>   |     |
| Anderson Delocalization In One Dimensional $\mu$ Or $\epsilon$ -Near-Zero Metamaterial Stacks And Other Dispersion Effects On Localization ..... | 501 |
| <i>Ara Asatryan</i>  |     |
| Eigenmodes In A Randomly Disordered Medium .....   | 503 |
| <i>Wonjun Choi</i>   |     |
| Quantum Interference Of Multiple Beams Induced By Multiple Scattering.....   | 505 |
| <i>Johan Ott</i>   |     |
| Light Localization In Disordered Metamaterials.....  | 507 |
| <i>Salvatore Savo</i>  |     |
| Coupled Defect-Waveguides In Amorphous Photonic Lattices: Enhanced Coupling Through Randomness .....   | 509 |
| <i>Alexander Szameit</i>   |     |

## **QTHG SYMPOSIUM ON THE ZENO EFFECT IN OPTOELECTRONICS AND QUANTUM OPTICS II**

|  |     |
|--|-----|
| Zeno All-Optical Switching In A Silicon Ring Resonator Using Inverse Raman Scattering.....                           | 511 |
| <i>Henry Wen</i>   |     |
| All-Optical Switching In SU-8 Conductor-Gap-Dielectric Plasmonic Microring Resonator Using Thermal Nonlinearity..... | 513 |
| <i>David Perron</i>  |     |
| Nonlinear Optics Near The Single Photon Level With Quantum Dots .....  | 515 |
| <i>Edo Waks</i>  |     |
| A Compact Orbital Angular Momentum Spectrometer Using Quantum Zeno Interrogation .....                               | 517 |
| <i>Paul Bierdz</i>   |     |
| All-Optical Switching Via Inverse Raman Scattering In An Optical Fiber .....   | 519 |
| <i>Khanh Kieu</i>  |     |

## **QTHH NONLINEAR AND ULTRAFAST NANOPHOTONICS:**

|   |     |
|---|-----|
| Metamolecular Nonlinear Optics .....  | 521 |
| <i>Hannu Hsu</i>  |     |
| Multi-Photon Autocorrelation In Gold Nanostructures.....                                | 523 |
| <i>Daniele Brida</i>  |     |
| Ultrafast Observation Of Weak Coupling Effects In ZnO-Ag Heterostructures .....         | 525 |
| <i>Benjamin Lawrie</i>  |     |
| Silicon Based Ultrafast Active Plasmonics Near $1.5 \mu\text{m}$ .....                  | 527 |
| <i>Jan Niklas Caspers</i>   |     |
| Nonlinear Optics Of Magnetic Plasmonic Nanostructures .....                             | 529 |
| <i>Irina Kolmychek</i>  |     |
| Ultrasensitive On-Chip Photonic Crystal Nanobeam Sensor Using Optical Bistability ..... | 531 |
| <i>Qimin Quan</i>   |     |
| Picosecond Few-Fermion Dynamics Of A Single Self-Assembled InGaAs Quantum Dot.....      | 533 |
| <i>Markus Betz</i>  |     |

## **QTHI OPTICAL FILAMENTATION AND RELATED NONLINEAR PHENOMENA:**

|  |     |
|--|-----|
| Energy Exchange Between Two Filaments In Air Via A Traveling Plasma Grating..... | 535 |
| <i>Magali Durand</i>   |     |

|   |     |
|---|-----|
| <b>Spontaneous Currents Inside Air Filaments .....</b>  | 537 |
| <i>Aurélien Houard</i>  |     |
| <b>Measurement And Control Of Electric Currents In Ar And N<sub>2</sub> Filaments .....</b>                                   | 539 |
| <i>Aurélien Houard</i>  |     |
| <b>Multi-Dimensional Plasma Grating From Filament Interaction In Air.....</b>   | 541 |
| <i>Haifeng Pan</i>  |     |
| <b>Direct Comparison Of High-Order Harmonics Generated In Gas And In Carbon Plasma .....</b>                                  | 543 |
| <i>Yoann Pertot</i>   |     |
| <b>Sub-1mJ Over-Two-Octave White-Light Continuum Generated By Induced Phase Modulation In Argon-Filled Hollow Fiber .....</b> | 545 |
| <i>Shaobo Fang</i>  |     |
| <b>Distinguishing Instantaneous From Rotational Kerr Response In Air Using Supercontinuum Spectral Interferometry .....</b>   | 547 |
| <i>Jared Wahlstrand</i>   |     |

### **QTHJ QUANTUM STORAGE AND FREQUENCY ENTANGLEMENT:**

|   |     |
|---|-----|
| <b>Single-Photon-Level Memory At Room Temperature.....</b>  | 549 |
| <i>Klaus Reim</i>   |     |
| <b>Free-Space Photon Storage With Variable Time Delays.....</b>                                   | 551 |
| <i>Bradley Christensen</i>  |     |
| <b>Extending Quantum Optical Benchmarks With Entanglement Measures .....</b>                      | 553 |
| <i>Nathan Killoran</i>  |     |
| <b>Cold Atoms Coupled To A Superconducting Flux Qubit.....</b>                                    | 555 |
| <i>Jeffrey Grover</i>   |     |
| <b>Demonstration Of A Scalable Multi-Photon Entanglement Source .....</b>                         | 557 |
| <i>Eli Megidish</i>   |     |
| <b>Scaling Multipartite Entanglement In The Optical Frequency Comb .....</b>                      | 559 |
| <i>Matthew Pysher</i>   |     |
| <b>Interference Of Two Photons Of Different Color With Applications To Quantum Computing.....</b> | 561 |
| <i>Michael Raymer</i>   |     |

### **QTHK TUNABLE AND FLUID METAMATERIALS:**

|  |     |
|--|-----|
| <b>Tuning The Resonance In Superconducting Terahertz Metamaterials .....</b>   | 563 |
| <i>Hou-Tong Chen</i>   |     |
| <b>Reconfigurable Photonic Metamaterials.....</b>  | 565 |
| <i>Jun-Yu Ou</i>   |     |
| <b>Dynamic Tunability Of The Electric Dipole Resonance In Highly Photoexcited Metamaterials.....</b>                                     | 567 |
| <i>Ioannis Chatzakis</i>   |     |
| <b>Terahertz Superconducting Plasmonics And Metamaterials.....</b>   | 569 |
| <i>Ranjan Singh</i>  |     |
| <b>Light-Induced Reflectance Changes In A Natural Photonic Structure And Measurement Of The Opto-Thermal Coefficient Of Chitin .....</b> | 571 |
| <i>Alain Hache</i>   |     |
| <b>Isotropic Lasing From Self-Assembled Cholesteric Microdroplets.....</b>   | 574 |
| <i>Matjaz Humar</i>  |     |
| <b>A Fluid Metamaterial With Tunable Anisotropy.....</b>   | 576 |
| <i>Mohammad Mayy</i>   |     |

### **QTHL POSITIONING, COUPLING AND FOCUSING IN NANOPHOTONIC SYSTEMS:**

|  |     |
|--|-----|
| <b>On-Chip Focusing Of Light By Metallic Nanotip .....</b>   | 578 |
| <i>Boris Desiatov</i>  |     |
| <b>Polymer Plasmonic Microring Resonators Based On Conductor-Gap-Dielectric Waveguides .....</b>             | 580 |
| <i>Cameron Horvath</i>   |     |
| <b>Using Local Fields To Tailor Hybrid Quantum Dot-Metal Nanoparticle Systems: Connecting The Dots .....</b> | 582 |
| <i>Garnett Bryant</i>  |     |

|  |     |
|--|-----|
| <b>Optical Forces In Scanning Probe Microscopy .....</b>   | 584 |
| <i>Sergey Sukhov</i>   |     |
| <b>Slow-Light Enhanced Absorption Switches In Metal-Dielectric-Metal Plasmonic Waveguides.....</b> | 586 |
| <i>Georgios Veronis</i>  |     |
| <b>Deterministic Nano-Manipulation Of Single Photon Sources For Integration.....</b>               | 588 |
| <i>Chad Ropp</i>   |     |

### **QTHM QUANTUM OPTICS IN CAVITIES AND WAVEGUIDES:**

|  |     |
|--|-----|
| <b>Optomechanically Induced Transparency.....</b>  | 590 |
| <i>Albert Schliesser</i>   |     |
| <b>Measuring Nanomechanical Motion With An Imprecision Below That At The Standard Quantum Limit .....</b>                    | 592 |
| <i>Pierre Verlot</i>   |     |
| <b>Resolved Sideband Laser Cooling Of A Cryogenic Micromechanical Membrane.....</b>  | 594 |
| <i>Andrew Jayich</i>   |     |
| <b>On-Chip Single Crystal Diamond Resonators.....</b>  | 596 |
| <i>Birgit Hausmann</i>   |     |
| <b>Ultra-High Finesse, Low Mode Volume Fabry-Perot Microcavity.....</b>  | 598 |
| <i>Edward Flagg</i>  |     |
| <b>Observation Of Strong Coupling Through Transmission Modification Of A Cavity-Coupled Photonic Crystal Waveguide .....</b> | 600 |
| <i>Ranojoy Bose</i>  |     |
| <b>Photon Correlations In Multi-Cavity Nonlinear Systems .....</b>   | 602 |
| <i>Dario Gerace</i>  |     |

### **QTHN QUANTUM PHOTONICS:**

|  |     |
|--|-----|
| <b>An Easy Road To High NOON .....</b>   | 604 |
| <i>Yaron Silberberg</i>  |     |
| <b>Type-0 Spontaneous Parametric Down Conversion In Algaas Bragg Reflection Waveguides. ....</b>                         | 606 |
| <i>Rolf Horn</i>   |     |
| <b>Enhancement Of Two Photon Processes In Quantum Dots Embedded In Subwavelength Metallic Gratings.....</b>              | 608 |
| <i>Moshe Harats</i>  |     |
| <b>Generation And Verification Of Traveling-Wave Phase-Sensitive Eigenmodes Of An Optical Parametric Amplifier .....</b> | 610 |
| <i>Amar Bhagwat</i>  |     |
| <b>Improvement Of Image Resolution Beyond Classical Limit By Phase-Sensitive Optical Parametric Amplifier .....</b>      | 612 |
| <i>Zun Huang</i>   |     |
| <b>Single-Photon Tunneling Delay In A Nematic Liquid-Crystal Frustrated-Total-Internal-Reflection Structure.....</b>     | 614 |
| <i>George Gehring</i>  |     |

### **QTHO FUNDAMENTAL TOPICS IN QUANTUM SCIENCE:**

|   |     |
|---|-----|
| <b>On The Optimal Choice Of States For Process Tomography .....</b>   | 616 |
| <i>Lee Rozema</i>   |     |
| <b>Finding Decoherence Free Subspaces Without Process Tomography.....</b>   | 618 |
| <i>Dylan Mahler</i>   |     |
| <b>Experimental Demonstration Of Decoherence Suppression By Quantum Measurement Reversal .....</b>                    | 620 |
| <i>Jong-Chan Lee</i>  |     |
| <b>Experimental Implementation Of The Universal Transpose Operation Using Structural Physical Approximation .....</b> | 622 |
| <i>Hyang-Tag Lim</i>  |     |
| <b>Quasiprobability Representations Of Quantumness .....</b>  | 624 |
| <i>Werner Vogel</i>   |     |

|  |     |
|--|-----|
| <b>Extracting An Entanglement Signature From Only Classical Mutual Information .....</b> | 626 |
| <i>David Starling</i>  |     |

### **QTHP HYPERBOLIC AND ANISTROPIC METAMATERIAL:**

|  |     |
|--|-----|
| <b>Optical Devices Based On Cylindrically Anisotropic Metamaterials.....</b>                                 | 628 |
| <i>Huikan Liu</i>  |     |
| <b>Transverse Electro-Magnetic Modes In Apertures Filled With An Extreme Anisotropic Meta-Material .....</b> | 630 |
| <i>Peter Catrysse</i>  |     |
| <b>Broadband Engineering Of Quantum Dot Spontaneous Emission Using Flat Dispersion Metamaterial .....</b>    | 632 |
| <i>Harish Krishnamoorthy</i>   |     |
| <b>Dipole Radiation Near Hyperbolic Metamaterials: Applicability Of Effective Medium Approximation.....</b>  | 634 |
| <i>Omar Kidwai</i>   |     |
| <b>Spontaneous Emission Near Hyperbolic Metamaterials .....</b>  | 636 |
| <i>Zubin Jacob</i>   |     |
| <b>Effect Of Metallic And Hyperbolic Metamaterial Surface On Electric And Magnetic Dipole Emission .....</b> | 638 |
| <i>Xingjie Ni</i>  |     |

### **QTHQ PLASMON OPTICS:**

|  |     |
|--|-----|
| <b>Off-Axis And Multi-Directional Plasmonic Lenses.....</b>  | 640 |
| <i>Romain Blanchard</i>  |     |
| <b>Gold Nanoslit Lenses .....</b>  | 642 |
| <i>Satoshi Ishii</i>   |     |
| <b>Tailoring Polarization State Of Spoof Surface Plasmons With Chiral Metal Surfaces .....</b>                         | 644 |
| <i>Alexander Khanikaev</i>   |     |
| <b>Optically Controlled Ultrafast Enhanced Transmission From A Sub-Wavelength Aperture In A Planar Metal Film.....</b> | 646 |
| <i>Mohamed Swillam</i>   |     |
| <b>Polychromatic Nanofocusing Of Surface Plasmons .....</b>  | 648 |
| <i>Wei Liu</i>   |     |
| <b>Generation And Near-Field Imaging Of Airy Plasmons .....</b>  | 650 |
| <i>Dragomir Neshev</i>   |     |

### **QTHR QUANTUM OPTICS WITH QUANTUM DOTS:**

|   |     |
|---|-----|
| <b>Optically Induced Rotation Of A Quantum Dot Exciton Spin.....</b>  | 652 |
| <i>Hyochul Kim</i>  |     |
| <b>Strong Interaction Between Quantum Dot Exciton Spin States And A Photonic Crystal Cavity .....</b>                     | 654 |
| <i>Hyochul Kim</i>  |     |
| <b>Off-Resonant Quantum Dot-Cavity Interaction .....</b>  | 656 |
| <i>Arka Majumdar</i>  |     |
| <b>Intensity Damping Of Rabi-Oscillations And Renormalization Of The Rabi Frequency In Ingaas/Gaas Quantum Dots .....</b> | 658 |
| <i>Timothy Godden</i>   |     |
| <b>Fast High Fidelity Hole Spin Initialization In A Single Ingaas Quantum Dot.....</b>                                    | 660 |
| <i>Timothy Godden</i>   |     |
| <b>High-Speed Electrical Control Of A Solid-State Photonic Quantum Interface.....</b>                                     | 662 |
| <i>Antoine Boyer De La Giroday</i>  |     |
| <b>Optically Generated 2-Dimensional Photonic Cluster State From Coupled Quantum Dots.....</b>                            | 664 |
| <i>Sophia Economou</i>  |     |

### **QTHS LINEAR AND NONLINEAR WAVE PROPAGATION:**

|   |     |
|---|-----|
| <b>Abruptly Autofocusing Waves.....</b> | 666 |
| <i>Nikolaos Efremidis</i>               |     |

|  |     |
|--|-----|
| <b>Demonstration Of A Second-Order Nonlinear Silica Fiber Taper With Self-Assembled Organic Surface Layers .....</b> | 668 |
| <i>Chalongrat Daengngam</i>  |     |
| <b>18-Fold Power Reduction Using Bragg Grating-Based Switch In Highlynonlinear Bismuth-Oxide Fiber.....</b>          | 670 |
| <i>Irina Kabakova</i>  |     |
| <b>Sub-Natural Raman Linewidth And High Power CW Raman-Stokes Laser In Hydrogen Filled HC-PCF .....</b>              | 672 |
| <i>Meshael Alharbi</i>   |     |
| <b>Interferometry With Vacuum-Amplified Waveforms .....</b>  | 674 |
| <i>Utsab Khadka</i>  |     |
| <b>Time-Reversed Lasing And Control Of Absorption In A Two-Channel Coherent Perfect Absorber.....</b>                | 676 |
| <i>Wenjie Wan</i>  |     |
| <b>Observation Of Auto-Focusing Radially Symmetric Airy Beams .....</b>  | 678 |
| <i>Zhigang Chen</i>  |     |

### **QHT QUANTUM COMMUNICATION AND MULTIPARTITE ENTAGLEMENT:**

|  |     |
|--|-----|
| <b>Continuous Variable Quantum Communication And Computation.....</b>                                | 680 |
| <i>Ulrik Andersen</i>  |     |
| <b>Preparation And Local Manipulation Of Photonic W States Using Expansion And Fusion Gates.....</b> | 681 |
| <i>Sahin Ozdemir</i>   |     |
| <b>Layered Architectural Design With Photonic Qubit Topological Cluster State Computation .....</b>  | 683 |
| <i>Bhaskar Roy Bardhan</i>   |     |
| <b>Projection Of Two Biphoton Qutrits Onto A Maximally Entangled State .....</b>                     | 685 |
| <i>Assaf Halevy</i>  |     |
| <b>Conservation Of Vacuum In An Interferometer.....</b>  | 687 |
| <i>Dominic Berry</i>   |     |
| <b>Two-Way Secure Communication Using Quantum Illumination.....</b>                                  | 689 |
| <i>Maria Tengner</i>   |     |

### **QFA PLASMONIC METAMATERIALS:**

|   |     |
|---|-----|
| <b>Multi-Spectral Plasmon Induced Transparency With Hybridized Metamaterials .....</b>              | 691 |
| <i>Alp Artar</i>  |     |
| <b>Towards 3D Plasmon Rulers .....</b>  | 693 |
| <i>Na Liu</i>   |     |
| <b>Fano Resonances In Reduced Symmetry Metamaterials .....</b>                                      | 695 |
| <i>Chihhui Wu</i>   |     |
| <b>Maxwell Fisheye And Eaton Lenses Emulated By Microdroplets.....</b>                              | 697 |
| <i>Igor Smolyaninov</i>   |     |
| <b>Plasmonic Oligomers: The Role Of Individual Particles In Collective Behavior .....</b>           | 699 |
| <i>Mario Hentschel</i>  |     |
| <b>Experimental Observation Of Field Enhancement At The Negative-Positive Index Interface .....</b> | 701 |
| <i>Igor Smolyaninov</i>   |     |

### **QFB PLASMONICS AND NOVEL STRUCTURES:**

|  |     |
|--|-----|
| <b>Optical Antennas For Enhanced Light Absorption And Emission .....</b>                             | 703 |
| <i>Lukas Novotny</i>   |     |
| <b>Towards Unraveling The Mechanism Of Third Harmonic Generation In Plasmonic Nanoantennas .....</b> | 704 |
| <i>Mario Hentschel</i>   |     |
| <b>Nanoantenna-Enhanced Ultrafast Nonlinear Spectroscopy Of A Single Plasmonic Nanodisc .....</b>    | 706 |
| <i>Thorsten Schumacher</i>   |     |
| <b>Real-Time And Real-Space Observation Of Plasma Oscillation In Gaas .....</b>                      | 708 |
| <i>Hui Zhao</i>  |     |
| <b>The Ultrafast Nonlinear Optical Properties Of Induced Transmission Filters .....</b>              | 710 |
| <i>Canek Fuentes-Hernandez</i>   |     |

|  |     |
|--|-----|
| <b>Near-Field Observation Of Zero Index Bandgaps In Negative Refraction Photonic Superlattices</b> | 712 |
| <i>Pin-Chun Hsieh</i>  |     |

### **QFC NANOPHOTONIC AND PLASMONIC CONFINEMENT:**

|   |     |
|---|-----|
| <b>Octave-Wide Photonic Band Gap In Three-Dimensional Plasmonic Bragg Structures</b>              | 714 |
| <i>Richard Taubert</i>  |     |
| <b>Nano-Structured Optical Nanofibers For Cavity-Qed</b>  | 716 |
| <i>Kali Nayak</i>   |     |
| <b>Experimental Verification Of The "Rainbow" Trapping Effect In Adiabatic Plasmonic Gratings</b> | 718 |
| <i>Qiaoqiang Gan</i>  |     |
| <b>Phonon-Mediated Exciton-Photon Coupling In Site-Controlled Quantumdot-Nanocavity Systems</b>   | 720 |
| <i>Milan Calic</i>  |     |
| <b>Dressing Plasmons In Particle-In-Cavity Architectures</b>                                      | 722 |
| <i>Fumin Huang</i>  |     |
| <b>A High-Q Exterior Plasmonic Whispering Gallery Mode In A Metal-Coated Microresonator</b>       | 724 |
| <i>Yun-Feng Xiao</i>  |     |

### **QFD QUANTUM IMAGING AND PHASE ESTIMATION:**

|   |     |
|---|-----|
| <b>Quantum Spatial Super-Resolution By The Optical Centroid Measurement Method</b>      | 726 |
| <i>Heedeuk Shin</i>   |     |
| <b>Correlated Imaging With Aberration Cancellation</b>                                  | 728 |
| <i>Alexander Sergienko</i>  |     |
| <b>The First Ghost Image Using Sun As A Light Source</b>                                | 730 |
| <i>Sanjit Karmakar</i>  |     |
| <b>Fundamental Quantum Limit To Waveform Estimation</b>                                 | 732 |
| <i>Mankei Tsang</i>   |     |
| <b>Squeezing-Enhanced Adaptive Optical Phase Estimation</b>                             | 734 |
| <i>Hidehiro Yonezawa</i>  |     |
| <b>Two-Mode Squeezed Vacuum: Phase Estimation And Parity Detection</b>                  | 736 |
| <i>Petr Anisimov</i>  |     |
| <b>Observation Of Young's Double-Slit Interference With The Three-Photon NOON State</b> | 738 |
| <i>Yong-Su Kim</i>  |     |

### **QFE ACTIVE PLASMONICS:**

|  |     |
|--|-----|
| <b>Intraband Optical Transitions In Graphene</b>   | 740 |
| <i>Feng Wang</i>   |     |
| <b>Interaction Between Metamaterial Resonators And Intersubband Transitions In Quantum Wells</b> | 742 |
| <i>Alon Gabbay</i>   |     |
| <b>Time Domain Model Of A Gain Medium Fitted To Pump-Probe Experiments</b>                       | 744 |
| <i>Alexander Kildishev</i>   |     |
| <b>Photonic Crystal Nanolasers, Modulation And Coherence Characteristics</b>                     | 746 |
| <i>Alexios Beveratos</i>   |     |
| <b>Optical Amplification Of Propagating Surface Plasmon Polaritons</b>                           | 748 |
| <i>Kristjan Leosson</i>  |     |
| <b>Surface Plasmon Assisted Stimulated Emission On Smooth And Corrugated Silver Surfaces</b>     | 750 |
| <i>Guohua Zhu</i>  |     |

### **QFF SOLITONS AND NONLINEAR WAVES:**

|  |     |
|--|-----|
| <b>Peregrine Soliton In Optical Fiber-Based Systems</b>  | 752 |
| <i>Kamal Hammami</i>   |     |
| <b>Time- And Frequency-Domain Measurements Of Solitons In Subwavelength Silicon Waveguides Using Cross-Correlation</b> | 754 |
| <i>Wei Ding</i>  |     |

|   |     |
|---|-----|
| <b>Loss Of Phase In The Interaction Of Two Collapsing Beams.....</b>                  | 756 |
| <i>Bonggu Shim</i>  |     |
| <b>Magnetic Field Effects And Landau Solitons In Strained Photonic Graphene .....</b> | 758 |
| <i>Mikael Rechtsman</i>   |     |
| <b>Spectral Properties Of Laser Solitons In Coupled Semiconductor Resonators.....</b> | 760 |
| <i>Patrice Genevet</i>  |     |
| <b>Emergence Of Rogue Waves From Optical Turbulence .....</b>                         | 762 |
| <i>Kamal Hammami</i>  |     |
| <b>Can Quadratic Solitons Self-Accelerate?.....</b>                                   | 764 |
| <i>Ido Kaminer</i>  |     |

### **QFG SINGLE PHOTON NANO-OPTICS:**

|   |     |
|---|-----|
| <b>Ultra-Bright And Efficient Single Photon Generation Based On Integrated Nanodiamonds Containing Single Defect Centers.....</b> | 766 |
| <i>Tim Schröder</i>   |     |
| <b>Efficient Single Photon Source At Telecommunication Wavelength.....</b>  | 768 |
| <i>Alexios Beveratos</i>  |     |
| <b>Plasmonic Apertures: A Scalable Plasmonic Architecture For Enhanced Diamond Single Photon Sources.....</b>                     | 770 |
| <i>Irfan Bulu</i>   |     |
| <b>Single Photons Emitted By Single Quantum Dots Into Waveguides: Photon Guns On A Chip .....</b>                                 | 772 |
| <i>Thang Hoang</i>  |     |
| <b>Manipulation Of Coupling Between Individual Nanoparticles.....</b>   | 774 |
| <i>Daniel Ratchford</i>   |     |
| <b>Nanocavity Enhanced Diamond Nitrogen-Vacancy Center Zero Phonon Line Emission .....</b>  | 776 |
| <i>Paul Barclay</i>   |     |
| <b>Photon Antibunching From Diamond Nitrogen-Vacancy Centers Inside A Dielectric Micropillar Cavity.....</b>                      | 778 |
| <i>Katja Beha</i>   |     |

### **QFH ION TRAPS AND NANOMECHANICAL SYSTEMS:**

|  |     |
|--|-----|
| <b>A Cavity QED-Ion Trap System For A Scalable Quantum Network.....</b>  | 780 |
| <i>Le Luo</i>  |     |
| <b>Microfabricated Surface Trap For Scalable Ion-Photon Interfaces.....</b>  | 781 |
| <i>Shannon Wang</i>  |     |
| <b>Experimental Repetitive Quantum Error Correction With Trapped Ions.....</b>                                     | 783 |
| <i>Markus Hennrich</i>   |     |
| <b>Quantum Optomechanical Measurement Of The Phonon Number Dynamics Of A Mesoscopic Mechanical Resonator .....</b> | 784 |
| <i>Adil Gangat</i>   |     |
| <b>Controlled Optomechanical Quantum Phase Gate Of Phonon States .....</b>   | 786 |
| <i>Jing Shu</i>  |     |
| <b>Cooling Of A Micromechanical Oscillator Into The Quantum Regime.....</b>  | 788 |
| <i>Stefan Weis</i>   |     |

### **CLEO: SCIENCE & INNOVATIONS TECHNICAL SESSIONS:**

#### **CMA EFFICIENCY ENHANCEMENT BY PATTERNING:**

|  |     |
|--|-----|
| <b>Light Extraction Methods In Light-Emitting Diodes .....</b>   | 790 |
| <i>Jonathan Wierer</i>   |     |
| <b>Extraction Efficiency Improvement Of Gan Light-Emitting Diode Using Sub-Wavelength Nanoimprinted Patterns On Sapphire Substrate .....</b> | 792 |
| <i>Hao Chen</i>  |     |
| <b>Impact Of The Vertical Layer Structure On The Emission Directionality Of Thin-Film Ingan Photonic Crystal Leds .....</b>                  | 794 |
| <i>Elizabeth Rangel</i>  |     |

|  |     |
|--|-----|
| <b>White Emission From Ingan Multi-Quantum Wells On C-Planes And Nano-Pyramids Hybrid Structure.....</b> | 796 |
| <i>Taek Kim</i>  |     |

### **YTTERBIUM AND PRASEODYMIUM LASERS:**

|   |     |
|---|-----|
| <b>A Highly Efficient Diode-Pumped Pulsed Laser Based On Room-Temperature Yb:YAG Ceramics.....</b>                              | 798 |
| <i>Andrey Okishev</i>   |     |
| <b>Direct Amplification Of Ultrashort Pulses In <math>\mu</math>-Pulling Down Yb:YAG Single Crystal Fibers.....</b>             | 800 |
| <i>Yoann Zaouter</i>  |     |
| <b>High Single-Pass Small Signal Gain In Femtosecond Solid State Yb:Caf<sub>2</sub> Amplifiers Pumped By A 976-Nm YDFA.....</b> | 802 |
| <i>Guillaume Machinet</i>   |     |
| <b>100-MJ Diode-Pumped, Cryogenically-Cooled Yb:YLF Chirped-Pulse Regenerative Amplifier.....</b>                               | 804 |
| <i>Kanade Ogawa</i>   |     |
| <b>Diode Pumped Efficient Continuous-Wave Yb:YGG Laser .....</b>  | 806 |
| <i>Yongdong Zhang</i>   |     |
| <b>Continuous-Wave Diode-Pumped Pr<sup>3+</sup>:BaY<sub>2</sub>f<sub>8</sub> Orange Laser .....</b>                             | 808 |
| <i>Fabien Bretenaker</i>  |     |
| <b>Passively Q-Switched Pr:YLF Laser.....</b>   | 810 |
| <i>Stephane Calvez</i>  |     |

### **CMC ADVANCED NONLINEAR CONFIGURATIONS:**

|  |     |
|--|-----|
| <b>Third Harmonic Generation Enhancement In Nematic Liquid Crystals Via Nonlocal Solitons Propagation .....</b>  | 812 |
| <i>Marco Peccianti</i>   |     |
| <b>Non-Linear Optical Switch In Liquid Crystal Polymer Coated Microspheres .....</b>   | 814 |
| <i>Silvia Soria</i>  |     |
| <b>Single-Photon Detection In Near-Infrared Region Based On Frequency Upconversion In Mgo-Doped Periodically-Poled Lithium Niobate Waveguide .....</b>                               | 816 |
| <i>Yujie Ding</i>  |     |
| <b>Single-Photon Detection At 1550 Nm Via Upconversion Using A Tunable Long-Wavelength Pump Source .....</b>   | 818 |
| <i>Jason Pelc</i>  |     |
| <b>2nd And 4th Harmonic Generations Of A Diode-Oscillator Fiber-Amplifier For Atomic Spectroscopy .....</b>  | 820 |
| <i>Kwang-Hoon Ko</i>   |     |
| <b>Enhancement On Surface-Emitting Second-Harmonic Generation By Counter-Propagating Fundamental Beams In Linbo<sub>3</sub> Channel Waveguide By Seven Orders Of Magnitude .....</b> | 822 |
| <i>Yujie Ding</i>  |     |
| <b>Efficient Broad-Band Harmonic Generation For UV Picosecond Temporal Pulse Shaping .....</b>   | 824 |
| <i>Carlo Vicario</i>   |     |

### **CMD ULTRAFAST FIBER LASERS:**

|  |     |
|--|-----|
| <b>Tunable High-Energy Soliton Pulse Generation From A Large-Mode-Area Fiber Pumped By A Picosecond Time-Lens Source .....</b> | 826 |
| <i>Ke Wang</i>   |     |
| <b>Femtosecond Pulses From Coherently Combined Parallel Chirped Pulse Fiber Amplifiers .....</b>                               | 828 |
| <i>Leo Siiman</i>  |     |
| <b>Passively Mode Locked Ghz Femtosecond Yb-Fiber Laser Using An Intra-Cavity Martinez Compressor .....</b>                    | 830 |
| <i>Ingmar Hartl</i>  |     |
| <b>Femtosecond Fiber Oscillator At 976 Nm.....</b>   | 832 |
| <i>Jerome Lhermite</i>   |     |
| <b>Sub-40 Fs Er:Fiber Laser.....</b>   | 834 |
| <i>Zhigang Zhang</i>   |     |

|   |     |
|---|-----|
| <b>Carrier Envelope Phase Locked Modelocking In Fiber Lasers At Ultra-High Repetition Rates .....</b> | 836 |
| <i>Mark Shtaif</i>  |     |

### **CME NANOWIRES-NOVEL MATERIAL AND DEVICE CONCEPTS:**

|   |     |
|---|-----|
| <b>Characterization Of DNA Optical Microfiber Devices Fabricated By Drawing .....</b>                                 | 838 |
| <i>Weihong Long</i>   |     |
| <b>Cross-Sectional Geometry Control Of Low-Loss Biconical Fiber Tapers Using Hydrofluoric Acid Flow Etching .....</b> | 840 |
| <i>Jared Mikkelsen</i>  |     |
| <b>Color-Tunable Periodic Emission Of Alloyed CdS1-XSex/Sn: CdS1-XSex Superlattice Microwires.....</b>                | 842 |
| <i>Guozhang Dai</i>   |     |
| <b>High-Q Monolithic Distributed Bragg Reflector Cavities In Al<sub>2</sub>O<sub>3</sub> Channel Waveguides.....</b>  | 844 |
| <i>Edward Bernhardi</i>   |     |
| <b>Tellurite Nanostructured Fiber .....</b>   | 846 |
| <i>Meisong Liao</i>   |     |
| <b>Single-Crystal Erbium Chloride Silicate Nanowires For Novel Si-Compatible Sources At 1.53 μM .....</b>             | 848 |
| <i>Leijun Yin</i>   |     |
| <b>Strain-Induced Self-Rolling Of Semiconductor Membranes: Effect Of Geometry, Energetics, And Kinetics .....</b>     | 850 |
| <i>Xiuling Li</i>   |     |

### **CMF TERAHERTZ QUANTUM CASCADE LASERS:**

|   |     |
|---|-----|
| <b>3-4 Thz InGaAs/InAlAs Quantum-Cascade Lasers Based On The Indirect Pump Scheme .....</b>                         | 852 |
| <i>Masamichi Yamanishi</i>  |     |
| <b>Terahertz Quantum Cascade Sources Based On Intra-Cavity Frequency Mixing In Passive Nonlinear Sections .....</b> | 854 |
| <i>Robert Adams</i>   |     |
| <b>Monolithically Integrated Solid-State Terahertz Transceivers.....</b>  | 856 |
| <i>Mike Wanke</i>   |     |
| <b>Ultra-Broadband Thz Semiconductor Laser Based On Heterogeneous Quantum Cascade Gain Medium.....</b>              | 858 |
| <i>Giacomo Scalari</i>  |     |
| <b>InGaAs/GaAsSB Terahertz Quantum Cascade Lasers .....</b>   | 860 |
| <i>Hermann Detz</i>   |     |
| <b>Phase Seeding Of A Terahertz Quantum Cascade Laser .....</b>   | 862 |
| <i>Julien Madéo</i>   |     |

### **CMG REMOTE OPTICAL SENSING:**

|   |     |
|---|-----|
| <b>A High Resolution, Chirped Pulse Lidar For Simultaneous Range And Velocity Measurements.....</b>           | 864 |
| <i>Mohammad Umar Piracha</i>  |     |
| <b>An Extended Spectral Angle Map For Hyperspectral And Multispectral Imaging.....</b>                        | 866 |
| <i>Jack O'Sullivan</i>  |     |
| <b>Compressive Sensing LIDAR For 3D Imaging.....</b>  | 868 |
| <i>Gregory Howland</i>  |     |
| <b>Incident Field Image Reconstruction Using Speckle Intensity Correlations Over Position .....</b>           | 870 |
| <i>Kevin Webb</i>   |     |
| <b>Hyperspectral Imaging Technology And Systems, Exemplified By Airborne Real-Time Target Detection .....</b> | 872 |
| <i>Torbjörn Skauki</i>  |     |
| <b>TOF-Range Image Sensor In 0.18μM CMOS Technology Based On Current Assisted Photonic Demodulators .....</b> | 875 |
| <i>Gian-Franco Dalla Betta</i>  |     |

## **CMH ADVANCED LASER TECHNIQUES:**

|   |     |
|---|-----|
| <b>Laser Beam Quality Control With Nonlinear Interactions And Adaptive Optics</b> .....                         | 877 |
| <i>Arnaud Brignon</i>   |     |
| <b>Nd:YVO<sub>4</sub> Laser Mode-Locking At 1.34 μM By Negative X(2)-Lens Formation In An Intracavity</b> ..... | 878 |
| <i>BIBO Crystal</i> .....   | 878 |
| <i>Ivan Buchvarov</i>   |     |
| <b>Observing The Continuous Transformation Of A Four Level Laser Into A Two Level System</b> .....              | 880 |
| <i>John Hewitt</i>  |     |
| <b>Demonstration And Analysis Of A High Power Radiation Balanced Laser</b> .....                                | 882 |
| <i>Steven Bowman</i>  |     |

## **CMI SEMICONDUCTOR LASER RESONATORS:**

|   |     |
|---|-----|
| <b>Highly Unidirectional Whispering Gallery Mode Lasers</b> .....   | 884 |
| <i>Qijie Wang</i>   |     |
| <b>The Smallest Deformed Disk With Unidirectional Output</b> .....  | 886 |
| <i>Qinghai Song</i>   |     |
| <b>Single-Mode Quantum Cascade Lasers Employing A Candy-Cane Shaped Fabry-Perot Cavity</b> .....              | 888 |
| <i>Peter Liu</i>  |     |
| <b>Wavelength Tuning And Athermal Operations Of Micro-Machined Vcsels For Uncooled WDM Applications</b> ..... | 890 |
| <i>Hayato Sano</i>  |     |
| <b>Ultra-Compact Angular Reflector Based Ingaasp/Inp Micro-Lasers</b> .....                                   | 892 |
| <i>Fang Ou</i>  |     |
| <b>Athermal Hollow Waveguide Distributed Bragg Reflector Laser</b> .....                                      | 894 |
| <i>Fumio Koyama</i>   |     |
| <b>Giant Wavelength-Temperature Dependence Of VCSEL With Thermally Actuated Cantilever Structure</b> .....    | 896 |
| <i>Masanori Nakahama</i>  |     |

## **CMJ NONLINEAR MIXING IN OPTICAL FIBERS:**

|   |     |
|---|-----|
| <b>Temporal Pulse Compression In A Xe-Filled Kagome-Type Hollow-Core Photonic Crystal Fiber At High Average Power</b> ..... | 898 |
| <i>Oliver Heckl</i>   |     |
| <b>Few-Photon Switching Via Two-Photon Absorption In Rb-Filled Photonic Bandgap Fibers</b> .....                            | 900 |
| <i>Kasturi Saha</i>   |     |
| <b>Nonlinear Optics In Gas-Filled HC-PCF In The Plasma Regime</b> .....   | 902 |
| <i>Philipp Hoelzer</i>  |     |
| <b>Coherent Quasi-Cw 153 Nm Light Generated At 33 Mhz Repetition Rate</b> .....   | 904 |
| <i>Yutaka Nomura</i>  |     |
| <b>Remote Instantaneous Frequency Measurement System Using Optical Mixing In Highly Nonlinear Fiber</b> .....               | 906 |
| <i>Arnan Mitchell</i>   |     |
| <b>Solitonic Transistor In The Optical Event Horizon</b> .....  | 908 |
| <i>Günter Steinmeyer</i>  |     |
| <b>Parametric Tunable Dispersion Compensation For Sub-Picosecond Optical Pulses</b> .....                                   | 910 |
| <i>Takayuki Kurosu</i>  |     |

## **CMK MODE-LOCKED FIBER LASERS I:**

|   |     |
|---|-----|
| <b>Tm Fiber Laser Mode-Locked At Large Normal Dispersion</b> .....                                | 912 |
| <i>Hui Liu</i>  |     |
| <b>Mode-Locked Tm-Ho Fiber Laser With A Sb-Based SESAM</b> .....                                  | 914 |
| <i>Qing Wang</i>  |     |
| <b>Mode-Locked Fiber Laser With Few-Layer Epitaxial Graphene Grown On 6H-Sic Substrates</b> ..... | 916 |
| <i>Jiang Liu</i>  |     |

|   |     |
|---|-----|
| <b>4 Ghz Hybrid Mode-Locked Fiber Laser Using PDMS/SWCNT Thin Film Composite .....</b>                  | 918 |
| <i>Daniel May-Arriola</i>   |     |
| <b>Stability Enhancement Of Carbon-Nanotube-Based Mode-Locked Fiber Laser By Nitrogen Sealing .....</b> | 920 |
| <i>Kazuyuki Fuse</i>  |     |
| <b>Sub-100fs Pulse Generation From A Fiber Oscillator Mode-Locked By Nanotubes .....</b>                | 922 |
| <i>Daniel Popa</i>  |     |
| <b>Nanotube-Based Passively Mode-Locked Raman Laser .....</b>   | 924 |
| <i>Carlos Schmidt Castellani</i>  |     |

### **CML 3D NANO FABRICATION:**

|   |     |
|---|-----|
| <b>Three-Dimensional Laser Lithography With Conceptually Diffraction-Unlimited Lateral And Axial Resolution.....</b>  | 926 |
| <i>Joachim Fischer</i>  |     |
| <b>Fabrication Of Stepped And Reflowed 3-D Profiles For Optical Applications By Dose-Modulated Electron Beam Lithography And Selective Thermal Reflow .....</b> | 928 |
| <i>Helmut Schift</i>  |     |
| <b>One Step Non-Contact Fabrication Of Polymer Microlens Arrays By Thermocapillary Lithography .....</b>  | 930 |
| <i>Euan Mcleod</i>  |     |
| <b>Fabrication Of Self-Assembled Silica / Polystyrene Microlens Arrays For Light Extraction Enhancement In Nitride Light-Emitting Diodes .....</b>              | 932 |
| <i>Xiao-Hang Li</i>   |     |
| <b>Toward Flexible Wafer-Size 3D Photonic Crystal Templates Fabricated By Scanning Holographic Lithography.....</b>   | 934 |
| <i>Liang Yuan</i>   |     |
| <b>Low-Threshold Whispering-Gallery Dye Lasers By Planar And 3D Lithography On Silicon .....</b>  | 936 |
| <i>Tobias Grossmann</i>   |     |
| <b>Optofluidic Waveguides With Ta<sub>2</sub>O<sub>5</sub> Cladding Layers And Low Photoluminescence .....</b>  | 938 |
| <i>Yue Zhao</i>   |     |

### **CMM THZ SOURCES I:**

|  |     |
|--|-----|
| <b>Power-Scalable Narrowband Terahertz Pulses Generated By Periodically-Poled Litao3 Based On Backward Rectification .....</b> | 940 |
| <i>Yujie Ding</i>  |     |
| <b>Two Photon Absorption Effect Of Terahertz Radiation From Low-Temperature-Grown Gaas Photoconductive Antennas.....</b>       | 942 |
| <i>Chan-Shan Yang</i>  |     |
| <b>Amplified Stimulated Terahertz Emission From Optically Pumped Graphene .....</b>  | 944 |
| <i>Taiichi Otsuji</i>  |     |
| <b>High-Power Terahertz Generation Due To Dipole Radiation Within Ingan/Gan Multiple Quantum Wells .....</b>                   | 946 |
| <i>Yujie Ding</i>  |     |
| <b>Efficient Photoconductive Terahertz Generation Using A Radio Frequency Bias.....</b>  | 948 |
| <i>Haipeng Zhang</i>   |     |
| <b>Plasmonic Complementary Fractal Photoconductive Emitter.....</b>  | 950 |
| <i>Pouya Maraghechi</i>  |     |

### **CMN BIOMEDICAL AND NANOPARTICLE OPTICAL SENSING:**

|  |     |
|--|-----|
| <b>Measurements Of Blood Flow And Hemoglobin Concentration Change In Anesthetized Rat Using Two-Wavelength Laser Speckle Imaging .....</b> | 952 |
| <i>Naomichi Yokoi</i>  |     |
| <b>Metallized Ultrathin Nanocrystalline Si Membranes As Biochemical SPR Sensors .....</b>  | 954 |
| <i>Krishnan Shome</i>  |     |
| <b>Material-Specific Detection And Classification Of Single Nanoparticles.....</b>   | 956 |
| <i>Steven Person</i>   |     |

|   |     |
|---|-----|
| <b>Nonlinear Microspectroscopy For Biomedical Applications.....</b> | 958 |
| <i>Jürgen Popp</i>  |     |

### **CMO NANOPHOTONIC INTEGRATION:**

|   |     |
|---|-----|
| <b>Nanophotonics For Information Systems Integration .....</b>  | 960 |
| <i>Yeshaiahu Fainman</i>  |     |
| <b>Nanolasers On Si-MOSFET: A Monolithic Integration .....</b>  | 962 |
| <i>Fanglu Lu</i>  |     |
| <b>Direct Band Ge Photoluminescence At 1.6 <math>\mu</math>M Coupled To Ge-On-Si Microdisk Resonators .....</b> | 964 |
| <i>Gary Shambat</i>   |     |
| <b>Subwavelength Waveguide Grating Coupler For Fiber-To-Chip Coupling On SOI With 80nm 1db-Bandwidth .....</b>  | 966 |
| <i>Xia Chen</i>   |     |

### **CMP ND LASERS:**

|  |     |
|--|-----|
| <b>Composite All-Ceramics, Passively Q-Switched Nd:YAG/Cr<sup>4+</sup>:YAG Monolithic Micro-Laser With Two-Beam Output For Multi-Point Ignition.....</b> | 968 |
| <i>Nicolae Pavel</i>   |     |
| <b>ALADIN Txa - A Spaceborne UV Laser.....</b>   | 970 |
| <i>Martin Endemann</i>   |     |
| <b>Power Scaling Of Actively Q-Switched Synchronized Dual-Frequency Laser Pulses Based On Two Nd:YLF Crystals.....</b>                                   | 972 |
| <i>Yujie Ding</i>  |     |
| <b>High Efficient Laser Action By Nd<sup>3+</sup> Complex .....</b>  | 974 |
| <i>Hiroaki Yoshioka</i>  |     |
| <b>Detailed Fluorescent Study Of Nd:YAG Dependent On Doping Concentration.....</b>   | 976 |
| <i>Yoichi Sato</i>   |     |

### **CMQ QUANTUM CASCADE LASER:**

|  |     |
|--|-----|
| <b>Modal Instability And Beam Steering In Quantum Cascade Lasers.....</b>  | 978 |
| <i>Yu Yao</i>  |     |
| <b>Extremely Broad-Gain Quantum-Cascade Lasers Based On Dual-Upper-State Design.....</b>   | 980 |
| <i>Kazuue Fujita</i>   |     |
| <b>Broadband Quantum Cascade Lasers Based On Strongly-Coupled Transitions With An External Cavity Tuning Range Over 340 Cm<sup>-1</sup>.....</b> | 982 |
| <i>Yu Yao</i>  |     |
| <b>Active Wavelength Control For External Cavity Quantum Cascade Laser .....</b>   | 984 |
| <i>Tracy Tsai</i>  |     |
| <b>Nonlinear Dynamics, Phase Coherence, And Mode Locking In Quantum Cascade Lasers.....</b>  | 986 |
| <i>Alexey Belyanin</i>   |     |
| <b>Quantum Cascade Laser Master Oscillator Power Amplifier With 1.5W Output Power At T=300K.....</b>   | 988 |
| <i>Stefan Menzel</i>   |     |

### **CMR QUASI-PHASE MATCHED NONLINEAR OPTICS:**

|  |     |
|--|-----|
| <b>Spatiotemporal Quasi Phase Matching.....</b>  | 990 |
| <i>Alon Bahabad</i>  |     |
| <b>Singly-Resonant Optical Parametric Oscillator In Adhesive-Free-Bonded Periodically Inverted KTiOPO<sub>4</sub> Plates: Achieving Oscillations At Dual Wavelengths .....</b> | 992 |
| <i>Yujie Ding</i>  |     |
| <b>Optimized 4-<math>\mu</math>M OPO With Intracavity OPA Based On A Single Dual-Grating PPLN Crystal.....</b>   | 994 |
| <i>Antoine Godard</i>  |     |
| <b>Spectral Narrowing And Manipulation In Optical Parametric Oscillator Using APPLN Electro-Optic Polarization-Mode Converter .....</b>  | 996 |
| <i>Yen-Hung Chen</i>   |     |

|   |      |
|---|------|
| <b>High-Power Mid-Infrared Optical Parametric Chirped-Pulse Amplifier Based On Aperiodically Poled Mg:LiNbO<sub>3</sub> .....</b> | 998  |
| <i>Clemens Heese</i>  |      |
| <b>Dispersion Interferometry Based On Second-Harmonic Generation Of A Carbon Dioxide Laser In Orientation-Patterned GaAs.....</b> | 1000 |
| <i>Douglas Bamford</i>  |      |

## **CMS MODE-LOCKED FIBER LASERS II:**

|   |      |
|---|------|
| <b>500 Nj Mode-Locked Fiber Laser At 976 Nm .....</b>   | 1002 |
| <i>Jerome Lhermite</i>  |      |
| <b>40 W Picosecond Fiber Laser At 976 Nm .....</b>  | 1004 |
| <i>Guillaume Machinet</i>   |      |
| <b>Optical Mode Structure Of A Harmonically Mode-Locked Yb Femtosecond Fiber Laser.....</b>         | 1006 |
| <i>Simon Herr</i>   |      |
| <b>330 Mhz Repetition Rate Femtosecond Yb:Fiber Ring Laser .....</b>                                | 1008 |
| <i>Peng Li</i>  |      |
| <b>Net Normal-Dispersion Yb-Fiber Laser With Anomalous Dispersion Higher-Order-Mode Fiber .....</b> | 1010 |
| <i>Alma Fernandez</i>   |      |
| <b>High-Fidelity 165-Fs 5-μJ Pulses From An Integrated Ytterbium Fiber System.....</b>              | 1012 |
| <i>Alma Fernandez</i>   |      |
| <b>Scaling Mode-Locked Fiber Lasers To High Energies Using Chirally-Coupled Core Fiber .....</b>    | 1014 |
| <i>Simon Lefrancois</i>   |      |

## **ENHANCED EFFICIENCY PHOTOVOLTAICS:**

|  |      |
|--|------|
| <b>Photonic Crystal Intermediate Reflector In Micromorph Tandem Solar Cells .....</b>                      | 1016 |
| <i>Stephan Fahr</i>  |      |
| <b>Cascaded Interband/Intersubband Thermophotovoltaic Energy Conversion .....</b>                          | 1018 |
| <i>Jian Yin</i>  |      |
| <b>Enhanced Conversion Efficiency Of A Crystalline Silicon Solar Cell With Frustum Nanorod Arrays.....</b> | 1020 |
| <i>Min An Tsai</i>   |      |
| <b>Simulations Of Silicon Nanowire Arrays For Photovoltaics—More Absorption With Less Silicon.....</b>     | 1022 |
| <i>Kokou Dossou</i>  |      |
| <b>Present And Future Of High Efficiency Multi-Junction Solar Cells .....</b>                              | 1024 |
| <i>Masafumi Yamaguchi</i>  |      |
| <b>Stable And Near-Omni-Directional High-Efficiency Amorphous Si Photovoltaic Devices .....</b>            | 1027 |
| <i>Chih-Wei Hsu</i>  |      |

## **CMU NANO-STRUCTURED LEDs:**

|   |      |
|---|------|
| <b>Wavelength Engineered Luminescent Material Incorporating Colloidal Quantum Dot Within A Nanoporous Gallium Nitride Matrix.....</b> | 1029 |
| <i>Cuong Dang</i>   |      |
| <b>Resonant Cavity Colloidal Quantum Dot Leds .....</b>   | 1031 |
| <i>Yasuhiro Shirasaki</i>   |      |
| <b>Differential Carrier Lifetimes And Efficiency Of Ingan/Gan Quantum Well And Quantum Dot Light Emitting Diodes.....</b>             | 1033 |
| <i>Animesh Banerjee</i>   |      |
| <b>High Efficiency Ingan/Gan Dot-In-A-Wire Light Emitting Diodes Grown By Molecular Beam Epitaxy On Si(111).....</b>                  | 1035 |
| <i>Hieu Nguyen</i>  |      |
| <b>Diffraction-Coupled Plasmon-Enhanced Light Emission From Ingan/Gan Quantum Wells .....</b>   | 1037 |
| <i>John Henson</i>  |      |

## **CMV FABRICATION AND CHARACTERIZATION OF NANO PLASMONIC DEVICES:**

|   |      |
|---|------|
| <b>Varying-Density Hole-Array Grating Fabrication For Plasmonic Waveguide Sensors .....</b> | 1039 |
| <i>Michelle Xu</i>  |      |
| <b>Tunable 3d Plasmonic Swiss Rolls.....</b>  | 1041 |
| <i>Fumin Huang</i>  |      |
| <b>Large Area Near-Ir Optical ‘Fishnet’ Metamaterials .....</b>                             | 1043 |
| <i>Neilanjan Dutta</i>  |      |
| <b>Near Field Phase Mapping Exploiting Intrinsic Oscillations Of NSOM Probe.....</b>        | 1045 |
| <i>Liron Stern</i>  |      |
| <b>Nanoplasmonics For Guiding, Focusing And Detection Applications.....</b>                 | 1047 |
| <i>Uriel Levy</i>   |      |
| <b>Nano-Scale Strain Mapping Using Near-Field Spectroscopy.....</b>                         | 1048 |
| <i>Antonio Llopis</i>   |      |

## **CMW THZ SOURCES II:**

|   |      |
|---|------|
| <b>Reaching Maximum Conversion Efficiency For Terahertz Generation In Reversely Stacked Gap Plates.....</b>   | 1050 |
| <i>Yujie Ding</i>   |      |
| <b>Efficient Parametric Cavity Enhanced Terahertz Generation Based On Quasi-Phase Matched Gap Bonded Structures .....</b>                                     | 1052 |
| <i>Eliot Petersen</i>   |      |
| <b>High Power Single-Cycle And Multi-Cycle Terahertz Generation By Phase-Matched Optical Rectification .....</b>  | 1054 |
| <i>Xibin Zhou</i>   |      |
| <b>Coherent And Tunable Terahertz Emission From Nano-Metric Field Effect Transistor At Room Temperature .....</b>   | 1056 |
| <i>Stephane Boubanga Tombet</i>   |      |
| <b>Key Factors In Achieving Ultra-Broadband Thz Emission From A Laser-Induced Gas Plasma.....</b>   | 1058 |
| <i>Mark Thomson</i>   |      |
| <b>Power-Enhanced Narrow-Band Sub-Thz Generation By Use Of A Photonic Transmitter And Shaped Optical Pulses.....</b>  | 1060 |
| <i>Jim-Wein Lin</i>   |      |
| <b>Generation Of &gt;100 μJ, Broadband Thz Transients With &gt;10 MV/Cm Fields Via Coherent Transition Radiation At The Linac Coherent Light Source .....</b> | 1062 |
| <i>Dan Daranciang</i>   |      |

## **CMX PLASMONIC DEVICES:**

|  |      |
|--|------|
| <b>Engineered Nonlinear Optical Structures Based On Metal Nanocomposite Photonic Crystals.....</b>                           | 1064 |
| <i>Saima Husaini</i>   |      |
| <b>Surface Enhanced Raman Scattering Enhancements From Silver Atomic Layer Deposition Coated Nanowire .....</b>              | 1066 |
| <i>Joshua Caldwell</i>   |      |
| <b>Coupled Nanocavity-Grating Resonances: Large Plasmonic Enhancement Of Nonlinear Optical Phenomena .....</b>               | 1068 |
| <i>Federico Capasso</i>  |      |
| <b>Grating Coupler Integrated Photodiodes For Plasmon Resonance Based Sensing In Fluidic Systems.....</b>                    | 1070 |
| <i>Burak Turker</i>  |      |
| <b>Surface Plasmonic Lens On A Single-Mode Optical Fiber For Far-Field Superfocusing .....</b>                               | 1072 |
| <i>Yuxiang Liu</i>   |      |
| <b>Giant Photoconductivity Gain In Nanowire Photodetectors And The Effect Of Photo-Modulation Of Contact Injection .....</b> | 1074 |
| <i>Gustavo Fernandes</i>   |      |

## **CMY 1.5-5Mm LASERS:**

|   |      |
|---|------|
| <b>Er3+-Doped Diode-Pumped Ceramic Laser Delivers 14 W CW At 2.7-<math>\mu</math>M</b>                            | 1076 |
| <i>Tigran Sanamyan</i>  |      |
| <b>High-Power Radially-Polarized Er:YAG Laser With Laguerre-Gaussian (LG01) Mode Output</b>                       | 1078 |
| <i>Ji Won Kim</i>   |      |
| <b>Nearly Quantum Defect-Limited Efficiency Laser Operation Of A Resonantly Pumped Er3+-Doped YVO<sub>4</sub></b> | 1080 |
| <i>Mark Dubinskii</i>   |      |
| <b>High-Energy Gain-Switched Mid-IR Lasers Based On Cr And Fe Doped Znse</b>                                      | 1082 |
| <i>Nosoung Myoung</i>   |      |
| <b>Passive Mode-Locking Of A Tm:YLF Laser</b>   | 1084 |
| <i>Uwe Griebner</i>   |      |
| <b>Laser Pulse Energy Control Using A High Speed Digital Feedback Controller</b>                                  | 1086 |
| <i>Cobus Jacobs</i>   |      |
| <b>Polarization Switching In The 2-<math>\mu</math>M Tm:KLu(WO<sub>2</sub>)<sub>4</sub> Laser</b>                 | 1088 |
| <i>Xavier Mateos</i>  |      |

## **CMZ FIBER DEVICES:**

|   |      |
|---|------|
| <b>Optical Circuits In Fiber Cladding: Femtosecond Laser-Written Bragg Grating Waveguides</b>   | 1090 |
| <i>Jason Grenier</i>  |      |
| <b>Diffraction Control Of Bessel Beams Generated In Fiber</b>   | 1092 |
| <i>Paul Steinurzel</i>  |      |
| <b>Fiber DFB Laser Bend Sensor With RF Signal Interrogation</b>   | 1094 |
| <i>Kazi Abedin</i>  |      |
| <b>Continuous And Discrete Multimode Interference Liquid Level Sensor</b>   | 1096 |
| <i>Daniel May-Arrioja</i>   |      |
| <b>The 4FAD: A High-Extinction-Ratio, Achromatic, Temperature-Insensitive, High-Damage-Threshold, All-Fiber, Power-Selective Filter</b> | 1098 |
| <i>Daniel Soh</i>   |      |

## **CMAA NONLINEAR OPTICS IN WAVEGUIDES AND NANOSTRUCTURES:**

|   |      |
|---|------|
| <b>Ultra-Broadband Tunable Wavelength Conversion Of Sub-Picosecond Pulses In A Silicon Nanowire</b>                 | 1100 |
| <i>Minhao Pu</i>  |      |
| <b>Continuously Tunable Wavelength Conversion Of Data With Record Probe-Idler Separations In A Silicon Nanowire</b> | 1102 |
| <i>Noam Ophir</i>   |      |
| <b>Broadband Wavelength Conversion Of Incoherent Light In Silicon Nanowaveguides</b>                                | 1104 |
| <i>Ryan Lau</i>   |      |
| <b>Second And Third-Order Nonlinear Optical Effects In Zno Channel Waveguides</b>                                   | 1106 |
| <i>Tomohiro Kita</i>  |      |
| <b>Waveguide Saturable Absorbers In Chalcognide Glass Fabricated By Ultrafast Lasers</b>                            | 1108 |
| <i>Tong Chen</i>  |      |
| <b>Generation Of Four Wave Mixing In Graphene And Carbon Nanotubes Optically Deposited Onto Fiber Ferrules</b>      | 1110 |
| <i>Bo Xu</i>  |      |
| <b>High-Performance Silicon-Based Multiple Wavelength Source</b>  | 1112 |
| <i>Jacob Levy</i>   |      |

## **CMBB HIGH-REPETITION-RATE PULSED SOURCES:**

|  |      |
|--|------|
| <b>Optical Comb And Pulse Generation From CW Light</b>   | 1114 |
| <i>Takahide Sakamoto</i>   |      |
| <b>10 Ghz Repetition Rate Passively Mode-Locked Er-Yb Doped Fiber Laser</b>                        | 1116 |
| <i>Grzegorz Sobon</i>  |      |
| <b>A 10 Ghz 2.5 Ps Regeneratively Mode-Locked Yb Fiber Laser In The 1.1 <math>\mu</math>M Band</b> | 1118 |
| <i>Kengo Koizumi</i>   |      |

|   |      |
|---|------|
| <b>Fiber Fabry-Pérot Laser Mode-Locked By Graphene For The Generation Of Supercontinuum With 10ghz Mode Spacing .....</b> | 1120 |
| <i>Amos Martinez</i>  |      |

### **CMCC NANOSTRUCTURES FOR PHOTOVOLTAICS:**

|   |      |
|---|------|
| <b>Plasmonic Organic Solar Cell And Its Absorption Enhancement Analysis Using Cylindrical Ag Nano-Particle Model Based On Finite Difference Time Domain (FDTD).....</b> | 1122 |
| <i>Seongku Kim</i>  |      |
| <b>Patterned Plasmonic Nano-Antennas Embedded In The Active Layer Of Organic Photovoltaic Cells - Enhanced Absorption.....</b>  | 1124 |
| <i>Nikolai Berkovitch</i>   |      |
| <b>Enhancing Solar Cells With Localized Plasmons In Nanovoids .....</b>   | 1126 |
| <i>Fumin Huang</i>  |      |
| <b>Dielectric Nanostructures For Broadband Light Trapping In Organic Solar Cells .....</b>  | 1128 |
| <i>Aaswath Raman</i>  |      |
| <b>Enhanced Omnidirectional Photon Coupling Via Quasi-Periodic Patterning Of Indium-Tin-Oxide For Organic Thin-Film Solar Cells .....</b>                               | 1130 |
| <i>Ping-Chen Tseng</i>  |      |
| <b>Förster-Type Nonradiative Energy Transfer Directed From Colloidal Quantum Dots To Epitaxial Quantum Wells For Light Harvesting Applications.....</b>                 | 1132 |
| <i>Sedat Nizamoglu</i>  |      |
| <b>Near-Omni-Directional Sub-Micron Silica Light-Trapping Monolayer For Amorphous Si Photovoltaic Devices .....</b>   | 1134 |
| <i>Jia-Min Shieh</i>  |      |

### **OPTOFLUIDIC CELL, PARTICLE AND FLUID MANIPULATION:**

|  |      |
|--|------|
| <b>Optical Techniques For Tracking Cells In Vivo .....</b>   | 1136 |
| <i>Charles Lin</i>   |      |
| <b>Pulsed Laser Triggered High Speed Microfluidic Fluorescence Activated Cell Sorter .....</b>       | 1137 |
| <i>Ting-Hsiang Wu</i>  |      |
| <b>Sized-Based Optical Particle Sorting Using An Orthogonal Beam In Optofluidic Waveguides .....</b> | 1139 |
| <i>Kaelyn Leake</i>  |      |
| <b>Novel Electrode Shape To Reduce Heating In Light-Actuated Digital Microfluidics.....</b>          | 1141 |
| <i>Shao Ning Pei</i>   |      |
| <b>All-Optical Particle Trap Using Two Orthogonally Intersecting Beams .....</b>                     | 1143 |
| <i>Holger Schmidt</i>  |      |
| <b>Optofluidically Reconfigurable Channel Based Microfluidics.....</b>                               | 1145 |
| <i>Mekala Krishnan</i>   |      |

### **CMEC NANOFABRICATION CONCEPTS:**

|   |      |
|---|------|
| <b>Ultrathin Optomechanical Sinx Nanomembranes With Photonic Crystal Fano Resonances For Enhanced Radiation Pressure.....</b> | 1147 |
| <i>Catvu Bui</i>  |      |
| <b>Encrypting Messages In 3D Photonic Crystals With Patterned Surface Chemistry.....</b>                                      | 1149 |
| <i>Ian Burgess</i>  |      |
| <b>Direct Imprinting Of Porous Substrates.....</b>  | 1151 |
| <i>Judson Ryckman</i>   |      |
| <b>Talbot Effect: A Venerable Idea With New Applications In Nanofabrication .....</b>   | 1153 |
| <i>Mario Marconi</i>  |      |
| <b>Micro-Pixelated Blue/Brown Color Changing Surface Using Magnetically Actuated Nanocomposite Actuators .....</b>            | 1155 |
| <i>Jiyun Kim</i>  |      |
| <b>Growth Of InGaN-Based Light-Emitting Diodes With AlInN Thin Barrier For Efficiency Droop Suppression .....</b>             | 1157 |
| <i>Guangyu Liu</i>  |      |

|  |      |
|--|------|
| <b>Digital Planar Holograms Fabricated By Step And Repeat UV Nanoimprint Lithography: From Spectrometer Chip To Higher Power Laser Diodes.....</b> | 1159 |
| <i>Christophe Peroz</i>  |      |

## **CMFF THZ TECHNOLOGY:**

|   |      |
|---|------|
| <b>Intracavity Generation Of Continuous Wave Terahertz Radiation In The Milliwatt Regime .....</b>                                | 1161 |
| <i>Maik Scheller</i>  |      |
| <b>Prospects Of Heterodyning In Electro-Optic Detector.....</b>   | 1163 |
| <i>Juraj Darmo</i>  |      |
| <b>Semiconductor Laser Based Thz Technology.....</b>  | 1165 |
| <i>Martin Hofmann</i>   |      |
| <b>Compact And Portable Terahertz Source By Mixing Two Frequencies Generated Simultaneously By Single Solid-State Laser .....</b> | 1168 |
| <i>Yujie Ding</i>   |      |
| <b>Electro-Optical Thz Phase Control .....</b>  | 1170 |
| <i>Michael Feiginov</i>   |      |
| <b>Absolute Frequency Measurement Of A Thz Quantum Cascade Laser Using A Dual Fs-Fiber Laser Comb Technique.....</b>              | 1172 |
| <i>Marco Ravaro</i>   |      |

## **CTUA ULTRAFAST NOISE AND PHASE-LOCKING:**

|  |      |
|--|------|
| <b>Passively Phase-Locked Er:Fiber Technology .....</b>  | 1174 |
| <i>Günther Krauss</i>  |      |
| <b>Signatures Of Sub-Poissonian Noise In The Carrier-Envelope Phase Jitter Of Highly Stabilized Mode-Locked Lasers .....</b>     | 1176 |
| <i>Günter Steinmeyer</i>   |      |
| <b>The Influence Of Cavity Dispersion On Amplitude And Frequency Noise In A Yb-Fiber Laser Comb .....</b>                        | 1178 |
| <i>Lora Nugent-Glandorf</i>  |      |
| <b>Attosecond-Resolution Timing Jitter Characterization Of Yb-Fiber Lasers In Stretched-Pulse And Self-Similar Regimes .....</b> | 1180 |
| <i>Jungwon Kim</i>   |      |
| <b>Sub-Femtosecond Timing Jitter Optical Pulse Trains From Mode-Locked Er-Fiber Lasers.....</b>                                  | 1182 |
| <i>Jungwon Kim</i>   |      |
| <b>40 Ghz Algainas/InP 1.55 μM Passively Mode-Locked Laser With Low Divergence Angle And Timing Jitter.....</b>                  | 1184 |
| <i>Lianping Hou</i>  |      |
| <b>Noise Performance Of Time Stretch System With Distributed And Discrete Amplifiers .....</b>                                   | 1186 |
| <i>Salih Kalyoncu</i>  |      |

## **CTUB FIBER PLASMONS AND VORTICES:**

|   |      |
|---|------|
| <b>Long-Range Fiber-Transmission Of Photons With Orbital Angular Momentum.....</b>                            | 1188 |
| <i>Nenad Bozinovic</i>  |      |
| <b>Cylindrical Vector Beam Generation From A Multi Elliptical Core Optical Fiber.....</b>                     | 1190 |
| <i>Giovani Milione</i>  |      |
| <b>Plasmonic Photonic Crystal Fiber .....</b>   | 1193 |
| <i>Markus Schmidt</i>   |      |
| <b>Conical Modes In An Optical Fiber: The Cut-Off Effect .....</b>  | 1196 |
| <i>Misha Sumetsky</i>   |      |
| <b>Coherent Combining Of Two Quantum-Cascade Lasers In A Michelson Cavity.....</b>                            | 1198 |
| <i>Guillaume Bloom</i>  |      |
| <b>Temperature Dependence Of The Transparency Current Density In Mid-Infrared Quantum Cascade Lasers.....</b> | 1200 |
| <i>Yamac Dikmelik</i>   |      |
| <b>Single-Mode Interband Cascade Lasers With Coupled Ring Resonators.....</b>                                 | 1202 |
| <i>Jerry Meyer</i>  |      |

|   |      |
|---|------|
| <b>High Power Mid-Infrared In-Plane DBR Laser.....</b>  | 1204 |
| <i>Chi Yang</i>   |      |
| <b>430-Fs Pulses From A SESAM Mode-Locked Gasb Disk Laser Emitting At 2 <math>\mu</math>M.....</b>      | 1206 |
| <i>Mircea Guina</i>   |      |
| <b>Gasb-Based High-Power Single-Spatial-Mode Lasers At 2.0 <math>\mu</math>M.....</b>                   | 1208 |
| <i>Kale Franz</i>   |      |
| <b>Nanoparticle-Enhanced Tunnel Junctions For Reduced Free-Carrier Absorption In Mid-IR Lasers.....</b> | 1210 |
| <i>Adam Crook</i>   |      |

#### **CTUD APPLICATIONS OF OPTICAL PARAMETRIC PROCESSES:**

|   |      |
|---|------|
| <b>Optical Parametric Generation Of Mid-Infrared Picosecond Pulses Beyond 6 Microns In CdSiP<sub>2</sub>.....</b> | 1212 |
| <i>Majid Ebrahim-Zadeh</i>  |      |
| <b>Picosecond Mid-IR Optical Parametric Amplifier Based On Gas0.4Se0.6 Pumped By A Nd:YAG</b>                     |      |
| <b>Laser System At 1064 Nm.....</b>   | 1214 |
| <i>Valentin Petrov</i>  |      |
| <b>Cascaded Traveling-Wave Phase-Sensitive Optical Parametric Amplifiers.....</b>                                 | 1216 |
| <i>Gideon Alon</i>  |      |
| <b>1.5 <math>\mu</math>M Dual-Frequency Pico-Second Optical Parametric Generator Pumped By A Nd-Doped</b>         |      |
| <b>Vanadate Bounce Laser .....</b>  | 1218 |
| <i>Katsuhiro Miyamoto</i>   |      |
| <b>Doubly Resonant Optical Parametric Oscillator: A Generic Transmitter Architecture For DIAL.....</b>            | 1220 |
| <i>Myriam Raybaut</i>   |      |
| <b>The Effect Of Pump Coherence On The Efficient Generation Of CW Pumped Supercontinuum .....</b>                 | 1223 |
| <i>Edmund Kelleher</i>  |      |

#### **CTUE HIGH LASER POWER MATERIAL AND DEVICES:**

|  |      |
|--|------|
| <b>Fabrication And Characterization Of Ultra-Large Core Size (&gt;100<math>\mu</math>M) Kagome Fiber For Laser</b>       |      |
| <b>Power Handling .....</b>  | 1225 |
| <i>Yu Cheng</i>  |      |
| <b>Energy-Scalable Pulsed Mid-Infrared Source Using Orientation Patterned GaAs .....</b>                                 | 1227 |
| <i>Douglas French</i>  |      |
| <b>The Reduction Of Laser Damage Resistance Of Optical Coatings To Subpicosecond Pulse Trains</b>                        |      |
| <b>Under Vacuum .....</b>  | 1229 |
| <i>Luke Emmert</i>   |      |
| <b>New Mid-IR Gain Media Based On Transition Metal Doped II-VI Ternary - Quaternary Compounds</b>                        |      |
| <b>And Glassy Composites .....</b>   | 1231 |
| <i>Dmitry Martyshkin</i>   |      |
| <b>Optical Emission From Fused Silica Ejecta Following Localized Exposure To Nanosecond Laser</b>                        |      |
| <b>Pulses .....</b>  | 1233 |
| <i>Rajesh Raman</i>  |      |
| <b>High Fidelity Large Aperture Periodically Poled Rb:KTiOPO<sub>4</sub> For High Energy Frequency Conversion .....</b>  | 1235 |
| <i>Andrius Zukauskas</i>   |      |
| <b>Measurement Of Wavefront Distortions Resulting From Incidence Of High-Power 2 <math>\mu</math>M Laser Light .....</b> | 1237 |
| <i>Christina Willis</i>  |      |

#### **CTUF NOVEL OPTOFLUIDIC APPLICATIONS AND OPTOFLUIDIC ENERGY:**

|  |      |
|--|------|
| <b>Optofluidic Lock-In Spectroscopy On A Chip .....</b>  | 1239 |
| <i>Wuzhou Song</i>   |      |
| <b>Waveguide Enabled Photo-Bio-Energy Production.....</b>  | 1241 |
| <i>Michael Kalontarov</i>  |      |
| <b>Simultaneous Oxygenation And Flow Using Current Modulation Of Vesels During Ischemia.....</b> | 1243 |
| <i>Dene Ringuelette</i>  |      |
| <b>Micro-Fluidic Flow Switching By Using An Optical Beam.....</b>                                | 1245 |
| <i>Janet Lou</i>   |      |
| <b>Single Exposure Fabrication And Manipulation Of 3D Hydrogel Cell Microcarriers .....</b>      | 1247 |
| <i>Sunghoon Kwon</i>   |      |

|   |      |
|---|------|
| <b>Evanescence Cultivation Of Cyanobacteria For Bioenergy .....</b> | 1249 |
| <i>Matthew Ooms</i>   |      |

### **CTUG SEMICONDUCTOR NANOLASERS:**

|  |      |
|--|------|
| <b>Nanoscale Lasers: How Small Can They Go? .....</b>  | 1251 |
| <i>Shun Chuang</i>   |      |
| <b>Room Temperature CW Operation Of Metal-Semiconductor Plasmonic Nanolasers With Subwavelength Cavity .....</b> | 1253 |
| <i>Kang Ding</i>   |      |
| <b>Metal-Clad Semiconductor Nanoring Lasers .....</b>  | 1255 |
| <i>Min Kim</i>   |      |

### **CTUH ULTRAFAST MEASUREMENT TECHNIQUES:**

|  |      |
|--|------|
| <b>Real-Time Group-Delay Monitoring Of Ultra-Broadband Dispersive Devices By Incoherent Light Interferometry .....</b> | 1257 |
| <i>Antonio Malacarne</i>   |      |
| <b>Compact Spatio-Temporal Ultrashort Pulse Characterisation Using A Pulse Shaper And A Wavefront Sensor .....</b>     | 1259 |
| <i>Seth Cousin</i>   |      |
| <b>Sub-30nm Spatial Resolution Imaging Using A Tabletop 13nm High Harmonic Source.....</b>                             | 1261 |
| <i>Matthew Seaberg</i>   |      |
| <b>3-Dimensional Laser Pulse Intensity Diagnostics For The Energy Recovery Linac Photoinjector .....</b>               | 1263 |
| <i>Heng Li</i>   |      |
| <b>A Terahertz Streak Camera For The Characterization Of Ultrashort Laser Pulses.....</b>                              | 1265 |
| <i>Olaf Schubert</i>   |      |
| <b>One Million Time-Bandwidth Product Full-Field Waveform Measurement Using Frequency-To-Time Interferometry .....</b> | 1267 |
| <i>Nicolas Fontaine</i>  |      |

### **CTUI CW FIBER SOURCES:**

|   |      |
|---|------|
| <b>Highly Efficient, High Power, Inband-Pumped Erbium/Ytterbiumcodoped Fiber Laser .....</b>                    | 1269 |
| <i>Ee Leong Lim</i>   |      |
| <b>Single-Longitudinal-Mode Brillouin Fiber Laser Incorporating An Unpumped Erbium-Doped Fiber Loop .....</b>   | 1271 |
| <i>Hongpu Li</i>  |      |
| <b>A Short Dual-Wavelength DBR Phosphate Fiber Laser .....</b>  | 1273 |
| <i>Lingyun Xiong</i>  |      |
| <b>Extended Tunability Of Narrow-Linewidth Yb-Fiber Laser .....</b>   | 1275 |
| <i>Peter Zeil</i>   |      |
| <b>High Resolution Tunable Fiber Laser Employing Two-Dimensional Dispersion And A Phase Lcos Modulator.....</b> | 1277 |
| <i>David Sinefeld</i>   |      |
| <b>Brillouin Fiber Laser With Incoherent Feedback.....</b>  | 1279 |
| <i>Andrei Fotiadi</i>   |      |
| <b>Ce<sup>3+</sup>,Sm<sup>3+</sup>:YAG Double-Clad Crystal Fiber Broadband Light Source .....</b>               | 1281 |
| <i>Yen-Sheng Lin</i>  |      |

### **PETAWATT LASER TECHNOLOGY:**

|   |      |
|---|------|
| <b>Direct Estimation Of The Intensity Contrast Of High-Energy Laser Pulses.....</b> | 1283 |
| <i>Christophe Dorrer</i>  |      |
| <b>Recent Progress On The PW Beamline For SG-II-U Laser Facility .....</b>          | 1285 |
| <i>Wang Tao</i>   |      |

|  |      |
|--|------|
| <b>High-Power Faraday Isolator With New Method Of Compensation Of Thermally Induced Depolarization .....</b> | 1287 |
| <i>Ilya Snetkov</i>  |      |
| <b>Spectral Amplitude And Phase Evolution In Petawatt Laser Pulses.....</b>                                  | 1289 |
| <i>Catalin Filip</i>   |      |
| <b>Origin Of The Coherent Contrast Pedestal In Petawatt Laser Pulses .....</b>                               | 1291 |
| <i>Chris Hooker</i>  |      |

### **CTUK OPTICAL PARAMETRIC OSCILLATORS:**

|  |      |
|--|------|
| <b>Modulation Instability Of Continuous Wave Optical Parametric Oscillators.....</b>   | 1293 |
| <i>Christopher Phillips</i>  |      |
| <b>Compact, Narrow Linewidth, Continuous-Wave, Intracavity Optical Parametric Oscillator Pumped By A Semiconductor Disk Laser.....</b> | 1295 |
| <i>Graeme Malcolm</i>  |      |
| <b>Dual-Wavelength, Two-Crystal, Continuous-Wave Singly Resonant Optical Parametric Oscillator .....</b>                               | 1297 |
| <i>Goutam Samanta</i>  |      |
| <b>Interferometric Output Coupling Of A High-Power Picosecond Ring Optical Parametric Oscillator .....</b>                             | 1299 |
| <i>S. Chaitanya Kumar</i>  |      |
| <b>Widely Tunable Narrow-Band Terahertz-Wave Source Pumped By Injection-Seeded Optical Parametric Generation.....</b>                  | 1301 |
| <i>Kouji Nawata</i>  |      |
| <b>500-Ghz Mode-Hop-Free Idler Tuning Range With A Frequency-Stabilized Singly-Resonant Parametric Oscillator .....</b>                | 1303 |
| <i>Jean-Jacques Zondy</i>  |      |
| <b>Frequency-Modulation-Mode-Locked Optical Parametric Oscillator.....</b>   | 1305 |
| <i>Adolfo Esteban-Martin</i>   |      |

### **CTUL NOVEL NONLINEAR MATERIALS AND DEVICE CONCEPTS:**

|  |      |
|--|------|
| <b>Quasi-Phase-Matched Second-Harmonic Generation At Vacuum Ultraviolet 193 Nm .....</b>                             | 1307 |
| <i>Sunao Kurimura</i>  |      |
| <b>Two-Photon Accessed Excited State Absorption In Bis(Terpyridylsodium)-(Porphinato)Zinc .....</b>                  | 1309 |
| <i>San-Hui Chi</i>   |      |
| <b>Wide-Band Tunable SFG-DFG Wavelength Conversion In Efficient LN-QPM Adhered Ridge Waveguide.....</b>              | 1311 |
| <i>Kaori Sugiura</i>   |      |
| <b>Baga4s7: Wide-Bandgap Phase-Matchable Nonlinear Crystal For The Mid-Infrared .....</b>                            | 1313 |
| <i>Valentin Petrov</i>   |      |
| <b>Dense Small Molecule Assemblies For Third-Order Nonlinear Optics: DDMEBT .....</b>                                | 1315 |
| <i>Michelle Fleischman</i>   |      |
| <b>Second-Order Nonlinearity Distribution In A Doped Silica Glass Multilayered Structure .....</b>                   | 1317 |
| <i>Ksenia Yadav</i>  |      |
| <b>Enhancement Of Effective Electro-Optic Coefficient In Domain Engineered UV-Written Waveguides In Linbo3 .....</b> | 1319 |
| <i>Charlie Y. J. Ying</i>  |      |

### **CTUM OPTOFLUIDIC DETECTION AND IMAGING:**

|   |      |
|---|------|
| <b>Lensless On-Chip Color Imaging Using Nano-Structured Surfaces And Compressive Decoding.....</b>              | 1321 |
| <i>Bahar Khademhosseini</i>   |      |
| <b>Nano-Sensing With A Silica Microtoroid .....</b>   | 1323 |
| <i>Tao Lu</i>   |      |
| <b>Dual-Function Metallic Nanohole Arrays: Electrokinetic Analyte Concentration And Plasmonic Sensing .....</b> | 1325 |
| <i>Carlos Escobedo</i>  |      |
| <b>High-Resolution Holographic Opto-Fluidic Microscope On A Chip.....</b>                                       | 1327 |
| <i>Waheb Bishara</i>  |      |

|   |      |
|---|------|
| <b>Nonlinear Dynamics Of Light, Fluid, And Nano-Particles: Light-Induced Flow And Beam Collapse Through Radiation Pressure.....</b> | 1329 |
| <i>Alexander Szameit</i>  |      |
| <b>Photonic Crystal Optofluidics For Electrochromatography On A Chip.....</b>   | 1331 |
| <i>Moez Haque</i>   |      |
| <b>Printable DFB Laser And Wavelength Monitor Systems By On Demand Fabrication On Flexible Films .....</b>                          | 1333 |
| <i>Yuji Oki</i>   |      |

### **CTUN MICRO AND NANO-PHOTONIC MODULATORS:**

|  |      |
|--|------|
| <b>Fast And Compact Silicon Photonic Crystal Modulator .....</b>   | 1335 |
| <i>Hong Nguyen</i>   |      |
| <b>Ultra-Low Power Fiber-Coupled Gallium Arsenide Photonic Crystal Cavity Electro-Optic Modulator .....</b>  | 1337 |
| <i>Gary Shambat</i>  |      |
| <b>Non-Blocking Operation Of A Tunable Compact Optical Filter With Large FSR.....</b>                        | 1339 |
| <i>Hugo Lira</i>   |      |
| <b>DPSK Modulation Using A Microring Modulator.....</b>  | 1341 |
| <i>Kishore Padmaraju</i>   |      |
| <b>40ghz Zero Chirp Single-Ended EO Polymer Modulators With Low Half-Wave Voltage .....</b>                  | 1343 |
| <i>Guomin Yu</i>   |      |
| <b>Slow Light Enhanced E-O Polymer Nano-Photonic Modulator With Ultra-High Effective In-Device R33 .....</b> | 1345 |
| <i>Alan Wang</i>   |      |

### **CTUO ULTRAFAST PULSE CHARACTERIZATION:**

|  |      |
|--|------|
| <b>Characterizing Ultrashort Pulses One Photon At A Time .....</b>   | 1347 |
| <i>Dan Oron</i>  |      |
| <b>Measurement Of Energy Contrast Of Amplified Ultrashort Pulses Using Cross Polarized Wave Generation And Spectral Interferometry .....</b> | 1349 |
| <i>Charles Durfee</i>  |      |
| <b>Self-Referenced Spectral Interferometry In The UV Domain .....</b>  | 1351 |
| <i>Stéphanie Grabielle</i>   |      |
| <b>Double-Blind Frequency-Resolved Optical Gating For Measuring Two Different Pulses Simultaneously .....</b>                                | 1353 |
| <i>Vikrant Chauhan</i>   |      |
| <b>40-Photon-Per-Pulse Spectral Phase Retrieval By Shaper-Assisted Modified Interferometric Field Autocorrelation .....</b>                  | 1355 |
| <i>Chen-Shao Hsu</i>   |      |
| <b>SPIDER On-Chip: A Subpicosecond Phase Sensitive Optical Oscilloscope .....</b>  | 1357 |
| <i>Alessia Pasquazi</i>  |      |

### **CTUP NOVEL SEMICONDUCTOR LASERS**

|   |      |
|---|------|
| <b>High-Power BCB Encapsulated Vessels Based On InP .....</b>   | 1359 |
| <i>Tobias Gruendl</i>   |      |
| <b>Tailored Intensity Distributions With Vertical-Cavity Surface-Emitting Laser Systems .....</b>   | 1361 |
| <i>Stephan Gronenborn</i>   |      |
| <b>Drive-Current Tuning Of Self-Oscillation Frequency Of External Cavity VCSEL .....</b>  | 1363 |
| <i>Clinton Smith</i>  |      |
| <b>Long-Wavelength (<math>\lambda \approx 14 \mu\text{m}</math>) Quantum Cascade Lasers With Low Threshold And High Characteristic Temperature (<math>\sim 300 \text{ K}</math>).....</b> | 1365 |
| <i>Xue Huang</i>  |      |
| <b>Room Temperature GaAs/AlGaAs Quantum Cascade Lasers With Ingap And InAlP Waveguide .....</b>   | 1367 |
| <i>Dmitry Revin</i>   |      |
| <b>Catastrophic Optical Damage At Front And Rear Facets Of 975 Nm Emitting Diode Lasers .....</b>   | 1369 |
| <i>Martin Hempel</i>  |      |

|   |      |
|---|------|
| <b>Lasing In Metal-Coated Gan Nano-Stripe At Room Temperature .....</b> | 1371 |
| <i>Yow-Gwo Wang</i>   |      |

### **CTUQ ULTRAFAST AND BROADBAND NONLINEAR OPTICS:**

|   |      |
|---|------|
| <b>Liquid Crystals Nonlinear Optics - CW To Femtoseconds All-Optical Signal Processing .....</b>                            | 1373 |
| <i>Iam Choon Khoo</i>   |      |
| <b>Supercontinuum Generation Near 2 <math>\mu\text{m}</math> In Periodically Poled Lithium Niobate Waveguides .....</b>     | 1375 |
| <i>Christopher Phillips</i>   |      |
| <b>Wideband Supercontinuum Generation In Tapered Tellurite Microstructured Fibers.....</b>                                  | 1377 |
| <i>Yasutake Ohishi</i>  |      |
| <b>Temporal Contrast Improvement Of Femtosecond Pulses By A Self-Diffraction Process In A Kerr Bulk Medium .....</b>        | 1379 |
| <i>Jun Liu</i>  |      |
| <b>Optimally Chirped Cars Spectroscopy Using Fiber Stretchers .....</b>   | 1381 |
| <i>Carsten Cleff</i>  |      |
| <b>Crystal Structure Measured By Nonlinear Absorption Using 3.1 <math>\mu\text{m}</math> Femtosecond Laser Pulses .....</b> | 1383 |
| <i>Sean Kirkwood</i>  |      |

### **CTUR ADVANCES IN III-V LASERS:**

|   |      |
|---|------|
| <b>Advances In Quantum Dot Lasers: Classical Lasers And Single Artificial Atom Lasers With A Nanocavity.....</b>  | 1385 |
| <i>Yasuhiro Arakawa</i>   |      |
| <b>Helically Propagating Modes In Ingaas Nanoneedle Lasers Grown On Poly-Silicon And Silicon Substrates .....</b> | 1387 |
| <i>Thai-Truong Tran</i>   |      |

### **CTUS MID-INFRARED AND NONLINEAR DEVICES:**

|   |      |
|---|------|
| <b>Generation Of A Telecom-To-Mid-Infrared Spanning Supercontinuum Using Silicon-On-Insulator Wire Waveguides.....</b>              | 1389 |
| <i>Bart Kuyken</i>  |      |
| <b>Mid-Infrared Broadband Modulation Instability And 50 Db Raman Assisted Parametric Gain In Silicon Photonic Wires .....</b>       | 1391 |
| <i>Xiaoping Liu</i>   |      |
| <b>Low Propagation Loss Silicon-On-Sapphire Integrated Waveguides For The Mid-Infrared.....</b>                                     | 1393 |
| <i>David Moss</i>   |      |
| <b>Toothed Mid-Infrared Metal-Insulator-Metal Waveguides.....</b>   | 1395 |
| <i>Kevin Anglin</i>   |      |
| <b>Forming A Nonlinear Grating In Silicon Nanowire Waveguides Using The Intrinsic Anisotropic Kerr Nonlinearity Of Silicon.....</b> | 1397 |
| <i>Jeffrey Driscoll</i>   |      |
| <b>Ultra-Compact Coupled-Resonator Device For Four-Wave-Mixing Applications .....</b>   | 1399 |
| <i>Amir Atabaki</i>   |      |
| <b>Towards An Optical Frequency Comb With Mm-Scale Microresonators For Distributing Atomic Standards .....</b>                      | 1401 |
| <i>Scott Papp</i>   |      |

### **CTUT FEW-CYCLE INFRARED:**

|  |      |
|--|------|
| <b>Sub-Millijoule CEP Stable 1.6 Cycle Laser Pulses At 1.8 Micron .....</b>  | 1403 |
| <i>François Légaré</i>   |      |
| <b>High-Energy, Few-Cycle, Khz OPCPA At 2.1 <math>\mu\text{m}</math> Pumped By A Picosecond Cryogenic Yb:YAG Laser .....</b> | 1405 |
| <i>Kyung-Han Hong</i>  |      |

|   |      |
|---|------|
| <b>CEP-Preserving, Octave-Spanning IR OPA Using BIBO And 800-Nm Pump Pulses .....</b> | 1407 |
| <i>Nobuhisa Ishii</i>   |      |

### **CTUU ULTRAVIOLET LEDS: SCIENCE AND INNOVATION:**

|   |      |
|---|------|
| <b>Sub-300 Nm UV Leds With Defect Reduction Layer And Verticalinjection Architecture .....</b>                        | 1409 |
| <i>Christopher Chua</i>   |      |
| <b>265 Nm Light Emitting Diodes On Aln Single Crystal Substrates: Growth And Characterization .....</b>               | 1411 |
| <i>Ramon Collazo</i>  |      |
| <b>Carrier Dynamics In Al0.72Ga0.18N Multiple Quantum Wells Exhibiting Varying Internal Quantum Efficiencies.....</b> | 1413 |
| <i>Gregory Garrett</i>  |      |
| <b>Algan-Based Deep Ultraviolet Leds By Plasma Assisted Molecular Beam Epitaxy.....</b>                               | 1415 |
| <i>Chen-Kai Kao</i>   |      |
| <b>Surface Modified Structure For Photon Extraction Of UVLED .....</b>  | 1417 |
| <i>Yong Sung Kim</i>  |      |
| <b>Abnormal Polarization Switching Phenomenonin A-Plane Alxga1-Xn .....</b>   | 1419 |
| <i>Huei-Min Huang</i>   |      |
| <b>Impurities And Conductivity Control In Al-Rich Algan Alloys .....</b>  | 1421 |
| <i>Rajendra Dahal</i>   |      |

### **CTUV LASER LOCKING AND BEAM COMBINING:**

|  |      |
|--|------|
| <b>Active Coherent Combination Of &gt;200 Semiconductor Amplifiers Using A SPGD Algorithm.....</b>   | 1422 |
| <i>Shawn Redmond</i>   |      |
| <b>Buried-Heterostructure Phase-Locked Arrays Of Mid-Infrared Quantum Cascade Lasers.....</b>  | 1424 |
| <i>Alfredo Bismuto</i>   |      |
| <b>Optical Generation Of Narrow-Line RF By Injection Locking Of Modulated DFB Lasers .....</b>   | 1426 |
| <i>Garrett Schneider</i>   |      |
| <b>A 13C2H2 Frequency-Stabilized <math>\lambda/4</math>-Shifted DFB Laser Diode With An External Fiber Ring Cavity Having A Linewidth Of 2.6 Khz And A RIN Of -135 Db / Hz .....</b> | 1428 |
| <i>Keisuke Kasai</i>   |      |
| <b>Ultralow Noise, Etalon Stabilized, 10 Ghz Optical Frequency Comb Based On A Slab-Coupled Waveguide Amplifier.....</b>   | 1430 |
| <i>Josue Davila-Rodriguez</i>  |      |
| <b>Comparison Of Comb-Line Generation From Ingaasp/Inp Integrated Ring Mode-Locked Lasers .....</b>  | 1432 |
| <i>John Parker</i>   |      |
| <b>100-Ghz Channel Spacing And O-Band Quantum Dot Optical Frequency Comb Generator With Interference Injection Locking Technique .....</b>   | 1434 |
| <i>Naokatsu Yamamoto</i>   |      |

### **CTUW NONLINEAR OR PLASMONIC COMPONENTS:**

|   |      |
|---|------|
| <b>Intra- And Inter-Band Four-Wave Mixing In Silicon Coupled Resonator Optical Waveguides.....</b>  | 1436 |
| <i>Jun Ong</i>  |      |
| <b>Monolithically Integrated Ultrafast All-Optical Switch Consisting Of Intersubband Optical Nonlinear Waveguide And Michelson Interferometer .....</b>       | 1438 |
| <i>Ryoichi Akimoto</i>  |      |
| <b>Organic/Inorganic Hybrid Optical Amplifier With Wavelength Conversion .....</b>  | 1440 |
| <i>Jun Chen</i>   |      |
| <b>Experimental Performance Of A Continuously Tunable 40-Ghz Complex Weight Optical FIR Filter Using Wavelength Conversion And Chromatic Dispersion .....</b> | 1442 |
| <i>Salman Khaleghi</i>  |      |
| <b>Hitless Low-Power All-Optical Absorption Based Switching With Organics On Silicon.....</b>   | 1444 |
| <i>Taige Hou</i>  |      |
| <b>Quasi Passive Optical Switch Based On Transition Metal Oxide Device.....</b>   | 1446 |
| <i>She-Hwa Yen</i>  |      |

|   |      |
|---|------|
| <b>Design, Fabrication And Characterization Of Wideband Ultra Compact Coupler Between Plasmonic Slot And Silicon Waveguides .....</b> | 1448 |
| <i>Mohamed Swillam</i>  |      |

### **CTUX RAMAN OR BRILLOUIN CONVERSION AND APPLICATIONS:**

|   |      |
|---|------|
| <b>Synchronously Pumped Tunable Raman Laser In The Visible Pumped By An All-Fiber PM MOPA At 1060 Nm.....</b>                                       | 1450 |
| <i>Dejiao Lin</i>   |      |
| <b>Efficient Frequency Conversion At Low-Powers In A Silicon Microresonator Using Carrier Extraction.....</b>                                       | 1452 |
| <i>Jaime Cardenas</i>   |      |
| <b>Brillouin-Based DPSK Demodulation.....</b>   | 1454 |
| <i>Lucia Marazzi</i>  |      |
| <b>Broadband Anti-Stokes Generation In A CVD-Grown Single Crystal Diamond Pumped By Two Chirped Pulses .....</b>                                    | 1456 |
| <i>Hajime Nishioka</i>  |      |
| <b>On-Chip Stimulated Brillouin Scattering.....</b>   | 1458 |
| <i>Ravi Pant</i>  |      |
| <b>Fourth Order Cascaded Raman Shift In As<sub>38</sub>Se<sub>62</sub> Chalcogenide Suspended Core Fiber Pumped At 1.995 <math>\mu</math>M.....</b> | 1460 |
| <i>Mathieu Duhant</i>   |      |
| <b>On-Chip Mirrorless-Oscillation In Nonlinear Silicon Waveguides Using Non-Degenerate Four-Wave Mixing.....</b>                                    | 1462 |
| <i>Yan Yan</i>  |      |

### **CTUY ORGANIC EMITTERS AND ABSORBERS:**

|  |      |
|--|------|
| <b>Melt-Grown Molecular Mono-Crystals: Morphology, Optical Properties, Role Of The Substrate .....</b> | 1464 |
| <i>Silvia Tavazzi</i>  |      |
| <b>Low-Threshold Lasing In Organic Semiconductor Microcones.....</b>                                   | 1466 |
| <i>Tobias Grossmann</i>  |      |
| <b>Directional Photoluminescence Enhancement In Organic Flexible Microcavities.....</b>                | 1468 |
| <i>Maddalena Patrini</i>   |      |

### **CTUAA NANOSTRUCTURED MATERIALS AND DEVICES:**

|  |      |
|--|------|
| <b>Femtosecond Laser-Assisted Etching Of Three Dimensional Woodpile Micro-Channel Arrays In Fused Silica.....</b>        | 1470 |
| <i>Stephen Ho</i>  |      |
| <b>Formation Of Laser-Induced Periodic Structures In TiO<sub>2</sub> Crystals Depending On The Surface Quality .....</b> | 1472 |
| <i>Susanta Das</i>   |      |
| <b>Bragg Spectral Response Of Femtosecond Laser Induced Nanogratings Inside Fused Silica Glass .....</b>                 | 1474 |
| <i>Jianzhao Li</i>   |      |
| <b>Freezing Ultrashort Light Pulses By Exciton-Polariton Interference In Glass .....</b>                                 | 1476 |
| <i>Martynas Beresna</i>  |      |
| <b>Local Field Structure Of Focused Ultra-Short Pulses .....</b>   | 1478 |
| <i>Cyril Hnatovsky</i>   |      |

### **CWA THZ PLASMONICS:**

|   |      |
|---|------|
| <b>TM And TE1 Operation Of Cylindrical Terahertz Waveguides .....</b> | 1480 |
| <i>Daniel Grischkowsky</i>  |      |

## **CWB OCT, TOMOGRAPHY, AND SENSING:**

|   |      |
|---|------|
| <b>FDM Laser For Megahertz Retinal OCT Imaging</b> .....  | 1482 |
| <i>Robert Huber</i>   |      |
| <b>Ultra-High Resolution All-Reflective OCT System With A Compact Fiber-Based Supercontinuum Source</b> ..... | 1484 |
| <i>Khanh Kieu</i>   |      |
| <b>Towards A Miniaturized Optical Coherence Tomography System</b> .....                                       | 1486 |
| <i>Imran Akca</i>   |      |
| <b>Concurrent Multi-Scale Imaging Combining Optical Coherence Tomography With MRI</b> .....                   | 1488 |
| <i>Chia-Pin Liang</i>   |      |
| <b>Motion Compensation For Two Photon Microscopy By Optical Coherence Tomography Feedback</b> .....           | 1490 |
| <i>Serghei Malkov</i>   |      |
| <b>Non-Contact Human Cardiac Activity Monitoring Using A High Sensitivity Pulsed Laser Vibrometer</b> .....   | 1492 |
| <i>Chenchia Wang</i>  |      |
| <b>Tomographic Imaging With Single Detector Lateral Frequency Modulation Projections</b> .....                | 1494 |
| <i>Randy Bartels</i>  |      |

## **CWD SYMPOSIUM ON FIBER PARAMETRIC DEVICES AND APPLICATIONS I: TELECOM APPLICATIONS:**

|  |      |
|--|------|
| <b>All-Optical Regeneration Based On Phase Sensitive Amplification</b> .....   | 1496 |
| <i>Radan Slavik</i>  |      |
| <b>Optical Parametric Regeneration For Phase-Modulated Signals</b> .....   | 1498 |
| <i>Masayuki Matsumoto</i>  |      |
| <b>Experimental Demonstration Of Variable Optical Hexadecimal Coding/Decoding Of 10-Gbaud/S 16-QAM Using FWM In Hnlf</b> s ..... | 1500 |
| <i>Jian Wang</i>   |      |

## **CWE LASER FABRICATION FOR LIFE SCIENCE APPLICATIONS:**

|   |      |
|---|------|
| <b>Laser Control Of Self-Organization Process In Microscopic Region</b> .....             | 1502 |
| <i>Yukimasa Matsumura</i>   |      |
| <b>Laser Fabrication Of 3D Microenvironments For Small Cellular Populations</b> .....     | 1504 |
| <i>Jason Shear</i>  |      |
| <b>Laser Immobilization Of Photosynthetic Material On Screen Printed Electrodes</b> ..... | 1505 |
| <i>Ioanna Zergioti</i>  |      |

## **CWF TOWARD MORE EFFICIENT VISIBLE LEDs**

|  |      |
|--|------|
| <b>Highly Efficient Ingan/Gan Blue LED Grown On Si (111) Substrate</b> .....   | 1507 |
| <i>Jun-You Kim</i>   |      |
| <b>Optical Characterization Of Semipolar Gan Light-Emitting Diodes On Sapphire</b> .....   | 1509 |
| <i>Benjamin Leung</i>  |      |
| <b>On The Symmetry Of Efficiency-Versus-Carrier-Concentration Curves In Gainn/Gan Light-Emitting Diodes And Relation To Droop-Causing Mechanisms</b> ..... | 1511 |
| <i>Qi Dai</i>  |      |
| <b>Efficiency Droop Reduction In Ingan/Gan Light-Emitting Diodes By Graded-Thickness Multiple Quantum Wells</b> .....                                      | 1513 |
| <i>Chao-Hsun Wang</i>  |      |
| <b>Surface Plasmon Dispersion Engineering Via Double-Metallic Au / Ag Layers For Nitride Light-Emitting Diodes</b> .....                                   | 1515 |
| <i>Jing Zhang</i>  |      |
| <b>Monochromatic Organic Photodiodes Made By Stackable Ink-Jet Fabrication For Integrated Laser Chips</b> .....  | 1517 |
| <i>Tokuma Nakamichi</i>  |      |

## **CWG HIGH INTENSITY AND SHORT PULSE:**

|  |      |
|--|------|
| <b>Amplification To The Period-Doubling Limit In An All-Fiber Regenerative Amplifier For High-Intensity Laser Systems.....</b> | 1519 |
| <i>Ran Xin</i>   |      |
| <b>Characterization Of A High-Contrast Front-End Prototype For The Omega EP Laser Facility.....</b>                            | 1521 |
| <i>Christophe Dorrer</i>   |      |
| <b>High Temporal Contrast Front End With A Multipass Ti:Sa Amplifier And A Caf2-Based XPW Temporal Filter.....</b>             | 1523 |
| <i>Mikhail Kalashnikov</i>   |      |
| <b>50-MW, 12-Ps Nd:YVO4 Slab Amplifier For OPCPA Pumping.....</b>  | 1525 |
| <i>Clemens Heese</i>   |      |
| <b>Extreme Ultraviolet Free Electron Laser Seeded By High-Order Harmonic.....</b>  | 1527 |
| <i>Tadashi Togashi</i>   |      |
| <b>Tabletop Generation Of Carrier Envelope Phase Stabilized Multi-Mj Few-Cycle Pulses .....</b>                                | 1529 |
| <i>Alexandria Anderson</i>   |      |

## **CWH OPTICAL MEASUREMENTS AND WAVEFORM CHARACTERIZATION:**

|  |      |
|--|------|
| <b>Two-Color Interferometry Using Frequency Combs For High-Accuracy Self-Correction Of Air Refractive Index.....</b>                         | 1531 |
| <i>Kaoru Minoshima</i>   |      |
| <b>Toward A Picometer Displacement-Sensing Interferometry For The Next Generation Of Calculable Capacitor.....</b>                           | 1533 |
| <i>Mathieu Durand</i>  |      |
| <b>Experimental Implementation Of Classical Far-Field Phase-Sensitive Ghost Imaging .....</b>  | 1535 |
| <i>Dheera Venkatraman</i>  |      |
| <b>Ultra-Broadband Chirp Linearity Characterization With An Optical Frequency Comb.....</b>  | 1537 |
| <i>Zeb Barber</i>  |      |
| <b>Demonstration Of Dynamic Optical Arbitrary Waveform Generation With 5-Ns Record Lengths And 33-Ps Features.....</b>                       | 1539 |
| <i>Ryan Scott</i>  |      |
| <b>Narrow-Linewidth Chirped Frequency Comb From A Seeded Frequency-Shifted Feedback Ti:Sapphire Laser.....</b>                               | 1541 |
| <i>Oliver Muecke</i>   |      |
| <b>Single-Shot Frequency-Resolved-Optical-Gating Device For Complete Temporal Intensity-And-Phase Measurements Of Nanosecond Pulses.....</b> | 1543 |
| <i>Rick Trebino</i>  |      |

## **CWI ULTRAFAST PULSE GENERATION I:**

|  |      |
|--|------|
| <b>High-Fidelity Frontend Based On XPW Filter For High-Contrast Few-Cycle Opcpas .....</b>                       | 1545 |
| <i>Aurélie Jullien</i>   |      |
| <b>High Energy And Efficient Cross Polarized Wave Generation For High Contrast Ultrashort Laser Sources.....</b> | 1547 |
| <i>Aurélien Ricci</i>  |      |
| <b>Mid-IR Few-Cycle Pulses Approaching A 0.1 TW Peak Power .....</b>   | 1549 |
| <i>Audrius Pugzlys</i>   |      |
| <b>Octave-Spanning Carrier-Envelope Phase Stable Sub-3-Fs Pulse In Visible .....</b>                             | 1551 |
| <i>Kotaro Okamura</i>  |      |
| <b>Transmission Bragg-Grating Grisms For Pulse Compression.....</b>  | 1553 |
| <i>Nicolas Forget</i>  |      |
| <b>A Simple Linear Technique For Measuring The Carrier-Envelope Offset Phase Of Ultrashort Pulses.....</b>       | 1555 |
| <i>Borzsnyi Adam</i>   |      |

## **CWJ ADVANCED FORMATS:**

|  |      |
|--|------|
| <b>Advances In Modulation Formats For Fiber-Optic Transmission Systems .....</b> | 1557 |
| <i>Sander Jansen</i>   |      |

|   |      |
|---|------|
| <b>32 Gb/S Multilevel Modulation Of An 850 Nm VCSEL For Next-Generation Datacommunication Standards</b> ..... | 1559 |
| <i>Jonathan Ingham</i>  |      |
| <b>A 112 Gb/S Duobinary-Shaped Polmux DQPSK System With Enhanced Narrow Filtering Tolerance</b> .....         | 1561 |
| <i>Yu-Ting Hsueh</i>  |      |

## **CWK THZ METAMATERIALS II:**

|  |      |
|--|------|
| <b>Terahertz Metamaterials: Recent Developments And New Opportunities</b> .....              | 1563 |
| <i>Richard Averitt</i>   |      |
| <b>Drawn Metamaterial Fibers With Negative Permeability</b> .....                            | 1565 |
| <i>Alessandro Tuniz</i>  |      |
| <b>LC Resonance Modulation In Asymmetric Double Split-Ring Resonator Metamaterials</b> ..... | 1567 |
| <i>Jiaguang Han</i>  |      |
| <b>Active Tuning Of Coupled Resonance Modes In Terahertz Metamaterials</b> .....             | 1569 |
| <i>Dibakar Roy Chowdhury</i>   |      |

## **OPTOFLUIDIC BIOSENSING AND BIOMOLECULAR ANALYSIS:**

|   |      |
|---|------|
| <b>Opto-Fluidic Detection Platform For Pathogen Detection In Water</b> .....                                  | 1571 |
| <i>Peter Kiesel</i>   |      |
| <b>Detecting And Measuring Single Viruses And Nanoparticles With An Optical Microresonator</b> .....          | 1573 |
| <i>Jiangang Zhu</i>   |      |
| <b>Cell-Based Assays Using Photonic Crystal Biosensors</b> .....  | 1575 |
| <i>Brian Cunningham</i>   |      |
| <b>Plasmonic Monopole Antenna Arrays For Biosensing, Spectroscopy And Nm-Precision Optical Trapping</b> ..... | 1577 |
| <i>Arif Cetin</i>   |      |
| <b>Metal-Grating Trapezoidal Plasmonic Waveguide Sensor</b> .....   | 1579 |
| <i>Michelle Xu</i>  |      |
| <b>Highly Selective Single-Nucleotide Polymorphism Detection With Optofluidic Ring Resonator Lasers</b> ..... | 1581 |
| <i>Yuze Sun</i>   |      |

## **CWM SILICON MICRORESONATORS:**

|   |      |
|---|------|
| <b>Thermally Tuned Dual 20-Channel Ring Resonator Filter Bank In SOI (Silicon-On-Insulator)</b> .....               | 1583 |
| <i>Steven Spector</i>   |      |
| <b>Statistics Of Photon Transport In Hundreds Of Coupled Resonators</b> .....                                       | 1585 |
| <i>Shayan Mookherjea</i>  |      |
| <b>Correlations Between Light At Spectrally Distant Wavelengths In Coupled Microring Resonator Waveguides</b> ..... | 1587 |
| <i>Shayan Mookherjea</i>  |      |
| <b>Evanescence Coupling To The Slow-Light Modes In Periodically Patterned Silicon Microring Resonators</b> .....    | 1589 |
| <i>Jonathan Lee</i>   |      |
| <b>Designing Bessel Filters Based On Coupled-Resonator Optical Waveguides For Dispersion-Free Slow Light</b> .....  | 1591 |
| <i>Hsi-Chun Liu</i>   |      |

## **CWN SYMPOSIUM ON FIBER PARAMETRIC DEVICES AND APPLICATIONS II: PHYSICS AND SOURCES:**

|  |      |
|--|------|
| <b>Recent Advances In Fiber Optic Parametric Amplifiers</b> .....                          | 1593 |
| <i>John Harvey</i>   |      |
| <b>All-Fiber Optical Parametric Oscillator, Pumped By An All-Fiber Yb-Based MOPA</b> ..... | 1595 |
| <i>Gys Van Der Westhuizen</i>  |      |

|  |      |
|--|------|
| <b>Broadband, Spectrally Flat Frequency Combs And Short Pulse Sources From Phase Modulated CW:</b>                           |      |
| <b>Bandwidth Scaling And Flatness Enhancement Using Cascaded FWM</b> .....   | 1597 |
| <i>V. R. Supradeepa</i>  |      |
| <b>Parametric Replication And Sampling Of Optical Fields</b> .....   | 1599 |
| <i>Stojan Radic</i>  |      |
| <b>Fast Control Of A Phase-Sensitive Fiber-Optic Parametric Amplifier By Frequency-Swept Brillouin-Gain Dispersion</b> ..... | 1601 |
| <i>Thomas Whitehead</i>  |      |

## **CWO ADVANCED ULTRAFAST LASER PROCESSING:**

|  |      |
|--|------|
| <b>Synthesis Of Materials By Ultrafast Microexplosion</b> .....  | 1603 |
| <i>Saulius Juodkazis</i>   |      |
| <b>Exploring 5th Dimension Of Optical Recording With Ultrashort Light Pulses</b> .....                                     | 1605 |
| <i>Mindaugas Gecevicius</i>  |      |
| <b>Polarization Vortex Converter Imprinted By Femtosecond Laser Nanostructuring In Glass</b> .....                         | 1607 |
| <i>Martynas Beresna</i>  |      |
| <b>Materials Processing With Femtosecond Vortex Pulses</b> .....   | 1609 |
| <i>Cyril Hnatovsky</i>   |      |
| <b>Spatio-Temporally Focused Femtosecond Laser Pulses For Anisotropic Writing In Optically Transparent Materials</b> ..... | 1611 |
| <i>Dawn Vitek</i>  |      |
| <b>Femtosecond Laser Direct Fabrication Of Integrated Optical Wave Plates In Fused Silica</b> .....                        | 1613 |
| <i>Luís Fernandes</i>  |      |

## **CWP THIN DISK AND WAVEGUIDE LASER:**

|   |      |
|---|------|
| <b>CW And Modelocked Operation Of An Yb:(Sc,Y,Lu)2O3 Thin-Disk Laser</b> .....  | 1615 |
| <i>Clara Saraceno</i>   |      |
| <b>Energies Above 30 µJ And Average Power Beyond 100 W Directly From A Mode-Locked Thin-Disk Oscillator</b> .....                   | 1617 |
| <i>Dominik Bauer</i>  |      |
| <b>A Vbg-Stabilized Narrow Linewidth, Spectrally Tunable, Yb:Yag Thin-Disk Laser</b> .....  | 1620 |
| <i>Christina Willis</i>   |      |
| <b>Yb<sup>3+</sup> And Tm<sup>3+</sup> Doped Kgdluuy1-X-Y(WO<sub>4</sub>)<sub>2</sub> Channel Waveguide Lasers</b> .....            | 1622 |
| <i>K. Van Dalfsen</i>   |      |
| <b>Tm-Doped KY(WO<sub>4</sub>)<sub>2</sub> Planar Waveguide Laser Operating In The Continuous-Wave And Q-Switched Regimes</b> ..... | 1624 |
| <i>Uwe Griebner</i>   |      |
| <b>Sub-Joule Level High Repetition Rate Cryogenic Disk Laser</b> .....  | 1626 |
| <i>Ivan Mukhin</i>  |      |
| <b>Yb:YLF As Active Medium In The Thin Disk Laser</b> .....   | 1628 |
| <i>Kolja Beil</i>   |      |

## **CWQ ASTRO-COMBS AND SOURCE CALIBRATION :**

|  |      |
|--|------|
| <b>Calibration Of An Astronomical Spectrograph Using A 25 Ghz Laser Frequency Comb</b> .....                 | 1630 |
| <i>Gabriel Ycas</i>  |      |
| <b>Suppressed Mode Recovery In Nonlinear Fibers Of A Fabry-Perot-Filtered Frequency Comb</b> .....           | 1632 |
| <i>Tobias Wilken</i>   |      |
| <b>Power Amplification Of Astro-Combs: Optimization Of Filtering Schemes</b> .....                           | 1634 |
| <i>Guoqing Chang</i>   |      |
| <b>Broadband, Large-Spacing Frequency-Comb Employing Complementary Interleavers For Mode Filtering</b> ..... | 1636 |
| <i>Guoqing Chang</i>   |      |
| <b>Dual-Comb Based Measurement Of Frequency Agile Lasers</b> .....   | 1638 |
| <i>Ian Coddington</i>  |      |

|  |      |
|--|------|
| <b>White Light Sampling And Cross-Correlation Via Multi-Heterodyne Detection With An Optical Frequency Comb.....</b> | 1640 |
| <i>Marcus Bagnell</i>  |      |

## **CWR ULTRAFAST PULSE GENERATION II:**

|   |      |
|---|------|
| <b>Octave Wide Mid-Infrared Frequency Comb Rigorously Derived From Commercial Near-IR Mode-Locked Laser.....</b>        | 1642 |
| <i>Nick Lindecker</i>   |      |
| <b>Fiber-Optic Cherenkov Radiation In The Few-Cycle Regime.....</b>   | 1644 |
| <i>Guoqing Chang</i>  |      |
| <b>1.5 W Output Two-Color Femtosecond Optical Parametric Oscillator Pumped By A 7.4 W Femtosecond Yb:KGW Laser.....</b> | 1646 |
| <i>Robin Hegenbarth</i>   |      |
| <b>Pulse Compression And Fiber Delivery Of Sub-30 Fs Nanojoule Pulses At 830 Nm.....</b>                                | 1648 |
| <i>Claire Lefort</i>  |      |
| <b>The Role Of Plasma Formation In Mode-Locking Of Few-Cycle Ti:Sapphire Lasers: A Spatiotemporal Model.....</b>        | 1650 |
| <i>Li-Jin Chen</i>  |      |
| <b>Saturation Of The All-Optical Kerr Effect.....</b>   | 1652 |
| <i>Carsten Bree</i>   |      |
| <b>Temporal Compression Of Ultrafast Optical Filaments By Molecular Quantum Wakes In Atmosphere .....</b>               | 1654 |
| <i>Arman Fallahkhairia</i>  |      |

## **CTHA HIGH-SPEED ON-CHIP SIGNAL PROCESSING:**

|   |      |
|---|------|
| <b>High-Speed Data Transmission In Multi-Layer Deposited Silicon Photonics For Advanced Photonic Networks-On-Chip .....</b> | 1656 |
| <i>Aleksandr Biberman</i>   |      |
| <b>Ultra-Compact, Slow Light Enhanced, 160Gbaud De-Multiplexing In A Silicon Photonic Crystal Waveguide .....</b>           | 1658 |
| <i>Bill Corcoran</i>  |      |
| <b>On-Chip Optical Pulse Erasure For Ultrahigh Bandwidth Signal Processing .....</b>  | 1660 |
| <i>Ravi Pant</i>  |      |
| <b>Time Domain Switching / Demultiplexing Using Four Wave Mixing In Gainp Photonic Crystal Waveguides .....</b>             | 1662 |
| <i>Isabelle Cestier</i>   |      |
| <b>A Bidirectional SRL With Further Miniaturized RR Structure: Design And Its High-Speed All-Optical Switching.....</b>     | 1664 |
| <i>Zhuoran Wang</i>   |      |

## **CTHB EXTREME WAVELENGTH COMB GENERATION:**

|  |      |
|--|------|
| <b>High Harmonic Generation With Fs Frequency Combs And Limitations Due To Intracavity Plasma Dynamics .....</b>           | 1666 |
| <i>Jason Jones</i>   |      |
| <b>High Harmonic Generation Of Ti:S Fs Pulses Using A Passive Cavity Toward State Detection Of Single Indium Ion .....</b> | 1668 |
| <i>Tetsuya Ido</i>   |      |
| <b>Frequency Comb Metrology In The Extreme Ultraviolet .....</b>   | 1670 |
| <i>Kjeld Eikema</i>  |      |
| <b>Intracavity High Harmonic Generation Driven By Yb-Fiber Based MOPA System At 80mhz Repetition Rate .....</b>            | 1673 |
| <i>Akira Ozawa</i>   |      |
| <b>Direct Referencing Of A Quantum-Cascade-Laser At 4.3 <math>\mu</math>M To A Near-Infrared Frequency Comb .....</b>      | 1675 |
| <i>Marco Marangoni</i>   |      |

|   |      |
|---|------|
| <b>Octave Spanning Supercontinuum In An As<sub>2</sub>S<sub>3</sub> Taper Using Ultra-Low Pump Pulse Energy .....</b> | 1677 |
| <i>Darren Hudson</i>  |      |

### **CTHC GUIDED-WAVE OPTICAL SENSING:**

|  |      |
|--|------|
| <b>Edge Emitting Sensors For Accurate Quantification Of Hydrogen Composition Above 0.5% .....</b>  | 1679 |
| <i>Lynford Goddard</i>   |      |
| <b>Sensitized Silicon Ring Resonators For The Detection Of TNT In The Gas Phase.....</b>   | 1681 |
| <i>Ulrike Willer</i>   |      |
| <b>Probing Quantum Dot Cores, Their Interfaces And Thiol Cappings Non-Destructively In Dilute Solution Using Raman Scattering In Hollow Core Photonic Crystal Fiber.....</b> | 1683 |
| <i>Jacky S. W. Mak</i>   |      |
| <b>Photonic Crystal Slot Waveguide Spectroscopy For The Detection Of Chemical Warfare Simulants .....</b>  | 1685 |
| <i>Swapnajit Chakravarty</i>   |      |
| <b>Low-Cost PCB-Integrated Polymer Waveguide Sensor For Gas Detection .....</b>  | 1687 |
| <i>Nikolaos Bamiedakis</i>   |      |
| <b>Optical Gain Assisted Far-Field Sub-Wavelength Imaging .....</b>  | 1689 |
| <i>Weiguo Yang</i>   |      |
| <b>Single Nanoparticle Detection Using A Microcavity Laser .....</b>   | 1691 |
| <i>Lina He</i>   |      |

### **CTHD NEW WAVELENGTH FIBER LASERS:**

|   |      |
|---|------|
| <b>Mid-IR Fiber Lasers Based On Molecular Gas-Filled Hollow-Core Photonic Crystal Fiber .....</b>                         | 1693 |
| <i>Andrew Jones</i>   |      |
| <b>Mid-IR Supercontinuum (SC) Generation In ZBLAN Fiber Pumped By Tm-Doped Amplifier With Fused Silica SC Input .....</b> | 1695 |
| <i>Ojas Kulkarni</i>  |      |
| <b>0.4 Mw Average Power At 17.5μM From Frequency Mixing Output Of Two-Color Fiber Chirped Pulse Amplifier .....</b>       | 1697 |
| <i>Donna Strickland</i>   |      |
| <b>Direct Visible Lasers By Rare Earth Doped Waterproof Fluoro-Aluminate Fibers.....</b>                                  | 1699 |
| <i>Yasushi Fujimoto</i>   |      |
| <b>UV Light Generation Induced By Microwave Microplasma In Hollow-Core Optical Waveguides .....</b>                       | 1702 |
| <i>Raphael Jamier</i>   |      |

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|  |      |
|--|------|
| <b>A Terahertz Quantum-Cascade Laser With An Active Leaky-Wave Metamaterial Antenna.....</b>                               | 1704 |
| <i>Amir Tavallaei</i>  |      |
| <b>Metal-Metal Thz Quantum Cascade Laser Gain And Loss Investigated By Thz Time Domain Spectroscopy .....</b>              | 1706 |
| <i>Michael Martl</i>   |      |
| <b>Active Photonic Crystal Terahertz Laser Operating In Higher Bands.....</b>  | 1708 |
| <i>Alexander Benz</i>  |      |
| <b>True Phase-Matched Third-Order DFB Terahertz Quantum-Cascade Lasers Using Weakly-Coupled Cavities .....</b>             | 1710 |
| <i>Tsung-Yu Kao</i>  |      |
| <b>Gain Measurements Of A Metal-Metal Terahertz Quantum Cascade Laser Using An Integrated Terahertz Pulse Emitter.....</b> | 1712 |
| <i>David Burghoff</i>  |      |
| <b>Vertical Sub-Wavelength Mode Confinement In Thz Quantum Cascade Lasers.....</b>   | 1714 |
| <i>Elodie Strupiechonski</i>   |      |
| <b>Fast Tuning Of MEMS-Based Tunable Terahertz Wire Lasers.....</b>  | 1716 |
| <i>Qi Qin</i>  |      |

## **CTHF NONLINEAR MICROSCOPY:**

|  |      |
|--|------|
| <b>Remote Focusing Differential Multiphoton Microscopy: Application To Neuronal Imaging</b> .....        | 1718 |
| <i>Erich Hoover</i>  |      |
| <b>Controlled Spatiotemporal Focusing Through Turbid Media</b> .....                                     | 1720 |
| <i>Ori Katz</i>  |      |
| <b>In Vivo Imaging Using Second-Harmonic Nanoparticles</b> .....   | 1722 |
| <i>Chia-Lung Hsieh</i>   |      |
| <b>High-Speed Second Harmonic Generation Holographic Microscopy</b> .....                                | 1724 |
| <i>Randy Bartels</i>   |      |
| <b>Subharmonic Synchronization Of Picosecond Lasers For Stimulated Raman Scattering Microscopy</b> ..... | 1726 |
| <i>Wataru Umemura</i>  |      |
| <b>Coherent Anti-Stokes Raman Scattering (CARS) Holographic Biological Imaging</b> .....                 | 1728 |
| <i>Perry Edwards</i>   |      |
| <b>In-Line Holographic CARS Microscopy</b> .....   | 1730 |
| <i>Qian Xu</i>   |      |

## **CTHG MODE-LOCKED LASERS:**

|  |      |
|--|------|
| <b>High-Power Spectral Bistability In A Multi-Section Quantum Dot Laser Under Continuous-Wave Or Mode-Locked Operation</b> ..... | 1732 |
| <i>Daniil Nikitichev</i>   |      |
| <b>Two-Section InAs/InP Quantum-Dash Passively Mode Locked Lasers</b> .....  | 1734 |
| <i>Ricardo Rosales</i>   |      |
| <b>Femtosecond Semiconductor Lasers</b> .....  | 1736 |
| <i>Anne Tropper</i>  |      |
| <b>Femtosecond VcSELs With Up To 1-W Average Output Power</b> .....  | 1738 |
| <i>Oliver Siebe</i>  |      |
| <b>10-Ghz MIXSEL: An Integrated Ultrafast Semiconductor Disk Laser With 2.2 W Average Power</b> .....                            | 1740 |
| <i>Valentin Wittwer</i>  |      |
| <b>Passive Mode Locking Of Discrete Mode Laser Diodes</b> .....  | 1742 |
| <i>David Bitauld</i>   |      |

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|  |      |
|--|------|
| <b>Bandwidth Scalable, Coherent Transmitter Based On Parallel Spectral Slice Waveform Generation</b> .....   | 1744 |
| <i>David Geisler</i>   |      |
| <b>Analyses Of Polarization-Multiplexed WDM Transmission Characteristics Of High-Order Optical QAM Signals</b> .....   | 1746 |
| <i>Kazuro Kikuchi</i>  |      |
| <b>8×400-Gbit/S PDM-QPSK With 100 Ghz Channel Spacing Over 2000km Transmission Using MAP Detection</b> .....   | 1748 |
| <i>Junyi Wang</i>  |      |
| <b>Experimental Optical Multiplexing Of Two 20-Gbit/S QPSK Data Channels From Different Wavelengths Onto A Single 40-Gbit/S Star 16-QAM Using Fiber Nonlinearities</b> ..... | 1750 |
| <i>Xiaoxia Wu</i>  |      |
| <b>Optical 8PSK Transmitter Using Tandem IQ Modulators With Binary Driving Electrical Signals</b> .....  | 1752 |
| <i>Guo-Wei Lu</i>  |      |
| <b>Crosstalk-Induced OSNR Penalty Prediction On 112 Gb/S Polmux-QPSK System</b> .....  | 1754 |
| <i>Yu-Ting Hsueh</i>   |      |
| <b>Frequency-Domain Adaptive Equalization In Digital Coherent Receivers</b> .....  | 1756 |
| <i>Md. Faruk</i>   |      |

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|  |      |
|--|------|
| <b>Demonstration Of A 10 Ghz CMOS-Compatible Integrated Photonic Analog-To-Digital Converter</b> ..... | 1758 |
| <i>Matthew Grein</i>   |      |

|  |      |
|--|------|
| <b>Photonic Intensity Integrator With Combined High Processing Speed And Long Operation Time Window.....</b> | 1760 |
| <i>Mohammad H. Asghari</i>   |      |
| <b>Low Noise Stabilized Chirped Pulse Theta Laser For Photonic ADC .....</b>                                 | 1762 |
| <i>Dimitrios Mandridis</i>   |      |
| <b>Multitap Microwave Photonic Phase Filters .....</b>   | 1764 |
| <i>Ehsan Hamidi</i>  |      |
| <b>Flat-Top Microwave Photonic Filter Based On Optical Frequency Comb Shaping.....</b>                       | 1766 |
| <i>Minhyup Song</i>  |      |
| <b>A 16-Fs Aperture-Jitter Photonic ADC: 7.0 ENOB At 40 Ghz.....</b>   | 1768 |
| <i>Amir Nejadmalayeri</i>  |      |

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|   |      |
|---|------|
| <b>Electromagnetically Induced Transparency And Slow Light With Optomechanics .....</b> | 1770 |
| <i>Amir Safavi-Naeini</i>   |      |
| <b>Cavity Optomechanical Sensors For Atomic Force Microscopy .....</b>                  | 1772 |
| <i>Kartik Srinivasan</i>  |      |
| <b>Mechanical Trapping In A Quadratically Coupled Optomechanical Double Disk.....</b>   | 1774 |
| <i>Jeffrey Hill</i>   |      |
| <b>Tunable 2D Photonic Crystal Cavities For Cavity Electro-Optomechanics .....</b>      | 1776 |
| <i>Martin Winger</i>  |      |
| <b>High Q Optomechanical Resonators In Silicon Nitride Nanophotonic Circuits.....</b>   | 1778 |
| <i>King Yan Fong</i>  |      |
| <b>Silicon Opto-Acoustic Oscillator .....</b>   | 1780 |
| <i>Suresh Sridaran</i>  |      |
| <b>Electromechanically Tunable Photonic Crystal Cavities .....</b>                      | 1782 |
| <i>Leonardo Midolo</i>  |      |

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|---|------|
| <b>Optically Referenced Double Comb Interferometry: Applications And Technological Needs .....</b>                  | 1784 |
| <i>Jerome Genest</i>  |      |
| <b>High Accuracy Molecular Spectroscopy With Combs Broadened From 1.35 To 1.7 <math>\mu\text{M}</math> .....</b>    | 1786 |
| <i>Alexander Zolot</i>  |      |
| <b>1.5 Octave Highly Coherent Fiber Frequency Comb .....</b>  | 1788 |
| <i>Axel Ruehl</i>   |      |
| <b>Molecular Spectroscopy With Laser Frequency Combs .....</b>  | 1790 |
| <i>Nathalie Picqué</i>  |      |
| <b>Suitability Of Supercontinuum Light Near 2 <math>\mu\text{M}</math> For Coherent Dual Comb Spectroscopy.....</b> | 1792 |
| <i>Kevin Knabe</i>  |      |

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|  |      |
|--|------|
| <b>Distributed Sensing Inside Long-Length FBG At Region Beyond Laser Coherence Length Based On Synthesis Of Optical Coherence Function .....</b>         | 1794 |
| <i>Koji Kajiwara</i>   |      |
| <b>Integrated Optical Refractometer Based On Multimode Interference .....</b>  | 1796 |
| <i>Jaime Viegas</i>  |      |
| <b>Chirped And Tilted Fiber Bragg Grating Edge Filter For In-Fiber Sensor Interrogation.....</b>   | 1798 |
| <i>Tuan Guo</i>  |      |
| <b>Precise Signal Processing Schemes In Resonator Fiber Optic Gyro With Bipolar Digital Serrodyne Phase Modulation Technique .....</b>                   | 1800 |
| <i>Xijing Wang</i>   |      |
| <b>Enlargement Of Measurement Range By Double Frequency Modulations In One-Laser Brillouin Correlation-Domain Distributed Discrimination System.....</b> | 1802 |
| <i>Zuyuan He</i>   |      |

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| <b>VCSEL-Based Tilted Fiber Grating Vibration Sensing System .....</b>  | 1804 |
| <i>Tuan Guo</i>   |      |
| <b>Detection Of Single Nanoparticles Using A Nano Fiber-Taper .....</b> | 1806 |
| <i>Jiangang Zhu</i>   |      |

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|---|------|
| <b>Sub-Picosecond Microjoule-Class Fiber Lasers.....</b>  | 1808 |
| <i>Caroline Lecaplain</i>   |      |
| <b>Bench Top Milli-Joule Energy-Level Nanosecond Pulse Delivery Through Hollow-Core Fiber .....</b>                       | 1810 |
| <i>Benoit Beaudou</i>   |      |
| <b>Practically Deployable And Effectively Single Mode All-Solid Photonic Bandgap Fiber With Large Effective Area.....</b> | 1812 |
| <i>Masahiro Kashiwagi</i>   |      |
| <b>Quaternary One-Dimensional Photonic Crystal Cladding Hollow-Core Bragg Fiber .....</b>                                 | 1814 |
| <i>Lichao Shi</i>   |      |
| <b>Semiconductor Core Optical Fiber .....</b>   | 1816 |
| <i>John Ballato</i>   |      |

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| <b>Ultra Low Bending Loss Spiral Photonic Crystal Fibers In Terahertz Regime .....</b>                                       | 1818 |
| <i>Arti Agrawal</i>  |      |
| <b>Analysis Of Resonant Cavity Geometries In A Thz TE1-Mode Parallel-Plate Waveguide.....</b>                                | 1820 |
| <i>Victoria Astley</i>   |      |
| <b>A New Technique To Measure Loss, Effective Refractive Index And Electric Field Distribution Of Thz Porous Fibers.....</b> | 1822 |
| <i>Shaghik Atakaramians</i>  |      |
| <b>Suspended Core Polymer Fibers With Isolated Mode For Terahertz Guiding .....</b>  | 1824 |
| <i>Bora Ung</i>  |      |
| <b>Low-Loss Hollow Metallic Waveguides Efficiently Coupled To Terahertz Micro-Ring Quantum Cascade Lasers.....</b>           | 1826 |
| <i>Miriam Vitiello</i>   |      |
| <b>The Transition From TEM-Like Mode To Plasmonic Mode In Finite-Width Thz Parallel-Plate Waveguide.....</b>                 | 1828 |
| <i>Jingbo Liu</i>  |      |
| <b>Sub-Wavelength Plasmonic Mode Confinement In Semiconductor-Gap-Dielectric Waveguide In Thz Range .....</b>                | 1830 |
| <i>Hovhannes Haroyan</i>   |      |

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|---|------|
| <b>All-Optical Real-Time OFDM Transmitter And Receiver.....</b>   | 1832 |
| <i>Wolfgang Freude</i>  |      |
| <b>Characterization Of Fast And Power Efficient Optical OFDM Transmission System Based On Hartley Transform .....</b> | 1834 |
| <i>Michela Svaluto Moreolo</i>  |      |
| <b>Coarse Optical Orthogonal Frequency Division Multiplexing For Optical Datacommunication Applications.....</b>      | 1836 |
| <i>Sim Heung Lee</i>  |      |
| <b>Phase-Managed Alias Sampling In 1-Tb/S Coherent Optical OFDM .....</b>   | 1838 |
| <i>Lin Cheng</i>  |      |
| <b>Experimental Demonstration Of A Bandwidth Scalable LAN Emulation Over EPON Employing OFDMA .....</b>               | 1840 |
| <i>Lei Deng</i>   |      |

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| <b>Polarization Insensitive Grating Coupler For Lightwave Coupling Between Silicon Nanophotonic Waveguide And Surface Mounted Photodetector</b> ..... | 1842 |
| <i>Ryohei Takei</i>   |      |
| <b>Dynamic Sub-20 Ns Reconfiguration Of A Silicon CMOS Photonic Filter And Filter Shape Measurement</b> .....   | 1844 |
| <i>Binbin Guan</i>  |      |
| <b>Cmos-Compatible Temperature Insensitive Silicon Microring Modulator</b> .....  | 1846 |
| <i>Biswajeet Guha</i>   |      |
| <b>Performance Guidelines For WDM Interconnects Based On Silicon Microring Resonators</b> .....   | 1848 |
| <i>Kyle Preston</i>   |      |
| <b>A 4x12.5 Gbps CWDM Si Photonics Link Using Integrated Hybrid Silicon Lasers</b> .....  | 1850 |
| <i>Brian Koch</i>   |      |
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| <i>Anusha Pokhriyal</i>   |      |
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| <i>Nan-Kuang Chen</i>   |      |
| <b>Optimization Of Defect Hole Placement In Resonant Cavity Sensors</b> .....   | 1858 |
| <i>Christopher Kang</i>   |      |
| <b>A Novel Mechano-Optical Sensor Based On Read-Out With A Si3N4 Grated Waveguide</b> .....   | 1860 |
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| <i>Jiangang Zhu</i>   |      |
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| <i>Robert Boyd</i>  |      |
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| <i>Piotr Maslowski</i>   |      |
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| <i>Mark Allen</i>  |      |
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| <i>Stephen So</i>  |      |
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| <i>Feng Lu</i>   |      |
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| <b>LED-Based CO<sub>2</sub> Sensor For Balloon Deployment.....</b>   | 1890 |
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| <i>Simon Lefrancois</i>   |      |
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| <i>Emmanuel Hugonnot</i>  |      |
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| <i>Chi Zhang</i>  |      |
| <b>Influence Of Modulation Of Pump And Seed Signals On Fiber Amplification Of Broadband Pulses.....</b>                         | 1900 |
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| <i>Akira Shirakawa</i>  |      |
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| <b>Towards A Real-Time Electro-Optical Thz Microscope Using A Demodulating Optical Detector Array.....</b> | 1906 |
| <i>Gunnar Spickermann</i>  |      |
| <b>Space-Time Features Of Thz Emission From Optical Rectification In Sub-Wavelength Areas .....</b>        | 1908 |
| <i>Sze Phing Ho</i>  |      |
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| <i>Hua Chen</i>  |      |
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| <i>Emmanuel Abraham</i>  |      |
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| <i>Jaewook Ahn</i>   |      |

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| <i>Ali Fard</i>  |      |

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| <b>Multiplexed Fluorescence Lifetime Microscopy By Frequency-Sweeping Fourier Spectroscopy</b>                    | 1922 |
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| <i>Andreas Schoenle</i>   |      |
| <b>Double-Helix 3D Photo-Activation Localization Microscopy With A Phase Mask For Efficient Photon Collection</b> | 1927 |
| <i>Ginni Grover</i>   |      |
| <b>Efficient Schemes For Adaptive Optics In High-Resolution Microscopy</b>  | 1929 |
| <i>Martin Booth</i>   |      |
| <b>Contrast Enhancement By Multi-Pass Phase-Conjugation Microscopy</b>  | 1931 |
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| <i>Junyi Wang</i>  |      |
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| <i>John Zweck</i>  |      |
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| <i>Jonathan Klamkin</i>  |      |
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| <i>Sophie Laroche</i>  |      |
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| <i>Nazanin Hoghooghi</i>   |      |
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| <i>Robert Palmer</i>   |      |
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|  |      |
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### **CTHBB CLEO SYMPOSIUM ON BROADBAND SPECTROSCOPY: NEW TECHNIQUES AND SOURCES III: SOURCES:**

|  |      |
|--|------|
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|  |      |
|--|------|
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|  |      |
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|  |      |
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|  |      |
|--|------|
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| <i>Joseph Melinger</i>   |      |

### **CTHFF FILAMENTATION:**

|   |      |
|---|------|
| <b>Triggering, Guiding And Deviation Of Long Spark Discharges With Femtosecond Laser Filament</b>                         | 2035 |
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| <i>Ido Kaminer</i>  |      |

|   |      |
|---|------|
| <b>Efficient Third Harmonic Generation By Two Crossing Filaments.....</b> | 2045 |
| <i>Magali Durand</i>  |      |
| <b>Digital Reverse Propagation In Focusing Kerr Media .....</b>           | 2047 |
| <i>Alexandre Goy</i>  |      |

### **CTHGG SPATIAL MULTIPLEXING AND CROSSTALK:**

|  |      |
|--|------|
| <b>Multiple-Input Multiple-Output With Predistortion And Signal Processing For Multimode Fiber Links .....</b>     | 2049 |
| <i>Kumar Appaiah</i>   |      |
| <b>Propagation Of Laguerre-Gaussian Mode Light Through Multi-Core Fiber At Telecom Wavelength .....</b>            | 2051 |
| <i>Yoshinari Awaji</i>   |      |
| <b>Ultrafast And High-Spectral-Density Optical Communications Systems.....</b>                                     | 2053 |
| <i>Masataka Nakazawa</i>   |      |
| <b>Improving Tolerance Toward Optical In-Band Crosstalk By Employing A High Pass Filter.....</b>                   | 2055 |
| <i>Jeong Hwang</i>   |      |
| <b>Dual Functional Optical Amplifier With Electrooptic Gain Medium Of Er<sup>3+</sup> Doped PLZT Ceramics.....</b> | 2057 |
| <i>Jingwen Zhang</i>   |      |

### **CTHHH WAVEGUIDES AND PASSIVE COMPONENTS:**

|  |      |
|--|------|
| <b>Low-Loss Silicon-On-Diamond Optical Waveguides.....</b>   | 2059 |
| <i>Di Liang</i>  |      |
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| <i>Jason Orcutt</i>  |      |
| <b>Suppression And Control Over The Decay Of A Leaky Mode Through A Transverse Refractive Index Gradient .....</b> | 2063 |
| <i>Yonatan Plotnik</i>   |      |
| <b>Novel Three-Dimensional Hollow-Core Waveguide Using High-Contrast Sub-Wavelength Grating.....</b>               | 2065 |
| <i>Weijian Yang</i>  |      |
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| <i>Amir Hosseini</i>   |      |
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| <i>Ksenia Dolgaleva</i>  |      |
| <b>Add-Drop Filter Incorporating A Mode-Conversion Cavity .....</b>  | 2071 |
| <i>Marcel Pruessner</i>  |      |

### **CFA OPTOMECHANICS II:**

|  |      |
|--|------|
| <b>Full Phononic Bandgap In 2D-Optomechanical Crystals.....</b>                                      | 2073 |
| <i>Thiago Mayer Alegre</i>   |      |
| <b>Low Power Resonant Optical Excitation Of An Optomechanical Cavity .....</b>                       | 2075 |
| <i>Armand Rundquist</i>  |      |
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| <i>Seung Hoon Lee</i>  |      |
| <b>Optomechanical Coupling In Slot-Type Photonic Crystal Cavities.....</b>                           | 2079 |
| <i>Ying Li</i>   |      |
| <b>Mechanically Compliant High Contrast Grating Mirrors For Radiation Pressure Cooling.....</b>      | 2081 |
| <i>Utku Kemiktarak</i>   |      |
| <b>Reflective Silicon Binary Diffraction Grating For Visible Wavelengths.....</b>                    | 2083 |
| <i>Marco Fiorentino</i>  |      |
| <b>Gradient-Index Adiabatic Impedance Matching (Grin-Aim) Antireflective Diffractive Optics.....</b> | 2085 |
| <i>Chih-Hao Chang</i>  |      |

## **CFB INTEGRATION ON SILICON:**

|   |      |
|---|------|
| <b>Multi-Layer Low-Temperature Deposited CMOS Photonics For Microelectronics Backend Integration.....</b>                                     | 2087 |
| <i>Nicolás Sherwood-Droz</i>  |      |
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| <i>Alexander Kern</i>   |      |
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| <i>Benjamin Lee</i>   |      |

## **CFC OPTICAL FREQUENCY STANDARDS AND SIGNAL DISSEMINATION:**

|   |      |
|---|------|
| <b>Portable Acetylene Frequency References Inside Sealed Hollow-Core Kagome Photonic Crystal Fiber .....</b>          | 2093 |
| <i>Chenchen Wang</i>  |      |
| <b>Precision Calculation Of Blackbody Radiation Shifts For Metrology At The 18th Decimal Place.....</b>               | 2095 |
| <i>Charles Clark</i>  |      |
| <b>Optical Direct Comparison Of Two 87Sr Lattice Clocks Using A &gt;50km Fiber Link.....</b>                          | 2096 |
| <i>Tetsuya Ido</i>  |      |
| <b>Low-Noise Remote Transfer Of A Phase-Encoded Frequency Comb Through A 320m Phase-Stabilized Fiber .....</b>        | 2098 |
| <i>Matthew Kirchner</i>   |      |
| <b>Ultra-Low Phase Noise Microwaves From Optical References .....</b>   | 2100 |
| <i>Jennifer Taylor</i>  |      |
| <b>Microwave Generation With Low Residual Phase Noise From A Femtosecond Fiber Laser With An Intracavity EOM.....</b> | 2102 |
| <i>William Swann</i>  |      |

## **CFD HIGH SPEED LASERS:**

|   |      |
|---|------|
| <b>40-Gb/S Direct Modulation Of Optical Injection-Locked Photonic Crystal Laser .....</b>                                   | 2104 |
| <i>Chin-Hui Chen</i>  |      |
| <b>30 Ghz Relaxation Resonance Frequency And 35 Gbit/S Data Rate In Single-Mode 850 Nm Vcsels .....</b>                     | 2106 |
| <i>James Lott</i>   |      |
| <b>980-Nm Vcsels For Optical Interconnects At 25 Gb/S Up To 120 °C And 12.5 Gb/S Up To 155 °C .....</b>                     | 2108 |
| <i>Werner Hofmann</i>   |      |
| <b>Low Power Polarization Modulation Of Vertical Cavity Surface Emitting Lasers .....</b>                                   | 2110 |
| <i>Meng Peun Tan</i>  |      |
| <b>High-Output-Power 10.3-Gb/S Operation Of 1.27-μM Quantum-Dot DFB Lasers For 10G-EPON .....</b>                           | 2112 |
| <i>Kan Takada</i>   |      |
| <b>Multiple-Wavelength 25-Gb/S Surface-Emitting Laser Array For Short-Reach WDM Links .....</b>                             | 2114 |
| <i>Koichiro Adachi</i>  |      |
| <b>Enhanced Frequency Response In Monolithically Integrated Coupled Cavity Lasers And Electro-Absorption Modulator.....</b> | 2116 |
| <i>Anna Tauke-Pedretti</i>  |      |

## **CFE BEAM COMBINING AND STABILIZATION OF FIVER AMPLIFIERS:**

|   |      |
|---|------|
| <b>Collinear Coherent Beam Combining Of Two Ytterbium Doped Single Frequency Fiber Amplifiers.....</b>    | 2118 |
| <i>Henrik Tünnermann</i>  |      |
| <b>Demonstration Of Coherent Beam Combination Of Fiber Amplifiers In 100ns-Pulse Regime.....</b>          | 2120 |
| <i>Laurent Lombard</i>  |      |
| <b>Coherent Beam Combining Of Fiber Amplifiers In A Kw Regime.....</b>                                    | 2122 |
| <i>Angel Flores</i>   |      |
| <b>Fiber Laser CPA System Delivering 120 μJ Femtosecond Pulses Using Coherent Combining .....</b>         | 2124 |
| <i>Arno Klenke</i>  |      |
| <b>High Power Carrier-Envelop Phase Stabilized 1030 Nm Pulses Amplified From A Ti:Sapphire Laser.....</b> | 2126 |
| <i>Wenxue Li</i>  |      |

|  |      |
|--|------|
| <b>Long-Term Stable Passive Synchronization Of 50-<math>\mu</math>J, 690-Fs, 0.4-Mhz Yb-Doped Fiber Amplifier With A Mode-Locked Ti:Sapphire Laser .....</b> | 2128 |
| <i>Dai Yoshitomi</i>   |      |

## **CFF NOVEL RAMAN SENSING TECHNIQUES I:**

|  |      |
|--|------|
| <b>High-Bandwidth, Spatially Resolved Thermometry In Reacting Flows Using Femtosecond-CARS Line Imaging .....</b>  | 2130 |
| <i>Waruna Kularilaka</i>   |      |
| <b>Single-Beam CARS Imaging For Reacting Flow Diagnostics .....</b>  | 2132 |
| <i>Marcos Dantus</i>   |      |
| <b>Broadband Coherent Anti-Stokes Raman Microspectroscopy With Shaped Femtosecond Pulses .....</b>   | 2134 |
| <i>Marcus Motzkus</i>  |      |
| <b>Advances In Fiber-Based Picosecond Coherent Anti-Stokes Raman Scattering Thermometry In Reacting Flows .....</b>  | 2136 |
| <i>Paul Hsu</i>  |      |
| <b>Combining Angle-Resolved Raman Scattering And Confocal Raman Microscopy For Rationally Designing Two-Dimensional Metallic Arrays As High Performing SERS Substrates .....</b> | 2138 |
| <i>Zhaolong Cao</i>  |      |

## **CFG ULTRAFAST PULSE SHAPING:**

|  |      |
|--|------|
| <b>Line-By-Line Pulse-Shaping Reconfigurable At Ghz Rates Using Injection-Locked Vcsels.....</b>   | 2140 |
| <i>Sharad Bhooplapur</i>   |      |
| <b>Line-By-Line Pulse Shaping At Spectral Resolution Below 1 Ghz.....</b>  | 2142 |
| <i>John Willits</i>  |      |
| <b>Precise Spectral Shaping Of Mode-Locked Oscillations .....</b>  | 2144 |
| <i>Shai Yefet</i>  |      |
| <b>10-Fs Deep-Ultraviolet Pulses Without Second- And Third-Order Dispersions .....</b>   | 2146 |
| <i>Yuichiro Kida</i>   |      |
| <b>Generation And Delivery Of 496-Ghz Optical Pulse Train Over 25-Km Single-Mode Fiber Using A Line-By-Line Optical Pulse Shaper .....</b>                     | 2148 |
| <i>Chen-Bin Huang</i>  |      |
| <b>Microwave Photonic Filters With &gt; 65-Db Sidelobe Suppression Using Directly Generated Broadband, Quasi-Gaussian Shaped Optical Frequency Combs .....</b> | 2150 |
| <i>Rui Wu</i>  |      |
| <b>Mhz Update-Rate Reflectometry By Direct Mapping Of The Full Axial-Line Profile In A Single-Shot Oscilloscope Trace .....</b>                                | 2152 |
| <i>Antonio Malacarne</i>   |      |

## **CFH ACCESS NETWORKS:**

|   |      |
|---|------|
| <b>Automatic Wavelength Control Method Using Rayleigh Rackscattering For WDM-PON With Tunable Lasers.....</b>           | 2154 |
| <i>Sang-Rok Moon</i>  |      |
| <b>Optical Comb Sources For Suppression Of Stimulated Brillouin Scattering In Long-Haul Analog Photonic Links .....</b> | 2156 |
| <i>Jason McKinney</i>   |      |
| <b>An Experimental Investigation Of Rof-Enabled MIMO DAS In A Non-Light-Of-Sight Environment.....</b>                   | 2158 |
| <i>Kun Zhu</i>  |      |
| <b>A Low-Cost, Bandwidth-Efficient Fabry-Pérot Optical Millimeter-Wave Generator Driven By Low RF Frequencies .....</b> | 2160 |
| <i>Jie Liu</i>  |      |
| <b>Effects Of High-Order Laser Distortion Products In Radio Over Free-Space Optical Links.....</b>                      | 2162 |
| <i>George Gordon</i>  |      |
| <b>High-Speed Full-Duplex Optical Wireless Communication Systems For Indoor Applications .....</b>                      | 2164 |
| <i>Ke Wang</i>  |      |

|   |      |
|---|------|
| <b>2.5-Gb/S Broadcast Signal Transmission In A WDM-PON By Using A Mutually Injected Fabry-Pérot Laser Diodes.....</b> | 2166 |
| <i>Sang-Hwa Yoo</i>   |      |

### **CFI PHOTONIC CRYSTAL DEVICES:**

|   |      |
|---|------|
| <b>Ultralow-Power All-Optical Memory Using Photonic Crystal Nanocavities With Novel Buried Heterostructure.....</b> | 2168 |
| <i>Kengo Nozaki</i>   |      |
| <b>Third-Harmonic Generation In Engineered Slow Light Photonic Crystal Waveguides In Chalcogenide Glasses.....</b>  | 2170 |
| <i>Christelle Monat</i>   |      |
| <b>Highly-Efficient Four-Wave Mixing In A Coupled-Nanocavity Waveguide .....</b>                                    | 2172 |
| <i>Nobuyuki Matsuda</i>   |      |
| <b>Transmission Properties Of A Free-Standing Lithium Niobate Photonic Crystal Waveguide .....</b>                  | 2174 |
| <i>Reinhard Geiss</i>   |      |
| <b>Multiply Resonant Photonic Crystal Nanocavities With Broadband Tunability .....</b>                              | 2176 |
| <i>Sonia Buckley</i>  |      |
| <b>Photonic Bandgap Fusion By Magnetically Aligned 3D Photonic Bandgap Structures .....</b>                         | 2178 |
| <i>Hyoki Kim</i>  |      |
| <b>Bottom-Up Photonic Crystal Cavities Formed By III-V Nanopillar Arrays .....</b>                                  | 2180 |
| <i>Adam Scofield</i>  |      |

### **CFJ OPTICAL COMPONENTS:**

|   |      |
|---|------|
| <b>Integration Of Semiconductor Mach-Zehnder Modulator With Tunable-Wavelength Laser Diode.....</b>                       | 2182 |
| <i>Yasuo Shibata</i>  |      |
| <b>In-Line And Compact QWIP For Reference Signal Detection With Quantum Cascade Lasers At 4.6<math>\mu</math>M .....</b>  | 2185 |
| <i>Germano Penello</i>  |      |
| <b>Chip-Scale Multiple Quantum Well Based Optical Interconnects .....</b>   | 2187 |
| <i>Rohit Nair</i>   |      |
| <b>Hybrid-Integrated And Polarization Insensitive 25-Gbaud/S D(Q)PSK Receiver Based On Polymer PLC .....</b>              | 2189 |
| <i>Jin Wang</i>   |      |
| <b>Design Of A Novel, Cost-Effective Wide Field-Of-View Surface-Normal Optical Phased Array.....</b>                      | 2191 |
| <i>Harish Subbaraman</i>  |      |
| <b>Adaptive Wavefront Aberration Correction In A Free-Space Fiber-Optic System Based Only On The Received Power .....</b> | 2193 |
| <i>David Sinefeld</i>   |      |

### **CFK OPTICAL FREQUENCY COMBS:**

|  |      |
|--|------|
| <b>Ultrabroadband Frequency Comb Generation At 1 <math>\mu</math>M In A Silicon-Nitride Ring Resonator .....</b> | 2195 |
| <i>Yoshitomo Okawachi</i>  |      |
| <b>Attosecond Ti:Sapphire Pulse Train Phase Noise .....</b>  | 2197 |
| <i>Andrew Benedick</i>   |      |

### **CFL NOVEL SEMICONDUCTOR LASER MATERIALS:**

|   |      |
|---|------|
| <b>Origin Of The Temperature Dependence Of Threshold Current In InP/AlGaInP Quantum Dot Lasers.....</b> | 2199 |
| <i>Peter Smowton</i>  |      |
| <b>Band Filling In P-Doped InAs Quantum Dot Lasers.....</b>   | 2201 |
| <i>Matthew Hutchings</i>  |      |
| <b>A Germanium-On-Silicon Laser For On-Chip Applications .....</b>                                      | 2203 |
| <i>Jurgen Michel</i>  |      |
| <b>Optical Gain In GainnAs And Gainnassb Quantum Wells.....</b>   | 2205 |
| <i>Peter Blood</i>  |      |

|   |      |
|---|------|
| <b>Characteristics Of Gan-Based Vertical Cavity Surface Emitting Lasers With Hybrid Mirrors .....</b>                                       | 2207 |
| <i>Bo Siao Cheng</i>  |      |
| <b>Optical Gain And Green/Red Vertical Cavity Surface Emitting Lasing From Cdse-Based Colloidal Nanocrystal Quantum Dot Thin Films.....</b> | 2209 |
| <i>Cuong Dang</i>   |      |

### **CFM OPTICAL FIBER MEASUREMENT:**

|   |      |
|---|------|
| <b>Theoretical Investigation Of Length-Dependent Flicker-Phase Noise In Opto-Electronic Oscillators .....</b>               | 2211 |
| <i>Andrew Docherty</i>  |      |
| <b>All-Normal-Dispersion Fiber Lasers For Frequency Metrology .....</b>   | 2213 |
| <i>Cagri Senel</i>  |      |
| <b>Measurement Range Expansion In Brillouin Optical Correlation-Domain Analysis System .....</b>                            | 2215 |
| <i>Kwanil Lee</i>   |      |
| <b>High Resolution S2 Mode Imaging Of Photonic Bandgap Fiber .....</b>  | 2217 |
| <i>Jeffrey Nicholson</i>  |      |
| <b>Index Phase Profile And Pitch Measurement Technique Of Fiber Bragg Gratings Using UV-Induced Blue Luminescence .....</b> | 2219 |
| <i>Serge Tsquier</i>  |      |
| <b>Optical Low-Coherence Interferometry For Reconstruction Of The Modalcontent In Few-Mode Fibers .....</b>                 | 2221 |
| <i>Damian Schimpf</i>   |      |
| <b>Low Distortion And High SNR Analog Signal Multicasting Using Self-Seeded Parametric Mixer.....</b>                       | 2223 |
| <i>Andreas Wiberg</i>   |      |

### **CFN NOVEL RAMAN SENSING TECHNIQUES II:**

|  |      |
|--|------|
| <b>Double-Resonant Enhancement Of Surface Enhanced Raman Scattering Using High Contrast Grating Resonators.....</b>        | 2225 |
| <i>Vadim Karagodsky</i>  |      |
| <b>Plasmonic Coupling Of Sio2–Ag “Post-Cap” Nanostructures And Silver Film For Surface-Enhanced Raman Scattering .....</b> | 2227 |
| <i>Hsin-Yu Wu</i>  |      |
| <b>Direct Imprinted Gratings On Nanoporous Gold As Effective SERS Substrates .....</b>                                     | 2229 |
| <i>Yang Jiao</i>   |      |
| <b>Broadband Polarization-Insensitive Arrayed Waveguide Gratings For Raman Spectroscopy .....</b>                          | 2231 |
| <i>Nur Ismail</i>  |      |
| <b>Surface Enhanced Raman Scattering Using Planar Dielectric Structures .....</b>  | 2233 |
| <i>Aida Delfan</i>   |      |
| <b>Temperature Dependence Of Surface-Enhanced Raman Scattering On Nanostructured Plasmonic Surfaces .....</b>              | 2235 |
| <i>James Hugall</i>  |      |
| <b>A New Approach For Fluorescence Subtraction In Raman Spectroscopy .....</b>   | 2237 |
| <i>Qun Li</i>  |      |

### **CFO ULTRAFAST DYNAMICS:**

|   |      |
|---|------|
| <b>Sesams For High Power Oscillators: Damage Thresholds And Design Guidelines.....</b>                                    | 2239 |
| <i>Clara Saraceno</i>   |      |
| <b>Ultrafast Nonlinear Optical Processes And Free-Carrier Lifetime In Silicon Nanowaveguides.....</b>                     | 2241 |
| <i>Ali Motamedi</i>   |      |
| <b>Polarization Anisotropy Of Transient Carrier Dynamics In Single Si Nanowires.....</b>                                  | 2243 |
| <i>Minah Seo</i>  |      |
| <b>Multi Wavelength Characterization Of Ultra Fast Carrier Dynamics In Inas/Inp Quantum Dash Optical Amplifiers .....</b> | 2245 |
| <i>Amir Capua</i>   |      |
| <b>Single-Shot Time-Frequency Imaging Of Phonon-Polariton Dispersion In Ferroelectric Linbo3 .....</b>                    | 2247 |
| <i>Ikufumi Katayama</i>   |      |

|   |      |
|---|------|
| <b>Second Harmonic Nanoprobes For Femtosecond Laser Pulse Characterization In Complex Microstructures .....</b> | 2249 |
| <i>Haifeng Li</i>   |      |
| <b>Lighthouse Ultrafast Spectroscopy: High Speed Scanning With A Spinning Birefringent Delay Crystal .....</b>  | 2251 |
| <i>Randy Bartels</i>  |      |

### **CFP MEASUREMENT AND PROCESSING:**

|   |      |
|---|------|
| <b>100-Gb/S RZ-DQPSK Signal Monitoring Using Time-Stretch Enhanced Recording Oscilloscope.....</b>            | 2253 |
| <i>Ali Fard</i>   |      |
| <b>All-Optical Logic Gate For 160 Gbit/S DPSK Signals In A Highly Nonlinear Glass Chip.....</b>               | 2255 |
| <i>Trung Vo</i>   |      |
| <b>Automatic Higher-Order Dispersion Measurement And Compensation Of A 1.28 Tbaud Signal.....</b>             | 2257 |
| <i>Yvan Paquot</i>  |      |
| <b>Autonomous Optical Buffer With Function Of Storing Multiple Packets In Each Of Fiber Delay Lines .....</b> | 2259 |
| <i>Hiroki Kishikawa</i>   |      |
| <b>Very Simple Tunable Optical Data Storage Of 8Bit 1Gbps Data Packets Up To 500ns.....</b>                   | 2261 |
| <i>Stefan Preussler</i>   |      |

### **CLEO: APPLICATIONS & TECHNOLOGY TECHNICAL SESSIONS: AMA FUNDAMENTALS OF LASER PROCESSING FOR ADDING, MODIFYING, AND JOINING MATERIALS:**

|   |      |
|---|------|
| <b>Use Of Fundamental Laser Material Interaction Parameters In Laser Welding .....</b>                                      | 2263 |
| <i>Stewart Williams</i>   |      |
| <b>Fabrication Of Transparent Electrodes From AZO Nanoparticles By Pulsed Laser Annealing.....</b>                          | 2265 |
| <i>Kun-Tso Chen</i>   |      |
| <b>Selective Tuning Of Silicon Photonic Crystal Cavities Via Laser-Assisted Local Oxidation .....</b>                       | 2267 |
| <i>Jiangjun Zheng</i>   |      |
| <b>Matrix Assisted Growth Of Nanoparticles And Nanoporous Thin Films: An Emerging Approach .....</b>                        | 2269 |
| <i>Matthew Steiner</i>  |      |
| <b>Effects Of Growth Temperature On Epitaxial Thin Films Of Vanadium Dioxide Grown By Pulsed<br/>Laser Deposition .....</b> | 2270 |
| <i>Joyeeta Nag</i>  |      |
| <b>Thermodynamics Of Resonant Infrared Matrix-Assisted Pulsed Laser Evaporation Of Luminescent<br/>Dendrimers.....</b>      | 2272 |
| <i>Richard Haglund</i>  |      |

### **AMB LASER SYSTEMS DEVELOPMENT FOR INDUSTRIAL APPLICATIONS:**

|  |      |
|--|------|
| <b>1-Ps Thin Disk Amplifier For Advanced Materials Processing .....</b>  | 2274 |
| <i>Clemens Hoenninger</i>  |      |
| <b>Phased Locking Of Two Lasers With Self-Adjusted Minimal Coupling .....</b>                                    | 2276 |
| <i>Eitan Ronen</i>   |      |
| <b>Interferometric Measurement Of Refractive Index Difference Applied To Composite Waveguide<br/>Lasers.....</b> | 2278 |
| <i>Huai-Chuan Lee</i>  |      |

### **AMC PATHS TO HIGH EFFICIENCY PHOTOVOLTAICS:**

|   |      |
|---|------|
| <b>High Efficiency Photovoltaics: Recent Progress And Long Term Goals .....</b>   | 2280 |
| <i>Nicholas Ekins-Daukes</i>  |      |
| <b>Silicon Nanowire/Poly(3,4-Ethylenedioxythiophene): Poly(Styrenesulfonate) Core-Sheath<br/>Heterojunction Solar Cells .....</b> | 2282 |
| <i>Hong-Jhang Syu</i>   |      |

|  |      |
|--|------|
| <b>Application Of Hybrid Dielectric - Metallic Back Reflectors To Thin Film Amorphous Silicon Solar Cells .....</b>  | 2284 |
| <i>James Mutitu</i>  |      |
| <b>Shunt Detection And Performance Characterization Of Silicon Solar Cells Using Thermoreflectance Imaging .....</b> | 2286 |
| <i>Kadhair Al-Hemyari</i>  |      |

### **AMD LASER MICRO AND NANO STRUCTURING:**

|  |      |
|--|------|
| <b>Ultrafast Laser Processing Of Semiconductor Devices.....</b>  | 2288 |
| <i>James Carey</i>   |      |
| <b>Speed Investigations Toward An Industrial Application Of Optical Trap Assisted Nanopatterning .....</b> | 2289 |
| <i>Romain Fardel</i>   |      |
| <b>Laser Micro/Nano Patterning Of Hydrophobic Surfaces By Contact Particle Lens Array .....</b>            | 2291 |
| <i>Ashfaq Khan</i>   |      |
| <b>Laser Microstructuring And Processing In Printing Industry .....</b>                                    | 2293 |
| <i>Guido Hennig</i>  |      |
| <b>Increase Of Capacity Retention By Laser Structuring Of Thin Film Battery Materials .....</b>            | 2296 |
| <i>Johannes Proell</i>   |      |

### **AME BIOMEDICAL THERAPEUTIC APPLICATIONS:**

|   |      |
|---|------|
| <b>Therapeutic Applications Of Light: PDT - The Killer; LLLT - The Healer .....</b>                                     | 2298 |
| <i>Michael Hamblin</i>  |      |
| <b>Visualization Of Dose Effects On Cultivated Cells In Photodynamic Therapy By A Laser Speckle Microscopy .....</b>    | 2300 |
| <i>Yasuyuki Hirakawa</i>  |      |
| <b>Ultra-Precise Focusing Multimodal Microprobes For Contact Laser Tissue Surgery .....</b>                             | 2302 |
| <i>Vasily Astratov</i>  |      |
| <b>Ultrafast-Laser Interactions With Soft Biological Tissues - A Study With Viable 3-D Hydrogel Cell Cultures .....</b> | 2304 |
| <i>Aghapi Mordovanakis</i>  |      |

### **AMF MEDICAL APPLICATIONS OF FLUORESCENCE:**

|  |      |
|--|------|
| <b>Assessing Human Skin With Light.....</b>  | 2306 |
| <i>Nikiforos Kollias</i>   |      |
| <b>Near Infrared Scanning Imaging Of Cancerous And Normal Prostate Tissues Enhanced By A Receptor-Targeted Contrast Agent (Cytate) And Independent Component Analysis.....</b> | 2307 |
| <i>Yang Pu</i>   |      |
| <b>Wide-Field Lensless Fluorescent Imaging Of Transgenic Caenorhabditis Elegans On A Chip .....</b>  | 2309 |
| <i>Ahmet Coskun</i>  |      |
| <b>Application Of Photonic Crystal Enhanced Fluorescence To Antibody Microarrays.....</b>  | 2311 |
| <i>Cheng-Sheng Huang</i>   |      |

### **ATUA AIRBORNE AND SPACE LIDAR:**

|  |      |
|--|------|
| <b>Icesat-2 And The Importance Of Space-Based Laser Altimetry Measurements.....</b>            | 2313 |
| <i>Matthew McGill</i>  |      |
| <b>Performance Of The GLAS Space Lidar Receiver Through Its Seven-Year Space Mission .....</b> | 2315 |
| <i>Xiaoli Sun</i>  |      |
| <b>Cryosphere And Biomass Measurements Using A Photon-Counting 3D Imaging Lidar .....</b>      | 2317 |
| <i>John Degnan</i>   |      |
| <b>Development Of An Airborne Lidar Surface Topography Simulator .....</b>                     | 2319 |
| <i>Anthony Yu</i>  |      |

## **ATUB SPECTROSCOPIC TECHNOLOGIES FOR TISSUE DIAGNOSTICS:**

|  |      |
|--|------|
| Use Of Spectroscopic Imager For The Assessment Of Optical Properties And 3D Reconstruction Of Biological Media ..... | 2321 |
| <i>Jessica Ramella-Roman</i>   |      |
| Theoretical Analysis Of A Technique For Broadband Optical Property Estimation In Two-Layer Tissue .....              | 2323 |
| <i>Du Le</i>   |      |
| Diffuse Spectroscopy With Very High Collection Efficiency .....  | 2325 |
| <i>Martin Van Der Mark</i>   |      |
| Physiologically Relevant Image Reconstruction For Small Animals Using Optical Diffusion Tomography .....             | 2327 |
| <i>Vaibhav Gaind</i>   |      |

## **ATUC COHERENCE DOMAIN SPECTROSCOPY AND IMAGING:**

|   |      |
|---|------|
| In Vivo Imaging Of Kidney Microcirculation Using Doppler Optical Coherence Tomography .....                                   | 2329 |
| <i>Jerry Wierwille</i>  |      |
| Assessment Of Rotator Cuff Tendon Integrity With Single Detector Polarization Sensitive Optical Coherence Tomography .....    | 2331 |
| <i>Mark Brezinski</i>   |      |
| Characterizing The Point Spread Function Of Retinal OCT Devices With A Model Eye-Based Phantom .....                          | 2333 |
| <i>Anant Agrawal</i>  |      |
| Real-Time Numerical Dispersion Compensation For Standard/Full-Range Complex Fourier-Domain Optical Coherence Tomography ..... | 2335 |
| <i>Kang Zhang</i>   |      |
| Biomedical Applications Of Enhanced Backscattering Spectroscopy .....   | 2337 |
| <i>Jeremy Rogers</i>  |      |
| Improved Performance Of SS-OCT By Calibration With Logarithmic Amplified Frequency Clock .....                                | 2339 |
| <i>Mark Brezinski</i>   |      |

## **ATUD APPLICATIONS OF MID-UV LEDS:**

|  |      |
|--|------|
| Water And Air Treatment Using Ultraviolet Light Sources .....  | 2341 |
| <i>Gordon Knight</i>   |      |
| Applications Of Robust, Radiation Hard Algan Optoelectronic Devices In Space Exploration And High Energy Density Physics .....       | 2343 |
| <i>Ke-Xun Sun</i>  |      |
| Development Of Reliable Mw Level Powers In Pseudomorphic Ultraviolet Light Emitting Diodes On Bulk Aluminum Nitride Substrates ..... | 2345 |
| <i>James Grandusky</i>   |      |

## **SENSORS AND IMAGING FOR SCIENTIFIC AND SECURITY APPLICATIONS:**

|   |      |
|---|------|
| An Ultra-Sensitive DC And AC Accelerometer Using Dual Superluminal Zero-Area L-Shaped Ring Lasers .....       | 2347 |
| <i>Selim Shahriar</i>   |      |
| Demonstration Of A DMD-Based Compressive Sensing (CS) Spectral Imaging System .....                           | 2349 |
| <i>Yuehao Wu</i>  |      |
| An Integrated, Noninvasive, Fiber Optic Sensor For Electric And Magnetic Field Measurement Applications ..... | 2351 |
| <i>Anthony Garzarella</i>   |      |
| Explosive Sensing Using Multiple-Excitation-Wavelength Resonance-Raman Scattering .....                       | 2353 |
| <i>Balakishore Yellampelle</i>  |      |
| Terahertz Spectral Imaging For Drug Inspection .....  | 2355 |
| <i>Kodo Kawase</i>  |      |

|   |      |
|---|------|
| <b>High-Speed Thz Biochip Reader System .....</b> | 2358 |
| <i>Christian Debus</i>                            |      |

**ATUF LASERS FOR GOVERNMENT NATIONAL SCIENCE AND SECURITY APPLICATIONS:**

|   |      |
|---|------|
| <b>Lasers In Electronic Warfare .....</b>   | 2360 |
| <i>Gerald Manke</i>   |      |
| <b>Mono-Energetic Gamma-Rays (Mega-Rays) And The Dawn Of Nuclear Photonics.....</b>     | 2361 |
| <i>Chris Barty</i>  |      |
| <b>The Intelligence Advanced Research Projects Activity - Its BEST And Beyond .....</b> | 2364 |
| <i>Michael King</i>   |      |
| <b>2D+3D Face Imaging For Stand-Off Biometric Identification.....</b>                   | 2365 |
| <i>Brian Redman</i>   |      |

**AWA ENERGY EFFICIENT LIGHTING:**

|   |      |
|---|------|
| <b>Superior Warm-White Light-Emitting Diodes Integrated With Quantum Dot Nanophosphors For High Luminous Efficacy And Color Rendering .....</b> | 2367 |
| <i>Sedat Nizamoglu</i>  |      |
| <b>Spatially Resolved Thermal Analysis Of High Power Leds Using Thermoreflectance Imaging.....</b>  | 2369 |
| <i>Kadhair Al-Hemyari</i>   |      |
| <b>True Bulk Gan Substrates For High Efficiency Devices .....</b>   | 2371 |
| <i>David Bliss</i>  |      |
| <b>VACNT-On-Silicon Platform For Improving Heat Conduction In Optoelectronic Packaging .....</b>  | 2374 |
| <i>Yung-Jr Hung</i>   |      |

**JOINT CLEO: 2011 TECHNICAL SESSIONS:**

**JMA JOINT SYMPOSIUM ON HYBRID QUANTUM NANOPLASMONIC SYSTEMS-TOWARDS ACTIVE NANOPLASMONICS I: PLASMON NANOLASERS:**

|   |      |
|---|------|
| <b>Lasing And Spontaneous Emission In Gap-Plasmon Mode Bragg Grating Waveguides .....</b>       | 2376 |
| <i>Martin Hill</i>  |      |
| <b>Lasers Beyond The Diffraction Limit .....</b>  | 2378 |
| <i>Rupert Oulton</i>  |      |
| <b>Electrically Pumped Subwavelength Metallo-Dielectric Laser With Low Threshold Gain .....</b> | 2380 |
| <i>Jin Hyoung Lee</i>   |      |
| <b>Novel Metal-Cavity Nanolasers At Room Temperature.....</b>                                   | 2382 |
| <i>Chien-Yao Lu</i>   |      |
| <b>Demonstration Of Metallic Nano-Cavity Light Emitters With Electrical Injection .....</b>     | 2384 |
| <i>Akira Matsudaira</i>   |      |

**JMB JOINT SYMPOSIUM ON NANO-BIO-PHOTONICS I: NANOSCALE IMAGING AND SENSING FOR BIOMEDICAL APPLICATIONS:**

|  |      |
|--|------|
| <b>Magnetomotive Molecular Nanoprobe For Optical Biomedical Imaging And Diagnostics.....</b>       | 2386 |
| <i>Stephen Boppart</i>   |      |
| <b>Beyond Diffraction Limited Imaging And Sensing In Nanobiophotonics.....</b>                     | 2389 |
| <i>Ilko Ilev</i>   |      |
| <b>Combined OCT And Fluorescence Imaging For Cancer Detection And Therapeutic Monitoring .....</b> | 2391 |
| <i>Yu Chen</i>   |      |

**JMC ENVIRONMENTAL AND EXPLOSIVE SENSING BY QUANTUM CASCADE LASERS:**

|  |      |
|--|------|
| <b>Standoff Chemical Detection Using Quantum Cascade Lasers And Photoacoustic Sensing Techniques .....</b> | 2393 |
| <i>Xing Chen</i>   |      |

|  |      |
|--|------|
| <b>Open Path Water Vapor Measurements Using A Chirped Pulse MIR QCL Sensor System.....</b>                       | 2395 |
| <i>Barry Gross</i>   |      |
| <b>Quantum Cascade Lasers For Sensing CO<sub>2</sub> Isotopic Fingerprints.....</b>                              | 2397 |
| <i>Matthew Escarra</i>   |      |
| <b>Compact Quantum Cascade Laser Based Atmospheric Co<sub>2</sub> Sensor.....</b>                                | 2399 |
| <i>Wen Wang</i>  |      |
| <b>Deployment Of A Quantum Cascade Laser Open- Path Gas Sensor For Water Vapor And Wood Smoke Analysis .....</b> | 2401 |
| <i>Ekua Bentil</i>   |      |

**JMD JOINT SYMPOSIUM ON HYBRID QUANTUM NANOPLASMONIC SYSTEMS-TOWARDS ACTIVE NANOPLASMONICS II: NANOPARTICLES FOR BIOMEDICAL DIAGNOSIS AND TREATMENT:**

|   |      |
|---|------|
| <b>Active And Passive Composite Metal-Dielectric Nanophotonic Devices.....</b>  | 2403 |
| <i>Yeshaiahu Fainman</i>  |      |
| <b>Amplification Of Surface Plasmons: Theory And Experiment.....</b>  | 2405 |
| <i>Pierre Berini</i>  |      |
| <b>Integrated Hybrid Nanophotonics.....</b>   | 2407 |
| <i>Volker Sorger</i>  |      |
| <b>An Epitaxial Metal/Semiconductor System For Active Plasmonic Devices .....</b>   | 2409 |
| <i>Hari Nair</i>  |      |
| <b>Plasmonic Waveguides For Active Semiconductor Devices At Telecom Wavelengths Using Transverse-Magnetic-Polarized Diode Lasers.....</b> | 2411 |
| <i>Daniele Costantini</i>   |      |

**JME JOINT SYMPOSIUM ON NANO-BIO-PHOTONICS II: NANOPARTICLES FOR BIOMEDICAL DIAGNOSIS AND TREATMENT:**

|   |      |
|---|------|
| <b>Functional Fluorescent Nanocapsules For Molecular Imaging And Potential Targeted Therapy .....</b> | 2413 |
| <i>Xingde Li</i>  |      |
| <b>Nanoshells For Two-Photon-Induced Photoluminescence Imaging Of Tumors.....</b>                     | 2415 |
| <i>James Tunnell</i>  |      |
| <b>Magnetic Nanoparticles For Contrast Enhanced Infrared Thermal Imaging.....</b>                     | 2417 |
| <i>Israel Gannot</i>  |      |

**JMF JOINT SYMPOSIUM ON HYBRID QUANTUM NANOPLASMONIC SYSTEMS-TOWARDS ACTIVE NANOPLASMONICS III: SINGLE PHOTONS AND PLASMONIC ANTENNAS**

|   |      |
|---|------|
| <b>Launching Single Photons Into Plasmonic Structure .....</b>                                | 2421 |
| <i>Joerg Wrachtrup</i>  |      |
| <b>Controlling The Coupling Of A Single Nitrogen Vacancy Center To A Silver Nanowire.....</b> | 2422 |
| <i>Alexander Huck</i>   |      |
| <b>Plasmonic Metamaterials Coupled To Single Ingaas-Quantum-Well Gain.....</b>                | 2424 |
| <i>Nina Meinzer</i>   |      |
| <b>Plasmonic Modes Of Strongly-Coupled Single-Crystalline Gold Nanoparticle Dimers .....</b>  | 2426 |
| <i>Bert Hecht</i>   |      |
| <b>Plasmon Nano-Antenna Enhanced Light Emission From InP MQW Towards Faster Leds .....</b>    | 2427 |
| <i>David Arbel</i>  |      |

**JMG NOVEL OPTICAL SYSTEMS FOR INDUSTRIAL APPLICATIONS:**

|   |      |
|---|------|
| <b>Parallel Laser Microfabrication Of Three-Dimensional Structures Corrected For Optical Aberrations.....</b> | 2429 |
| <i>Patrick Salter</i>   |      |
| <b>Dual Adaptive Optics System For Laser Processing Of Diamond.....</b>                                       | 2431 |
| <i>Richard Simmonds</i>   |      |
| <b>Study Of The Transient Behavior Of A Tunable Acoustic Gradient Index Lens For Laser Processing.....</b>    | 2433 |
| <i>Marti Duocastella</i>  |      |

|  |      |
|--|------|
| <b>Combination Of Diffractive Shaper And Splitter For Multiple Beam Laser Processing System</b>          | 2435 |
| <i>Sin-An Chen</i>   |      |
| <b>Fabrication Of Binary Fresnel Lenses In PMMA By Femtosecond Laser Micromachining</b>                  | 2437 |
| <i>Rebeca Martínez Vázquez</i>   |      |
| <b>Automatic Testing Of Unmounted Quantum Cascade Laser Chips In An External Cavity Configuration</b>    | 2439 |
| <i>Yin Wang</i>  |      |
| <b>Novel Optical Architecture For High Capacity And High Data Transfer Rate Holographic Data Storage</b> | 2441 |
| <i>Yuzuru Takashima</i>  |      |

#### **JTUA JOINT SYMPOSIUM ON QUANTUM COMMUNICATIONS I: OVERVIEW:**

|   |      |
|---|------|
| <b>Superconducting Nanowire Single-Photon Detectors</b>                                 | 2443 |
| <i>Francesco Marsili</i>  |      |
| <b>Fast Quantum Dot Single Photon Source Triggered At Telecommunications Wavelength</b> | 2445 |
| <i>Kelley Rivoire</i>   |      |
| <b>Polarization Entangled State Measurement On A Chip</b>                               | 2447 |
| <i>Linda Sansoni</i>  |      |
| <b>Time-Bin Entanglement Distribution On A Wavelength-Division-Multiplexed Network</b>  | 2449 |
| <i>Warren Grice</i>   |      |

#### **JTUB JOINT SYMPOSIUM ON SEMICONDUCTOR ULTRAVIOLET LEDS AND LASERS: SEMICONDUCTOR NEAR-ULTRAVIOLET LASERS AND LEDS:**

|   |      |
|---|------|
| <b>Algan-Based Ultraviolet Lasers - Applications And Materials Challenges</b>   | 2451 |
| <i>Michael Kneissl</i>  |      |
| <b>Semipolar Aln On Bulk Gan For UV-C Diode Lasers</b>  | 2453 |
| <i>Daniel Cohen</i>   |      |
| <b>UV Pump-Thz Probe Study Of Mechanisms Limiting Luminescence From Nanoscale Compositionally Inhomogeneous Algan</b> | 2455 |
| <i>Grace Metcalfe</i>   |      |
| <b>Near-UV Leds On Sapphire Using Single Crystal Aln-Buffer</b>   | 2457 |
| <i>Yasuo Ohba</i>   |      |
| <b>UV Light Emitter On Bulk Semipolar (11-22) Gan</b>   | 2459 |
| <i>Theeradetch Detchprohm</i>   |      |

#### **JTUC JOINT SYMPOSIUM ON QUANTUM COMMUNICATIONS II: NETWORKS:**

|   |      |
|---|------|
| <b>Tokyo QKD Network And The Evolution To Secure Photonic Network</b>   | 2461 |
| <i>Masahide Sasaki</i>  |      |
| <b>Practical Quantum Key Distribution Over 100 Km Using Sinusoidally Gated Ingaas/Inp Avalanche Photodiodes</b>                 | 2464 |
| <i>Naoto Namekata</i>   |      |
| <b>Security Of Post-Selection Based Continuous Variable Quantum Key Distribution Against Arbitrary Attacks</b>                  | 2466 |
| <i>Nathan Walk</i>  |      |
| <b>An Analysis Of Single-Photon Detectors In An Environmentally Robust Gigahertz Clock Rate Quantum Key Distribution System</b> | 2468 |
| <i>Patrick Clarke</i>   |      |

#### **JTUD JOINT SYMPOSIUM ON SEMICONDUCTOR ULTRAVIOLET LEDS AND LASERS: SEMICONDUCTOR MID-UV LEDS AND LASERS:**

|   |      |
|---|------|
| <b>High Power III-Nitride Uv Emitters</b>           | 2470 |
| <i>Max Shatalov</i>                                 |      |
| <b>IQE And EQE Of The Nitride-Based UV/DUV Leds</b> | 2473 |
| <i>Hiroshi Amano</i>                                |      |

|  |      |
|--|------|
| <b>Growth And Characterization Of Deep Ultraviolet Emitting Algan Structures On Sic Substrates</b>                         | 2475 |
| <i>Wei Zhang</i>   |      |
| <b>High TE-Polarized Optical Gain From Algan-Delta-Gan Quantum Well For Deep UV Lasers</b>                                 | 2477 |
| <i>Jing Zhang</i>  |      |
| <b>New Generation Of Distributed Bragg Reflectors Based On Baln/Aln Structures For Deep UV-Optoelectronic Applications</b> | 2479 |
| <i>Mohamed Abid</i>  |      |

### **JTUE LASERS IN ENVIRONMENTAL SENSING:**

|   |      |
|---|------|
| <b>Lidar Measurements Of Atmospheric Oxygen Using A 1.27 Micron Raman Amplifier</b>                         | 2481 |
| <i>James Nagel</i>  |      |
| <b>Remote Backwards Lasing In Air</b>   | 2483 |
| <i>Arthur Dogariu</i>   |      |
| <b>Detecting Anthrax In The Mail Via Coherent Raman Microspectroscopy</b>                                   | 2485 |
| <i>Vladislav Yakovlev</i>   |      |
| <b>Pump-Probe Detection Of Surface-Bound Organophosphonate Compounds</b>                                    | 2487 |
| <i>Thomas Reichardt</i>   |      |
| <b>Signal To Noise Ratios Of Pulsed And Sinewave Modulated Direct Detection Lidar For IPDA Measurements</b> | 2489 |
| <i>Xiaoli Sun</i>   |      |
| <b>Selective Gas Sensing For Photonic Crystal Lasers</b>  | 2491 |
| <i>Cameron Smith</i>  |      |
| <b>Temperature Dependence Of Gas-Detection Sensitivity Of Ingaassb/Algaassb DFB Lasers</b>                  | 2493 |
| <i>Brian Ventrudo</i>   |      |

### **JTUF JOINT SYMPOSIUM ON QUANTUM COMMUNICATIONS III: FUTURE DIRECTIONS:**

|  |      |
|--|------|
| <b>Recent Progress In Quantum Teleportation Experiments</b>                        | 2495 |
| <i>Jian-Wei Pan</i>  |      |
| <b>Triple Photons And Triple Slits - A New Frontier In Quantum Mechanics Tests</b> | 2497 |
| <i>Thomas Jennewein</i>  |      |
| <b>Fiber Transport Of Spatially Entangled Qutrits</b>                              | 2499 |
| <i>Wolfgang Löfller</i>  |      |
| <b>Quantum Teleportation Of Schrödinger's Cat Wave-Packets Of Light</b>            | 2501 |
| <i>Hugo Benichi</i>  |      |
| <b>Experimental Security Analysis A Four-Photon Private State</b>                  | 2503 |
| <i>Konrad Banaszek</i>   |      |

### **JTUG PHOTOACOUSTIC IMAGING & MICROSCOPY:**

|  |      |
|--|------|
| <b>Photoacoustic Imaging In Biomedicine</b>  | 2505 |
| <i>Roger Zemp</i>  |      |
| <b>Development Of Transient Absorption Ultrasonic Microscopy</b>   | 2507 |
| <i>Brian Applegate</i>   |      |
| <b>Vibrational Photoacoustic Microscopy For Depth-Resolved Bond-Selective Imaging Of Tissues And Organisms</b> | 2509 |
| <i>Han-Wei Wang</i>  |      |
| <b>Chemically-Specific Photoacoustic Imaging Using Vibrational Raman Excitation</b>                            | 2511 |
| <i>Vladislav Yakovlev</i>  |      |

### **JTUH LASER DIRECT WRITE FABRICATION:**

|  |      |
|--|------|
| <b>Laser-Induced Forward Transfer Of Pre-Machined Donor Films</b>            | 2513 |
| <i>Kamal Kaur</i>  |      |
| <b>Waveguide Mode Filter Fabricated Using Laser-Induced Forward Transfer</b> | 2515 |
| <i>Kamal Kaur</i>  |      |

|   |      |
|---|------|
| <b>Experimental And Numerical Study Of The Laser-Induced Printing Of Liquid Materials .....</b> | 2517 |
| <i>Matt Brown</i>   |      |
| <b>Laser Metal Deposition Of Steel Components Using Machining Waste As Build Material .....</b> | 2519 |
| <i>Khalid Mahmood</i>   |      |
| <b>The Evanescent Interaction Of An Ultrafast Laser Inscribed Optical Waveguide .....</b>       | 2521 |
| <i>Stephen Beecher</i>  |      |

### **JTUI NANOPHOTONICS AND INTEGRATION JOINT POSTER SESSION:**

|  |      |
|--|------|
| <b>Directional Control Of Lateral Leakage In Thin-Ridge Siliconon-Insulator Waveguides.....</b>                              | 2523 |
| <i>Naser Dalvand</i>   |      |
| <b>Novel High Efficiency Vertical Optical Coupler Using Subwavelength High Contrast Grating .....</b>                        | 2525 |
| <i>Li Zhu</i>  |      |
| <b>Reflection-Type Slow Light Optical Switches Using Current Injection.....</b>  | 2527 |
| <i>Ayumi Fuchida</i>   |      |
| <b>On The Mechanism Of Efficient Coupling Into Slow Light Photonic Crystal Waveguides .....</b>                              | 2529 |
| <i>Amir Hosseini</i>   |      |
| <b>Electro-Optical Modulator Based On The P+-N+-N+ Transistor Structure Integrated On SOI<br/>Substrate.....</b>             | 2531 |
| <i>Ricky Chuang</i>  |      |
| <b>Carrier Depletion Based Linear Silicon Modulator.....</b>   | 2533 |
| <i>Stanley M. G. Lo</i>  |      |
| <b>Novel Coupling Modulator Design Using Ring-Resonator-Based Light Drop Structure .....</b>                                 | 2535 |
| <i>Yunchu Li</i>   |      |
| <b>Surface Tension Reshaped Lithium Niobate Whispering Gallery Mode Micro-Resonators.....</b>                                | 2537 |
| <i>Charlie Y. J. Ying</i>  |      |
| <b>Ultra-High Q Long-Path As2S3 Ring Resonator On Linbo3 .....</b>   | 2539 |
| <i>Yifeng Zhou</i>   |      |
| <b>A Vertical Sg-Dbr Based Tunable Hybrid Silicon Evanescent Laser.....</b>  | 2541 |
| <i>Venkat Veerasubramanian</i>   |      |
| <b>Statistical Properties Of Scattering Loss And Mode Splitting In Microdisk Resonators .....</b>                            | 2543 |
| <i>Qing Li</i>   |      |
| <b>Experimental Observation Of Fano Resonance In A Single Whisperinggallery Microresonator .....</b>                         | 2545 |
| <i>Yun-Feng Xiao</i>   |      |
| <b>A Self-Luminescent Horizontal Slot Microdisk Resonator For Biosensing Applications .....</b>                              | 2547 |
| <i>Shinyoung Lee</i>   |      |
| <b>Hollow-Bottle Optical Microresonators.....</b>  | 2549 |
| <i>Michalis Zervas</i>   |      |
| <b>Resonant In-Situ Photoluminescence Of Si-Qds Buried In Siox/Sinx Distributed Bragg Reflector .....</b>                    | 2551 |
| <i>Gong-Ru Lin</i>   |      |
| <b>Direct Estimation Of Purcell Factor From Scatterer-Induced Mode Splitting Spectra Of An Optical<br/>Microcavity .....</b> | 2553 |
| <i>Sahin Ozdemir</i>   |      |
| <b>Cdse/Zns Quantum Dot Embedded Hollow Toroidal Microcavities And Their Modal Properties .....</b>                          | 2555 |
| <i>Kyungwook Hwang</i>   |      |
| <b>A Study On Cross-Talk In Nanometric-Gap Quantum Dot Photodetectors .....</b>  | 2557 |
| <i>Ludan Huang</i>   |      |
| <b>Ultrafast Gaas Nano-Whisker Photodetector For Thz-Frequency Applications .....</b>  | 2559 |
| <i>Jie Zhang</i>   |      |
| <b>Precise Micro-Fabrication Of Structures To Enhance Photon Collection From Diamond Color<br/>Centers.....</b>              | 2561 |
| <i>John Hadden</i>   |      |
| <b>Low-Loss Slow Light In High Contrast Grating Hollow-Core Waveguides.....</b>  | 2563 |
| <i>Tianbo Sun</i>  |      |
| <b>Topological Surface Modes In Photonic Structures.....</b>   | 2565 |
| <i>Natalia Malkova</i>   |      |
| <b>Impact Of Sidewall Roughness On Integrated Bragg Gratings.....</b>  | 2567 |
| <i>Alexandre D. Simard</i>   |      |
| <b>Fabrication Of Low Contrast Homogenous Guided Mode Resonance Filters .....</b>  | 2569 |
| <i>Eric Johnson</i>  |      |

|  |      |
|--|------|
| <b>Realization Of Small Footprint Microring Reflectors .....</b>   | 2571 |
| <i>Amir Arbabi</i>   |      |
| <b>Experimental Demonstration And Simulation Of Lossless Metal-Free Integrated Elliptical Reflectors For Waveguide Turnings And Crossings.....</b> | 2573 |
| <i>Xiangyu Li</i>  |      |
| <b>Polarization Dependence Of Facet Reflectivity In Rectangular Submicron Waveguides .....</b>   | 2575 |
| <i>Todd Stevater</i>   |      |
| <b>Modal Formulation For Scattering On The Absorbing Silicon Nanowire Arrays For Photovoltaic Applications.....</b>                                | 2577 |
| <i>Kokou Dossou</i>  |      |
| <b>Scattering Performance Of Plasmonic Nanorod Antennas: An Accurate And Fast Computational Scheme.....</b>  | 2579 |
| <i>Hossein Mosallaei</i>   |      |
| <b>Gain And Noise In Long-Range Surface Plasmon-Polariton Amplifiers .....</b>   | 2581 |
| <i>Pierre Berini</i>   |      |
| <b>Thin Substrates For Enhanced Metamaterial Sensing Applications.....</b>   | 2583 |
| <i>Sher-Yi Chiam</i>   |      |
| <b>Control Of Self-Accelerating Airy Beams With Optically-Induced Refractive-Index Gradient .....</b>  | 2585 |
| <i>Peng Zhang</i>  |      |
| <b>Photonic Band Gap In 3D Network Structures With Short-Range Order .....</b>   | 2587 |
| <i>Seng Fatt Liew</i>  |      |
| <b>Advanced And Delayed Optical Images Through Single And Coupled Image Resonators.....</b>  | 2589 |
| <i>Parvin Sultana</i>  |      |
| <b>Frequency Tunable Metamaterial Designs Using Near-Field Coupled SRR Structures In The Terahertz Region .....</b>                                | 2591 |
| <i>George Keiser</i>   |      |
| <b>Terahertz Propagation Through Free-Standing Woven-Steel-Mesh Metamaterials.....</b>   | 2593 |
| <i>Cumali Sabah</i>  |      |
| <b>Giant Goos-Hänchen Effect At Photonic Crystals Surfaces.....</b>  | 2595 |
| <i>Irina Soboleva</i>  |      |
| <b>Circularly-Polarized Resonances At The Photonic Band-Edge Of Chiral Liquid Crystal Microcavities .....</b>                                      | 2596 |
| <i>Luke Bissell</i>  |      |
| <b>Deterministic Resonance And Phase Control For Photonic Sub- And Super-Radiance In Coupled Nanocavities .....</b>                                | 2598 |
| <i>Tingyi Gu</i>   |      |
| <b>Purcell Effect In A Magnetic Cavity .....</b>   | 2600 |
| <i>Adel Rahmani</i>  |      |
| <b>Increased Optical Intensity Near High Order Degenerate Photonic Band Edges For Nonlinear Applications.....</b>                                  | 2602 |
| <i>Nadav Gutman</i>  |      |
| <b>Selective Thermal Emission From Patterned Steel Surfaces .....</b>  | 2604 |
| <i>Joshua Mason</i>  |      |
| <b>Quasi-Phase Matching In Nonlinear Metamaterials .....</b>   | 2606 |
| <i>Alec Rose</i>   |      |
| <b>Giant Nonlinear Optical Enhancement In Chalcogenide Glass Fibers With Deep-Subwavelength Metallic Nanowires .....</b>                           | 2608 |
| <i>Bora Ung</i>  |      |
| <b>Ultracompact Surface Plasmon Polariton Unidirectional Generator Based On Asymmetric Single-Nanolit.....</b>                                     | 2610 |
| <i>Zhi Li</i>  |      |
| <b>Mechanical Tuning Of Surface Plasmon In Flexible Gold Nanograting.....</b>  | 2612 |
| <i>Yonghao Cui</i>   |      |
| <b>Plasmon Resonance Induced Enhancement Of Reflection Band In A One-Dimensional Metal Nanocomposite Photonic Crystal.....</b>                     | 2614 |
| <i>Saima Husaini</i>   |      |
| <b>Plasmonic Aharonov-Bohm Effect .....</b>  | 2616 |
| <i>Erez Hasman</i>   |      |
| <b>Average Enhancement Factor Of Molecules-Doped Coreshell On Fluorescence.....</b>  | 2618 |
| <i>Mao-Kuen Kuo</i>  |      |
| <b>Silica Nano-Waveguides And Networks As Stretches On Segmented Organics Preformed For Sub-Wavelength Photonics .....</b>                         | 2620 |
| <i>Bruno Beche</i>   |      |

|   |      |
|---|------|
| <b>A One-Dimensional Hybrid Photonic Crystal Microcavity In The Strong Coupling Regime</b>  | 2622 |
| <i>Lei Zhang</i>  |      |
| <b>Tracking Molecular Binding To Nanostructures Using CO<sub>2</sub> Snow Jet On Plasmonic SERS Substrates</b>                            | 2624 |
| <i>James Hugall</i>   |      |
| <b>Experimental Demonstration Of Locally Oxidized Hybrid Silicon Plasmonic Waveguide</b>  | 2626 |
| <i>Boris Desiatov</i>   |      |
| <b>Sub-15 nm Photo-Electron Source Using A Nano-Aperture Integrated With A Nano-Antenna</b>   | 2628 |
| <i>Yao-Te Cheng</i>   |      |
| <b>Critical Coupling Requirements For Surface Plasmon Enhanced Magneto-Optic Isolators</b>  | 2630 |
| <i>Joseph Summers</i>   |      |
| <b>ENZ-Enhanced Transmission Through Subwavelength Slits</b>  | 2632 |
| <i>Sandeep Inampudi</i>   |      |
| <b>Multiple Selective Excitations Of Localized Surface Plasmons In Coupled Gold Nano-Spheres</b>  | 2634 |
| <i>Po-Nan Li</i>  |      |
| <b>Direct Visualization Of Delocalized Band-Edge Slow-Bloch Mode Laser</b>  | 2636 |
| <i>Ségoënne Callard</i>   |      |
| <b>Theoretical Approach To The Ultrafast Nonlinear Optical Response Of Metal Slabs</b>  | 2638 |
| <i>Torsten Meier</i>  |      |
| <b>Near-Infrared Nano-Imaging Spectroscopy Of Semiconductor Quantum Dots Using A Phase Change Mask Layer</b>                              | 2640 |
| <i>Nobuhiro Tsumori</i>   |      |
| <b>Nanophotonic Device Optimization With Adjoint FDTD</b>   | 2642 |
| <i>Paul Hansen</i>  |      |
| <b>Measurement Of Plasmon Response Functions With Cross-Correlation Imaging Using Femtosecond Laser Dark-Field Microscopy</b>             | 2644 |
| <i>Jun Oi</i>   |      |
| <b>Resonant Plasmon-Exciton Coupling In Zinc Oxide Quantum Well-Aluminum Nanodisc Heterostructure Arrays</b>                              | 2646 |
| <i>Benjamin Lawrie</i>  |      |
| <b>Eigen Mode Approach To The Sub-Wavelength Imaging With Surface Plasmon Polaritons</b>  | 2648 |
| <i>Beibei Zhang</i>   |      |
| <b>Plasmon Tomography Images Of Two-Dimensional Periodic Structures</b>   | 2650 |
| <i>Charles Regan</i>  |      |
| <b>High Sensitivity Plasmonic Index Sensor Using Slab-Like Gold Nanoring Array</b>  | 2652 |
| <i>Chia-Yang Tsai</i>   |      |
| <b>Directional Selectivity Through The Subwavelength Slit In Metallic Gratings</b>  | 2654 |
| <i>Semih Cakmakyan</i>  |      |
| <b>Plasmonic Nanostructures For Angle Selective Photovoltaics</b>   | 2656 |
| <i>Brian Roberts</i>  |      |
| <b>Experimental Observation Of The Coupling Between Short-Rang SPP And Dielectric Waveguide Mode</b>                                      | 2658 |
| <i>Ruiyuan Wan</i>  |      |
| <b>Experimental Characterization Of Simultaneous Gain Pumping And Depletion In A Semiconductor Optical Amplifier</b>                      | 2660 |
| <i>Yue Tian</i>   |      |
| <b>Flap-Top Interleaver By Femtosecond Laser Writing Of Cascaded Mach-Zehnder Interferometers In Fused Silica</b>                         | 2662 |
| <i>Jason Ng</i>   |      |
| <b>MEMS Spatial Light Modulator For Spectral Phase And Amplitude Modulation</b>   | 2664 |
| <i>Jonathan Dunayevsky</i>  |      |
| <b>Electro Thermal And Electro Statical Actuation Of A Surface Micromachined Tunable Fabry-Pérot Filter</b>                               | 2666 |
| <i>Christian Gierl</i>  |      |
| <b>Tunable Optical Coupling In A Low-Loss Hollow Core Waveguide Using Adiabatically Chirped High-Contrast-Gratings And MEMS Actuators</b> | 2668 |
| <i>Xue Wang</i>   |      |
| <b>Electrically Controlled Pulse Compression Using A Silicon Waveguide</b>  | 2670 |
| <i>Shiming Gao</i>  |      |
| <b>Temperature Compensated 50 Gb/S DPSK Demodulator</b>   | 2672 |
| <i>Mohammed Hai</i>   |      |
| <b>Scalable 1.28-Tb/S Transmultiplexer Using A Time Lens</b>  | 2674 |
| <i>Keith Petrillo</i>   |      |

|   |      |
|---|------|
| <b>Solid-State Polymer Waveguide DFB Laser With Self Dye-Circulatory Function</b>   | 2676 |
| <i>Hiroaki Yoshioka</i>   |      |
| <b>A Volume Bragg Grating To Replace A Faraday Isolator In An Amplifier With Wavefront Reversal Via Stimulated Brillouin Scattering</b>   | 2678 |
| <i>John McElhenny</i>   |      |
| <b>Measurements On A Single Crystal Photo-Elastic Modulator</b>   | 2680 |
| <i>Ferdinand Bammer</i>   |      |
| <b>Suppression Of Filamentation In Semiconductor Lasers Via Carrier-Induced Wavefront Tilt</b>  | 2682 |
| <i>Jordan Leidner</i>   |      |
| <b>Transformation Of Self-Feedback Weak-Resonant-Cavity Fabry-Perot Laser Diode Pulsation From Gain-Switching To Mode-Locking Under Direct Modulation At 10 Ghz</b>                     | 2684 |
| <i>Gong-Ru Lin</i>  |      |
| <b>Design Of Optical Pulse Envelope Ring Oscillator (OPERO) And Fabrication In Generic InP Technology</b>   | 2686 |
| <i>Pieter Kuindersma</i>  |      |
| <b>Optically Pumped Room Temperature InAs/InGaAsP Microtube Laser Operating Near 1.55 <math>\mu</math>M</b>   | 2688 |
| <i>Pablo Bianucci</i>   |      |
| <b>Strained Germanium Membrane Using Thin Film Stressor For High Efficiency Laser</b>   | 2690 |
| <i>Donguk Nam</i>   |      |
| <b>Modal Gain And Time-Resolved Photoluminescence Of Ga(NAsP) Heterostructures Pseudomorphically Grown On Silicon (001) Substrate</b>   | 2692 |
| <i>Nektarios Koukourakis</i>  |      |
| <b>Sequence Of Events During The Catastrophic Optical Damage In Broad-Area Lasers</b>   | 2694 |
| <i>Jens Tomm</i>  |      |
| <b>Carrier Dynamics In Catastrophic Optical Bulk Damaged InGaAs-AlGaAs Strained QW Broad-Area Lasers</b>  | 2696 |
| <i>Yongkun Sin</i>  |      |
| <b>High Speed 980 Nm Vcsels For Short Reach Optical Interconnects Operating Error-Free At 25 Gbit/S Up To 85 C</b>  | 2698 |
| <i>Alex Mutig</i>   |      |
| <b>High Speed Modulation Of A 1.55-<math>\mu</math>M MEMS-Tunable VCSEL</b>   | 2700 |
| <i>Karolina Zogal</i>   |      |
| <b>Investigation Of The Stability Of Microwave Oscillations In An Optically Injected 1550nm-VCSEL</b>   | 2702 |
| <i>Kevin Schires</i>  |      |
| <b>Optically-Pumped Circularly Polarized Lasing In A (110) VCSEL With GaAs/AlGaAs Qws At Room Temperature</b>   | 2704 |
| <i>Satoshi Iba</i>  |      |
| <b>High Reflectivity Subwavelength Metal Grating For VCSEL Applications</b>   | 2706 |
| <i>Ruiyuan Wan</i>  |      |
| <b>Method For Measuring Reflectance Of Semiconductor Disk Laser Gain Element Under Optical Pump Excitation</b>  | 2708 |
| <i>Carl Borgentun</i>   |      |
| <b>High-Speed Wavelength Modulation In Quantum Cascade Laser</b>  | 2710 |
| <i>Gang Chen</i>  |      |
| <b>Gain To Absorption Ratio Of Self-Induced Transparency Modelocked Quantum Cascade Lasers</b>  | 2712 |
| <i>Muhammad Talukder</i>  |      |
| <b>Inefficient Coherent Carrier Transport In Quantum Cascade Lasers At High Temperature</b>   | 2714 |
| <i>Muhammad Talukder</i>  |      |
| <b>Design Of Laser Transition Oscillator Strength For Thz Quantum Cascade Lasers</b>  | 2716 |
| <i>Saeed Fathololoumi</i>   |      |
| <b>Room-Temperature Operation Of <math>\lambda \approx 2.95 \mu</math>M In0.67Ga0.33As/Al0.57In0.43As Quantum Cascade Laser Source Based On Intra-Cavity Second Harmonic Generation</b> | 2718 |
| <i>Min Jang</i>   |      |
| <b>Modal Gain, Loss, And Thermal Resistance Of A Metamorphic Gasb-Based Laser In Room-Temperature Continuous-Wave Operation At 2 <math>\mu</math>M</b>                                  | 2720 |
| <i>Paveen Apiratikul</i>  |      |
| <b>The Antiguide Parameter In Mid-Infrared Optically Pumped Semiconductor Lasers</b>  | 2722 |
| <i>Andrew Ongstad</i>   |      |
| <b>Fabrication Of Microstructures Containing Au Nanoparticles For Optical And Photonic Applications</b>   | 2724 |
| <i>Adriano Otuka</i>  |      |
| <b>Quantum Multiscale Modeling Of Phase Changes During Femtosecond Laser Ablation Of Silica</b>   | N/A  |
| <i>Cong Wang</i>  |      |

|   |      |
|---|------|
| <b>Multilayered Optical Storage In Sm(DBM)3Phen-Doped And Un-Doped Polymethylmethacrylate By A Femtosecond Laser .....</b>  | 2728 |
| <i>Takayoshi Kobayashi</i>  |      |
| <b>Double-Filament Waveguides Written In Nd:YAG Ceramic With 2-Ps UV Laser Pulses.....</b>                                  | 2730 |
| <i>Ben Mcmillen</i>   |      |
| <b>Phase Transitions Induced By Ultrafast Laser Writing In Transparent Materials.....</b>                                   | 2732 |
| <i>Peter Kazansky</i>   |      |
| <b>Integration Of Polymeric Microstructures By Silica Nanowires .....</b>   | 2734 |
| <i>Cleber Mendonca</i>  |      |
| <b>Influence Of Pulse Width In Ultrafast Laser Fabrication Of Embedded Waveguides In Chalcognide Glasses .....</b>          | 2736 |
| <i>Kevin Chen</i>   |      |
| <b>Morphology Of Femtosecond Laser Modification Of Bulk Dielectrics.....</b>  | 2738 |
| <i>Konstantin Popov</i>   |      |
| <b>Dependence Of The Periodic Structure Interspaces On Laser Fluence For Metals Irradiated With Femtosecond Laser .....</b> | 2740 |
| <i>Masaki Hashida</i>   |      |
| <b>Mixed Gas Sensing System Based On Super-Luminescent Diode Coupled With A Fabry-Perot Etalon.....</b>                     | 2742 |
| <i>Divya Kannan</i>   |      |
| <b>Optical Readout Of Micro Tuning Forks For Spectroscopic Applications.....</b>  | 2744 |
| <i>Michael Köhring</i>  |      |
| <b>High Sensitivity Detection Of NO<sub>2</sub> Using ICOS And MLIAS .....</b>  | 2746 |
| <i>Gottipaty Rao</i>  |      |
| <b>Cavity Enhanced Spectroscopy With A Dual-Color, Passively Locked Power Build-Up External Cavity Diode Laser .....</b>    | 2748 |
| <i>Shigeru Yamaguchi</i>  |      |
| <b>Validation Of A Model Of A Resonant Optothermoacoustic Trace Gas Sensor .....</b>  | 2750 |
| <i>John Zweck</i>   |      |

#### **JWA TOWARDS APPLICATIONS JOINT POSTERS SESSION:**

|  |      |
|--|------|
| <b>25-Ghz-Channel-Spaced DWDM-PON Based On ASE Injection With Reduced Filtering Effect.....</b>  | 2752 |
| <i>Joon-Young Kim</i>  |      |
| <b>Impact Of Brillouin Scattering On R-SOA Based WDM PON Power Budget.....</b>   | 2754 |
| <i>Lucia Marazzi</i>   |      |
| <b>Highly Linear Millimeter-Wave Over Fiber Transmitter With Subcarrier Upconversion.....</b>  | 2756 |
| <i>Shangyuan Li</i>  |      |
| <b>Selectively Providing Virtual Private Network (VPN) Services In TDM-Pons With Manchester Coding.....</b>                                    | 2758 |
| <i>Xuezhi Hong</i>   |      |
| <b>Robustness Of Coherent SPE-OCDMA To Combined Dispersion Impairments.....</b>  | 2760 |
| <i>A Brinton Cooper</i>  |      |
| <b>Simultaneous Modulation And Transmission Of CATV And Radio-Over Fiber Signals .....</b>   | 2762 |
| <i>Peng-Chun Peng</i>  |      |
| <b>RSOA-Based External Cavity Laser As Cost-Effective Upstream Transmitter For WDM Passive Optical Network.....</b>                            | 2764 |
| <i>Quang Trung Le</i>  |      |
| <b>Highly Stable 200ghz Soliton Microring Resonator Laser Based On Filter-Driven Four Wave Mixing .....</b>                                    | 2766 |
| <i>Alessia Pasquazi</i>  |      |
| <b>Hybrid CATV And 16-QAM OFDM To The Home Device Networks.....</b>  | 2768 |
| <i>Hai-Han Lu</i>  |      |
| <b>Fractional Frequency Multiplication By Using Optically Injection Locked Optoelectronics Oscillator.....</b>                                 | 2770 |
| <i>Dan Lu</i>  |      |
| <b>Simultaneous Clock Recovery And Polarization De-Multiplexing For 160-Gbit/S Polm-NRZ-DQPSK Using Electro-Optical Phase-Locked Loop.....</b> | 2772 |
| <i>He Wen</i>  |      |
| <b>Compensation Of Signal Distortion By Optimized Digital Backward Propagation In DQPSK Transmission .....</b>                                 | 2774 |
| <i>Chien-Yu Lin</i>  |      |

|  |      |
|--|------|
| <b>Real-Time Self-Homodyne Coherent Receiver For BPSK Signals Using Feed-Forward Carrier Extraction.....</b>                               | 2776 |
| <i>Selwan Ibrahim</i>  |      |
| <b>PMD Mitigation In RZ-OOK PDM Systems Based On A Single Polarization-Diversified All-Optical Regenerator.....</b>                        | 2778 |
| <i>Lianshan Yan</i>  |      |
| <b>Laser Linewidth Tolerance Of Coherent Optical 64QAM And 16PSK Systems Using Decision-Aided Maximum Likelihood Phase Estimation.....</b> | 2780 |
| <i>Hongyu Zhang</i>  |      |
| <b>Low Complexity Soft Decision Circuit For Decoding LDPC Codes.....</b>   | 2782 |
| <i>Meer Nazmus Sakib</i>   |      |
| <b>Impact Of The Maritime Environment On The Aging Of Optical Fibers.....</b>  | 2784 |
| <i>Paulo André</i>   |      |
| <b>Rapid Automatic High-Precision In-Situ Wavelength Calibration For Tunable Lasers Using An Athermal AWG.....</b>                         | 2786 |
| <i>Runxiang Yu</i>   |      |
| <b>Perimeter Deposition And Annealing For Increasing Cr4+ Concentration In Ultra Broadband Cr:YAG Fiber Amplifier.....</b>                 | 2788 |
| <i>Cheng-Nan Tsai</i>  |      |
| <b>Numerical Investigations On Kerr-Induced Long-Period Fiber Gratings.....</b>  | 2790 |
| <i>Carsten Cleff</i>   |      |
| <b>163 Nj Graphene Mode-Locked Yb-Doped Fiber Laser .....</b>  | 2792 |
| <i>Jiang Liu</i>   |      |
| <b>Highly-Stable Yb-Doped Fiber Laser Mode-Locked In A Regime Of SESAM Two-Photon Absorption.....</b>                                      | 2794 |
| <i>Tai Hyun Yoon</i>   |      |
| <b>An All-Fiber 2 <math>\mu</math>M Wavelength Tunable Mode-Locked Laser .....</b>   | 2796 |
| <i>Khanh Kieu</i>  |      |
| <b>High Power Femtosecond Source Near 1 Micron Based On An All-Fiber Er-Doped Mode-Locked Laser .....</b>                                  | 2798 |
| <i>Khanh Kieu</i>  |      |
| <b>Simultaneous Passive Coherent Combining And Mode Locking In Fiber Laser Arrays .....</b>  | 2800 |
| <i>Herbert Winful</i>  |      |
| <b>58 Khz Ultra-Low Repetition Rate Ultralong Erbium-Doped Fiber Laser Mode-Locked By Carbon Nanotubes.....</b>                            | 2802 |
| <i>Henrique Rosa</i>   |      |
| <b>Large Mode Area Fiber Design With Asymmetric Bend Compensation .....</b>  | 2804 |
| <i>John Fini</i>   |      |
| <b>182 Nj All Thulium Fiber CPA System.....</b>  | 2806 |
| <i>Robert Sims</i>   |      |
| <b>Thermal Effects In High-Power Fiber Amplifiers .....</b>  | 2808 |
| <i>Kristian Hansen</i>   |      |
| <b>Analysis Of Ultrashort Pulsed Fopos .....</b>   | 2810 |
| <i>Jay Sharping</i>  |      |
| <b>Temporal Shaping Of Parabolic Chirped Pulses With 27 Db Extinction Ratio For Fiber Chirped Pulse Amplification Systems .....</b>        | 2812 |
| <i>Dat Nguyen</i>  |      |
| <b>Demonstration Of 4-Mm Short Length Fiber Laser Oscillation In Nd-Doped Silica Fiber Fabricated By Zeolite Method .....</b>              | 2814 |
| <i>Motoichiro Murakami</i>   |      |
| <b>Tellurite Suspended Core Nanofiber With Extremely Large Holey Region.....</b>   | 2816 |
| <i>Meisong Liao</i>  |      |
| <b>Self-Interference Lloyd's Fiber Interferometer .....</b>  | 2818 |
| <i>Cheng-Ling Lee</i>  |      |
| <b>Monolithic Interferometer Based On Gemini Fiber .....</b>   | 2820 |
| <i>Patrik Rugeland</i>   |      |
| <b>Post-Processing Multicore Photonic Crystal Fibers For Locally Coupling Selected Core Pairs.....</b>                                     | 2822 |
| <i>Christiano De Matos</i>   |      |
| <b>Phase Dependent Second-Order Fiber Bragg Gratings .....</b>   | 2824 |
| <i>Nai-Hsiang Sun</i>  |      |
| <b>Demonstration Of Side Coupling Between High Power Laser Diode Array And Double-Clad Fiber Using Sub-Wavelength Grating.....</b>         | 2826 |
| <i>Chieh-Wei Huang</i>   |      |

|   |      |
|---|------|
| <b>9.5-Mj, 830-Ps, 0.5-Khz Single Frequency MOPA System With Near Diffraction Limited Beam Quality</b>                              | 2828 |
| <i>Alexander Gaydardzhiev</i>   |      |
| <b>All-Reflective Ti:Sa Power Amplifier For Petawatt Laser</b>  | 2830 |
| <i>Joel Blakeney</i>  |      |
| <b>Techniques For Pre-Pulse Contrast Improvement On The 0.5 Ps, 80 J, "C" Beamlne Of The Trident Laser</b>                          | 2832 |
| <i>Randall P. Johnson</i>   |      |
| <b>Compact, Diode-Pumped Yb:YAG Laser With Combination Acousto-Optic And Passive Q-Switch For LIDAR Applications</b>                | 2834 |
| <i>Mikhail Yakshin</i>  |      |
| <b>Lifetest Of The High Output Maximum Efficiency Resonator (HOMER) Laser For The SAFFIRE Instrument On NASA's Desdyni Project</b>  | 2836 |
| <i>Paul Stysley</i>   |      |
| <b>Subpicosecond Pulse Generation From A Chirped-Pulse Multipass-Cavity Cr4+:Forsterite Oscillator</b>                              | 2838 |
| <i>Huseyin Cankaya</i>  |      |
| <b>Frequency Stable Coupling Of Laser Oscillators Using Gain Gratings In Nd:YAG</b>   | 2840 |
| <i>Roland Ullmann</i>   |      |
| <b>15 Ps Quasi-Continuously Pumped Passively Mode-Locked 2.4% Doped Nd:YAG Laser In Bounce Geometry</b>                             | 2842 |
| <i>Václav Kubecák</i>   |      |
| <b>TEM00 Quasi-Concentric Laser Resonator With Line-Shaped End-Pumping Profile: Power-Insensitive Operating Point</b>               | 2844 |
| <i>Xing Fu</i>  |      |
| <b>Upconversion With Ho3+ And Tm3+ Codoped Lead Lanthanum Zirconate Titanate Ceramics</b>   | 2846 |
| <i>Hua Zhao</i>   |      |
| <b>Effects Of Laser Spectrum On Amplified Spontaneous Emission Prepulse Duration In Chirped Pulse Amplification Lasers</b>          | 2848 |
| <i>Seong Ku Lee</i>   |      |
| <b>Solution-Processed 3D Chalcogenide Glass Waveguides</b>  | 2850 |
| <i>Yunlai Zha</i>   |      |
| <b>Stability Of Chalcogenide Glass Solutions For Photonic Applications</b>  | 2852 |
| <i>Maike Waldmann</i>   |      |
| <b>Continuous Tuning Of Terahertz Generation In Fan-Out Periodically Poled Stoichiometric Lithium Tantalate</b>                     | 2854 |
| <i>Nan Ei Yu</i>  |      |
| <b>Sol-Gel Preparation And Spectral Characterization Of Y2O3 Powders Doped With Yb3+ And Nd3+</b>                                   | 2856 |
| <i>Zackery Fleischman</i>   |      |
| <b>Visible Light Generation And Its Influence To Supercontinuum In As2S3 Microstructured Fiber</b>                                  | 2858 |
| <i>Weiqing Gao</i>  |      |
| <b>Characteristics Of In-Fiber Mach-Zehnder Type Interferometer In Hollow-Core Photonic Bandgap Fiber</b>                           | 2860 |
| <i>Gil Hwan Kim</i>   |      |
| <b>Gratings In Plasmonic V-Groove Waveguides</b>  | 2862 |
| <i>Cameron Smith</i>  |      |
| <b>Au And Ag Nano-Particle Embedded Plasmonic Metal-Slotted Polymer Electro-Optic Waveguide Modulator</b>                           | 2864 |
| <i>Seongku Kim</i>  |      |
| <b>Investigation Of Blueshift Of Photoluminescence Emission Peak In Ingan/Gan Multiple Quantum Wells</b>                            | 2867 |
| <i>Yujie Ding</i>   |      |
| <b>Below Bandgap Excitation Of SnO<sub>2</sub> Nanowires: The Relaxation Of Trap States</b>   | 2869 |
| <i>San-Hui Chi</i>  |      |
| <b>Fabrication And Optical Properties Of Aligned Silicon Nanowire Arrays Realized With Thin Silver Film</b>                         | 2871 |
| <i>Yung-Jr Hung</i>   |      |
| <b>Refractive Index Of Nanolayered Polymeric Optical Materials</b>  | 2873 |
| <i>Michael Brindza</i>  |      |
| <b>25.54% Efficient Single-Junction GaAs Solar Cells Using Spin-On-Film Graded-Index TiO<sub>2</sub>/SiO<sub>2</sub> AR-Coating</b> | 2875 |
| <i>Wen-Jeng Ho</i>  |      |

|   |      |
|---|------|
| <b>650mhz-Prf-Femtosecond Cr4+:Forsterite Laser With Dispersioncompensating Gainnas SESAM.....</b>  | 2877 |
| <i>Stephane Calvez</i>  |      |
| <b>Sub-12 Fs Pulses Characterization By Self-Referenced Spectral Interferometry .....</b>   | 2879 |
| <i>Stéphanie Grabielle</i>  |      |
| <b>High-Speed Nanometer-Resolved Imaging-Based Laser Vibrometry .....</b>   | 2881 |
| <i>Keisuke Goda</i>   |      |
| <b>High-Power Ultrafast Solid-State Laser Using Graphene Based Saturable Absorber .....</b>   | 2883 |
| <i>Zhipei Sun</i>   |      |
| <b>A Novel Z-Cut Linbo<sub>3</sub> Mach-Zehnder Modulator Using Resonant CPW Electrodes With Single Driving Signal For Zero-Chirp Operation .....</b>             | 2885 |
| <i>Masayuki Motoya</i>  |      |
| <b>Generation Of High-Power Infrared Laser Pulses By Dual-Chirped Optical Parametric Amplification Scheme.....</b>  | 2887 |
| <i>Qingbin Zhang</i>  |      |
| <b>High Power Short Pulse Generation At High Repetition Rate From Ingan Violet Laser Diodes .....</b>   | 2889 |
| <i>Vojtech Ollé</i>   |      |
| <b>Pulse Measurement Based On Simultaneous Two- And Three-Photon Autocorrelation In A Gaasp Photomultiplier Tube .....</b>  | 2891 |
| <i>Yizhen Wei</i>   |      |
| <b>Experimental Demonstration Of An All-Diffractive Quasi-Direct Space-To-Time Pulse Shaper By Frequency-Resolved Optical Gating .....</b>                        | 2893 |
| <i>Shang-Da Yang</i>  |      |
| <b>Highly Stabilized Frequency-Locked Optical Frequency Comb Signal Generation Using Amplified Optical Fiber Loop With SSB-SC Modulation.....</b>                 | 2895 |
| <i>Atsushi Kanno</i>  |      |
| <b>Generation Of Intense Femtosecond Laser Pulse By Compression Of An Idler Pulse With An Identical Positive Dispersive Media As Signal Pulse Stretcher .....</b> | 2897 |
| <i>Yutaka Akahane</i>   |      |
| <b>Time-To-Space Conversion At 1.55μM By Non-Degenerate SFG.....</b>  | 2899 |
| <i>Dror Shayovitz</i>   |      |
| <b>Ellipticity Dependence Of High Harmonics From 400 Nm Driving Pulses.....</b>   | 2901 |
| <i>Sabih Khan</i>   |      |
| <b>Pulse Characterization Of A Passively Mode-Locked Quantum Dot Semiconductor Laser Using FROG And Autocorrelation .....</b>                                     | 2903 |
| <i>Yan Li</i>   |      |
| <b>High Repetition Rate High Average Power All-Normal Dispersion Yb:Fiber Ring Laser .....</b>  | 2905 |
| <i>Hongyu Yang</i>  |      |
| <b>Design Of Three-Terminal Gan Light Emitting HBT For Free Space Communication .....</b>   | 2907 |
| <i>Shengling Deng</i>   |      |
| <b>Spectral Analysis Of Noise Sources In Ingan Light Emitting Diodes.....</b>   | 2909 |
| <i>Gray Lin</i>   |      |
| <b>Reduction Of Efficiency Droop In Semipolar (11̄01) Ingan/Gan Light Emitting Diodes Grown On Patterned Silicon Substrates .....</b>                             | 2911 |
| <i>Ching-Hsueh Chiu</i>   |      |
| <b>Gan-Based Leds With Photonic Crystal Nanorod Sidewall Reflectors For Versatile Radiation Directionality Control .....</b>                                      | 2913 |
| <i>Yun-Wei Cheng</i>  |      |
| <b>Promotion Of The Inverted Polymer Solar Cells With NiO Modification.....</b>   | 2915 |
| <i>Jian-Lin Chiu</i>  |      |
| <b>Plasmonic Nanostructures For Organic Photovoltaic Devices.....</b>   | 2917 |
| <i>Won Park</i>   |      |
| <b>Multiexposure Speckle Contrast Imaging Using Current Pulsed Vcsels .....</b>   | 2919 |
| <i>Hart Levy</i>  |      |
| <b>Resolution Improvement Of Fluorescence Laminar Optical Tomography By Angled Incidence And Detection.....</b>   | 2921 |
| <i>Chao-Wei Chen</i>  |      |
| <b>Combining Phase Contrast Microscopy And Laser Tweezers Raman Spectroscopy To Characterize Germination Of Single Bacterial Spores.....</b>                      | 2923 |
| <i>Lingbo Kong</i>  |      |
| <b>The Study Of Apoptotic Morphological Changes By Dual-Wavelength Digital Holographic Microscopy .....</b>   | 2925 |
| <i>Alexander Khmaladze</i>  |      |

|  |      |
|--|------|
| <b>Single-Shot Imaging Of Nanoscale Dynamics By Extreme Ultraviolet Microscopy .....</b>   | 2927 |
| <i>Sergio Carbajo</i>  |      |
| <b>Electro-Optic Microwave-Lightwave Converter Using Patch Antenna Embedded With A Narrow Gap For Optical Modulation .....</b>                         | 2929 |
| <i>Yusuf Nur Wijayanto</i>   |      |
| <b>A 10Gb/S DFT Based Fast Optical OFDM Scheme With Double Spectral Efficiency .....</b>   | 2931 |
| <i>Cheng Lei</i>   |      |
| <b>FIR Analog Filter Dependence Of HCG-Based Hollow-Core Waveguides Upon Varying Of Waveguide Parameters .....</b>                                     | 2933 |
| <i>Bishara Shamee</i>  |      |
| <b>Demonstration Of A Video Frame Rate Full Muller-Metric Eye-Safe Imaging Laser Radar .....</b>   | 2935 |
| <i>Selim Shahriar</i>  |      |
| <b>Photonic-Assisted Instantaneous Frequency Measurement Based On A Single Mach-Zehnder Interferometer.....</b>  | 2937 |
| <i>Dai Jian</i>  |      |
| <b>Three Dimensional Finite Element Modeling Of Laser Cladding Of Nickel Alloy With 1.5wt.% And 3wt.% Nano Ceo2 On The Low Carbon Steel 1015 .....</b> | 2939 |
| <i>Gholamreza Fayaz</i>  |      |
| <b>All-Optical Logic Gates (NAND And AND) Based On Multiinjection In Single Mode Fabry-Perot Laser .....</b>   | 2941 |
| <i>Bikash Nakarmi</i>  |      |
| <b>Optical Inspection Of ITO Conducting Glass With Optical Coherence Tomography .....</b>  | 2943 |
| <i>Meng-Tsan Tsai</i>  |      |

#### **JTHA MICROSCOPIC IMAGING AND ENDOSCOPY:**

|  |      |
|--|------|
| <b>Fiber-Optic Two-Photon Fluorescence And Second Harmonic Generation Endomicroscopy .....</b>   | 2945 |
| <i>Xingde Li</i>   |      |
| <b>Full-Range, Complex-Conjugate-Free, Endoscopic Spectral-Domain Optical Coherence Tomography.....</b>  | 2947 |
| <i>Kang Zhang</i>  |      |
| <b>Optical Coherence Tomography Forward-Imaging Needle For Real-Time Deep Brain Surgery Guidance.....</b>  | 2949 |
| <i>Chia-Pin Liang</i>  |      |
| <b>Image-Guided Breast Biopsy With Optical Coherence Tomography .....</b>  | 2951 |
| <i>Nicușor Iftimia</i>   |      |
| <b>Simultaneous Morphological And Biochemical Imaging Of Oral Epithelial Cancer In A Hamster Cheek Pouch Model.....</b>  | 2953 |
| <i>Brian Applegate</i>   |      |
| <b>Monitoring Of Germination Dynamics Of Multiple Individual Bacterial Spores By Multiple-Trap Raman Tweezers And Differential Interference Contrast Microscopy.....</b> | 2955 |
| <i>Pengfei Zhang</i>   |      |

#### **JTHB NONLINEAR AND QUANTUM SCIENCE AND MEASUREMENTS**

##### **JOINT POSTER SESSION:**

|  |      |
|--|------|
| <b>Pairwise Concurrence Dynamics Of A 4 Qubit Model Beyond Rotating Wave Approximation .....</b>           | 2957 |
| <i>S. M. Hashemi Rafsanjani</i>  |      |
| <b>Atomic Vapor Quantum Memory For A Photonic Polarization Qubit.....</b>                                  | 2959 |
| <i>Young-Wook Cho</i>  |      |
| <b>Quantum Correlations Using Strong Optical Pulses In Rare Earth Ion Doped Crystals.....</b>              | 2961 |
| <i>Patrick Ledingham</i>   |      |
| <b>Analysis Of Two Level Atom In Bichromatic Field: Entropy Flow And Search For The Carnot Cycle .....</b> | 2963 |
| <i>Robinjeet Singh</i>   |      |
| <b>Decay Time In A Cavity In Slow Or Fast Light Regime .....</b>   | 2965 |
| <i>Fabien Bretenaker</i>   |      |
| <b>Time-Dependent Inhibited Spontaneous Emission .....</b>   | 2967 |
| <i>David Branning</i>  |      |
| <b>Full Quantum Mechanically Treatment Of Squeezed Vacuum State Generation Through Self-Rotation .....</b> | 2969 |
| <i>Kebei Jiang</i>   |      |

|   |      |
|---|------|
| <b>Generation Of A Macroscopic Singlet State In An Atomic Ensemble .....</b>  | 2971 |
| <i>Naeimeh Behbood</i>  |      |
| <b>Spectral Properties Of Rare-Earth-Ion Doped Whispering Gallery Mode Resonators.....</b>  | 2973 |
| <i>David Mcauslan</i>   |      |
| <b>Scalable Multi-Photon Coincidence-Counting Electronics .....</b>   | 2975 |
| <i>David Branning</i>   |      |
| <b>Search For Patterns In Single-Photon Polarization Sequences.....</b>   | 2977 |
| <i>David Branning</i>   |      |
| <b>Extracting The Radiative, Nonradiative And Spin-Flip Rate Of Single Self-Assembled Quantum Dots<br/>In Photonic Crystals.....</b>                      | 2979 |
| <i>Qin Wang</i>   |      |
| <b>Resonance Fluorescence From Quantum Dots: Beyond The Mollow Triplet.....</b>   | 2981 |
| <i>Anders Lund</i>  |      |
| <b>Quantum Control Of Two-Photon Inter-Excited States Transitions .....</b>   | 2983 |
| <i>Jaewook Ahn</i>  |      |
| <b>Tunneling Current In A Double Quantum Dot Excitonic System.....</b>  | 2985 |
| <i>Amit Joshi</i>   |      |
| <b>Photon-Number-Resolving Detection At 1.04 <math>\mu</math>M By Coincidence Frequency Upconversion .....</b>  | 2987 |
| <i>Kun Huang</i>  |      |
| <b>Frequency Down-Conversion Of Non-Classical Light From Visible Wavelength To Telecom<br/>Wavelength Using Difference-Frequency Generation .....</b>     | 2989 |
| <i>Rikizo Ikuta</i>   |      |
| <b>Bayesian Analysis Of Parity Based Detection Scheme.....</b>  | 2991 |
| <i>Keith Motes</i>  |      |
| <b>Quantum Theory Of Optical Coherence In The Space-Frequency Domain.....</b>   | 2993 |
| <i>Mayukh Lahiri</i>  |      |
| <b>Quantum Frequency-Entangled Optical Spread Spectrum For Stealthy Target Detection And<br/>Communications .....</b>                                     | 2995 |
| <i>Jonathan Habif</i>   |      |
| <b>Design Of Synchronous “Plug &amp; Play” QKD-WDM-PON For Efficient Quantum Communications.....</b>  | 2997 |
| <i>Martin Roetteler</i>   |      |
| <b>Spontaneous Emission From Nanodiamond NV Color Centers On Structured Surfaces .....</b>  | 2999 |
| <i>Michael Steel</i>  |      |
| <b>Polarization Entanglement Generation Based On Birefringence In Polarization Maintained<br/>Dispersion Shifted Fiber At 1.5 <math>\mu</math>M .....</b> | 3001 |
| <i>Qiang Zhou</i>   |      |
| <b>Twin-Photon Correlated Confocal Microscopy .....</b>   | 3003 |
| <i>David Simon</i>  |      |
| <b>Multipartite Entanglement In The Optical Frequency Comb Of A Depleted-Pump Optical Parametric<br/>Oscillator .....</b>                                 | 3004 |
| <i>Reihaneh Shahrokhsahi</i>  |      |
| <b>Generation Of Narrowband Hyperentangled Biphotos .....</b>   | 3007 |
| <i>Shanchao Zhang</i>   |      |
| <b>Photon-Phonon Entanglement In A Coupled Optomechanical System .....</b>  | 3009 |
| <i>Uzma Akram</i>   |      |
| <b>Charge Transport And Ultrafast Localization In Nanocrystalline Cds Films Studied By Optical Pump<br/>- Terahertz Probe Spectroscopy .....</b>          | 3011 |
| <i>Petr Kuzel</i>   |      |
| <b>Saturation Behaviour Of Pbse Nanocrystal Exciton Emission Coupled To Silicon Photonic Crystal<br/>Microcavities .....</b>                              | 3013 |
| <i>Charles Foell</i>  |      |
| <b>Thermoelectric Vs. Photoelectric Response Of Graphene-Metal Photodetectors .....</b>   | 3015 |
| <i>Haining Wang</i>   |      |
| <b>A Quantum-Optical Approach To Carrier Multiplication In Quantum Dots.....</b>  | 3017 |
| <i>Franz Schulze</i>  |      |
| <b>A Proposed Scheme For The Electron And Nuclear Spin Initialization In General Localized Electron<br/>Systems .....</b>                                 | 3019 |
| <i>Toshihide Takagahara</i>   |      |
| <b>Carrier Dynamics Investigation In A Quantum Cascade Laser Using Mid-IR Femtosecond Pulses.....</b>   | 3021 |
| <i>Sheng Liu</i>  |      |
| <b>Effects Of Exchange, Phase Space Filling, And Screening On 1s-2p 2D Excitonic Transitions.....</b>   | 3023 |
| <i>Andrew Parks</i>   |      |

|   |      |
|---|------|
| <b>Calculations Of The Two-Photon Franz-Keldysh Effect And Field-Induced Quantum Interference Control In GaAs .....</b>                                       | 3025 |
| <i>Jared Wahlstrand</i>   |      |
| <b>Photoinduced Critical Slowing Down Of Femtosecond Hole Spin Relaxation In Ferromagnetic Gannas.....</b>  | 3027 |
| <i>Tianqi Li</i>  |      |
| <b>Coherent Control Of Phonon Localization In ZnTe(110) Using Femtosecond Laser Pulses.....</b>   | 3029 |
| <i>Jianbo Hu</i>  |      |
| <b>Ultrafast Thz Saturable Absorption In Doped Semiconductors .....</b>   | 3031 |
| <i>Dmitry Turchinovich</i>  |      |
| <b>Dynamics Of Photo-Excited Carriers In Gallium Nitride Under Subpicosecond Laser Pulse Excitation .....</b>   | 3033 |
| <i>Sergey Rudin</i>   |      |
| <b>Time-Resolved X-Ray Diffraction With Polycapillary X-Ray Optics .....</b>  | 3036 |
| <i>Matthew Decamp</i>   |      |
| <b>Conical Intersection Dynamics In A Rhodopsin Analog: 9-Cis Isorhodopsin .....</b>  | 3038 |
| <i>Dario Polli</i>  |      |
| <b>Characterizing Isolated Atomic Unit Attosecond Pulses.....</b>   | 3040 |
| <i>Michael Chini</i>  |      |
| <b>Molecular Orientation By Intense Visible And Thz Optical Pulses.....</b>   | 3042 |
| <i>Kenta Kitano</i>   |      |
| <b>Explosions Of Xenon Doped Methane Clusters In Intense X-Ray FEL Pulses .....</b>   | 3044 |
| <i>Nirmala Kandadai</i>   |      |
| <b>Effects Of Inter-Electron Correlation Before Ionization.....</b>   | 3046 |
| <i>Xu Wang</i>  |      |
| <b>Optimized Two-Color Polarization Gating With Infrared Laser For Isolated Attosecond Pulse Generation.....</b>  | 3048 |
| <i>Pengfei Lan</i>  |      |
| <b>Influence Of Nonadiabatic Tunneling Ionization On Short-Wavelength-Driven High Harmonic Generation.....</b>  | 3050 |
| <i>Vasileios-Marios Gkortsas</i>  |      |
| <b>Strong-Field Quantum Control Of Energy Ladder Climbing .....</b>   | 3052 |
| <i>Jaewook Ahn</i>  |      |
| <b>Polarization Dependence Of Carbon Fragments From Methane In Strong And Ultrastrong Laser Fields.....</b>   | 3054 |
| <i>Nagitha Ekanayake</i>  |      |
| <b>Two-Color-Laser-Driven Direct Electron Acceleration In Infinite Vacuum.....</b>  | 3056 |
| <i>Liang Jie Wong</i>   |      |
| <b>Enhanced Surface Third Harmonic Generation In TiO<sub>2</sub> Nanolayers.....</b>  | 3058 |
| <i>Ruediger Grunwald</i>  |      |
| <b>Investigation Of Slow, Stop, And Fast Light Based On Polariton Resonances In Boron Nitride .....</b>   | 3060 |
| <i>Yujie Ding</i>   |      |
| <b>Anti-Stokes Photoluminescence In GaN Due To Three-Photon Absorption .....</b>  | 3062 |
| <i>Yujie Ding</i>   |      |
| <b>Low-Power All-Optical Switching Via Tunable Coupling Of Nanocomposite Photonic Crystal Microcavities .....</b>   | 3064 |
| <i>Xiaoyong Hu</i>  |      |
| <b>Experimental Observation Of Raman-Shifting Soliton Pairs .....</b>   | 3066 |
| <i>Alexander Hause</i>  |      |
| <b>Calculating The Second Harmonic Near Field Radiation Pattern From A Linbo<sub>3</sub> Nanowire Using A Nonlinear Volume Integral Equation Method .....</b> | 3068 |
| <i>Ioannis Papadopoulos</i>   |      |
| <b>Phase-Matched Second Harmonic Generation By Enhanced Nonlinearities In Ferroelectric Domain Walls .....</b>  | 3070 |
| <i>Xuewei Deng</i>  |      |
| <b>A Strategy To Experimentally Find Bound States Of Dispersion Managed Solitons .....</b>  | 3072 |
| <i>Philipp Rohrmann</i>   |      |
| <b>Measuring Vortex Charge With A Triangular Aperture .....</b>   | 3074 |
| <i>Luis E. E. De Araujo</i>   |      |
| <b>Control Of Optical Rogue Waves In Supercontinuum Generation With A Minute Continuous Wave .....</b>  | 3076 |
| <i>Qian Li</i>  |      |
| <b>Theory Of Faraday Effect In High-Q Whispering-Gallery Optical Cavities.....</b>  | 3078 |
| <i>Mani Hosseini-Zadeh</i>  |      |

|  |      |
|--|------|
| <b>Transversely Stable Soliton Trains In Photonic Lattices .....</b>   | 3080 |
| <i>Jianke Yang</i>   |      |
| <b>Nonelectrical Poling Procedure For Ordering NLO Dyes In Novel Host Amorphous Ferroelectric Polymer.....</b>               | 3082 |
| <i>Atsushi Sugita</i>  |      |
| <b>Direct Observation Of Slow Light In The Noise Spectrum Of A Laser .....</b>   | 3084 |
| <i>Fabien Bretenaker</i>   |      |
| <b>3D OPCPA Simulations For A Petawatt Class System Including Nonlinear Refractive Index Effects.....</b>                    | 3086 |
| <i>Alexandre Thai</i>  |      |
| <b>Full Characterization Of Tightly Focused Vector Fields Through Far Field Third Harmonic Signals.....</b>                  | 3088 |
| <i>David Kupka</i>   |      |
| <b>Second Harmonic Generation In Planar Au/Co/Si Structure: Current And Magneto-Induced Effects.....</b>                     | 3090 |
| <i>Sergey Mitryukovskiy</i>  |      |
| <b>The Effects Of Spurious Loss/Gain In Numerical Simulations.....</b>   | 3092 |
| <i>Christopher Sapiano</i>   |      |
| <b>Low Light-Level Two-Photon Absorption Using Tapered Optical Fibers In Rubidium Vapor .....</b>                            | 3094 |
| <i>Todd Pittman</i>  |      |
| <b>Observation Of Optical Phase Amplification In Three Wave Mixing.....</b>  | 3096 |
| <i>Douglas French</i>  |      |
| <b>Equiangular Spiral Tellurite Photonic Crystal Fiber For Supercontinuum Generation In Mid-Infrared .....</b>               | 3098 |
| <i>Yousef Azabi</i>  |      |
| <b>Unidirectional Perfect Transmission Resonances In Nonlinear Asymmetric Photonic Multilayers.....</b>                      | 3100 |
| <i>Sergei Zhukovsky</i>  |      |
| <b>Continuous-Wave Second Harmonic Generation Of A Tunable CO<sub>2</sub> Laser In Orientation-Patterned Gaas .....</b>      | 3102 |
| <i>Shekhar Guha</i>  |      |
| <b>Gold Nanoshells For Nonlinear Plasmonic At Telecom Wavelengths .....</b>  | 3104 |
| <i>Edilson Falcao-Filho</i>  |      |
| <b>Two-Photon Correlations Of Broadband Four Wave Mixing .....</b>   | 3106 |
| <i>Rafi Vered</i>  |      |
| <b>Compact Representation Of Spatial Modes Of Phase-Sensitive Image Amplifier .....</b>                                      | 3108 |
| <i>Muthiah Annamalai</i>   |      |
| <b>Rigorous Quantification Of Polarized Fiber Continuum Generation For Broadband Coherent Optical Sources.....</b>           | 3110 |
| <i>Haohua Tu</i>   |      |
| <b>Observation Of Symmetry-Breaking Beam Dynamics In Optically Induced Hexagonal Photonic Lattices .....</b>                 | 3112 |
| <i>Peng Zhang</i>  |      |
| <b>Synthesis Of Flat And Broadband Parametric Gain By Idler Loss In Optical Fiber .....</b>                                  | 3114 |
| <i>Hongyao Liu</i>   |      |
| <b>Cascaded Higher-Order Soliton Compression .....</b>   | 3116 |
| <i>Qian Li</i>   |      |
| <b>Non-Axial-Scanning Second Harmonic Microscopy.....</b>  | 3118 |
| <i>Chuan Yang</i>  |      |
| <b>Hyperfine Aperiodic Optical Superlattice Optimized By Iterative Domino Algorithm For Phase-Matching Engineering .....</b> | 3120 |
| <i>Cheng-Wei Hsu</i>   |      |
| <b>Noise Reduction Of Supercontinua Via Optical Feedback.....</b>  | 3122 |
| <i>Carsten Cleff</i>   |      |
| <b>Time-Domain Analysis Of Pulse Propagation In High-Contrast Layered Structures With Resonant Nonlinearities .....</b>      | 3124 |
| <i>Peyman Sarrafi</i>  |      |
| <b>Enhanced Two-Photon Absorption In Polycrystalline Silicon .....</b>   | 3126 |
| <i>Karan Mehta</i>   |      |
| <b>Remote Gas Leak Detection Using A Portable Mini-Lidar, Based On A Doubly-Resonant OPO.....</b>                            | 3128 |
| <i>Bertrand Hardy</i>  |      |
| <b>Non-Solitonic Extension Of Supercontinua .....</b>  | 3130 |
| <i>Ben Chapman</i>   |      |
| <b>Broadband, Rapidly Tunable, Bib3o6 Femtosecond Optical Parametric Oscillator Directly Pumped By A Ti:Sapphire.....</b>    | 3132 |
| <i>Adolfo Esteban-Martin</i>   |      |

|  |      |
|--|------|
| <b>Hybrid Modal-Phase-Matched And Bent-Quasi-Phase-Matched Wavelength Conversion In Algaas/Sio2 Rib-Type Zigzag Waveguides .....</b>                   | 3134 |
| <i>Tomonori Matsushita</i>   |      |
| <b>Fiber-Laser-Pumped, High-Power, Continuous-Wave, Mid-Infrared Optical Parametric Oscillator Based On Mgo:Sppt.....</b>                              | 3136 |
| <i>S. Chaitanya Kumar</i>  |      |
| <b>Broadband Phase-Matched Backward Difference-Frequency Generation: A Novel Scheme For Spectral Optical Phase Conjugation .....</b>                   | 3138 |
| <i>Yujie Ding</i>  |      |
| <b>Sum Frequency Generation Of 595nm Ps-Pulses Based On Er-Doped Fiber Amplifier Setup And Seeded By Gain-Switched Laser Diodes .....</b>              | 3140 |
| <i>Kristian Lauritsen</i>  |      |
| <b>2D PPLN For Simultaneous Laser Q-Switching And Optical Parametric Oscillation In A Nd:YVO4 Laser .....</b>  | 3142 |
| <i>Yen-Hung Chen</i>   |      |
| <b>Generation Of Continuous-Wave Raman Sidebands Through Degenerate And Nondegenerate Intracavity Four-Wave Mixing.....</b>                            | 3144 |
| <i>Shin-Ichi Zaitsu</i>  |      |
| <b>Transforming Conventional PPLN-Based Frequency Converters To Cover 13-30 Microns: Bridging Gap Between Mid-Infrared And Terahertz Regions .....</b> | 3146 |
| <i>Yujie Ding</i>  |      |
| <b>Supercontinuum Generation In A Sapphire Fiber And Comparison With A Compact PCF Based Light Source .....</b>  | 3148 |
| <i>Walter Nakaema</i>  |      |
| <b>Geometrical Output Coupling Method Of Harmonics In Enhancement Cavities .....</b>   | 3150 |
| <i>Johannes Weitenberg</i>   |      |
| <b>High Efficiency Quasi-Non-Critical Phase-Matched Ktiopo4 Optical Parametric Oscillation.....</b>  | 3152 |
| <i>Xiaodong Mu</i>   |      |
| <b>Three-Photon Counting In A Photomultiplier Tube For Ultrafast Source Characterization .....</b>   | 3154 |
| <i>Amir Nevet</i>  |      |
| <b>Study Of The Impedance Mismatch At The End-Facet Of A Parallel Plate Waveguide Operating In The Thz Regime .....</b>                                | 3156 |
| <i>Marx Mbonye</i>   |      |
| <b>Controlling Thz Wave Transmission Through Organic Copper Phthalocyanine (Cupc) Films On Si By Optical Excitation .....</b>                          | 3158 |
| <i>Joong Wook Lee</i>  |      |
| <b>Application Of Metal-Clad Antiresonant Reflecting Hollow Waveguides To Tunable Terahertz Notch Filter .....</b>                                     | 3160 |
| <i>Jayu Lu</i>   |      |
| <b>Temperature Dependence Of Closed Mode Q-Factor In Terahertz Metamaterial Superlattice .....</b>   | 3162 |
| <i>J. Woo</i>  |      |
| <b>Terahertz Spectroscopy With Focused Beams: Gouy Shift Correction For Highly Accurate Refractive Index Retrieval.....</b>                            | 3164 |
| <i>Christelle Kadlec</i>   |      |
| <b>Quasi-TEM Mode Propagation In Dual-Wire Thz Waveguide .....</b>   | 3166 |
| <i>Pamela Tannouri</i>   |      |
| <b>Narrow Bandgap Semiconductor Based Thz-Emitters .....</b>   | 3168 |
| <i>Ingrid Wilke</i>  |      |
| <b>Hybrid Terahertz-Wave Source With Ultrawideband Tunability Utilizing Organic DAST And BNA Crystals.....</b>   | 3170 |
| <i>Takashi Notake</i>  |      |
| <b>Observation Of Slow Relaxation On Nano-Confined Water In Nanoporous MCM-41 By Terahertz Spectroscopy .....</b>                                      | 3172 |
| <i>Yu-Ru Huang</i>   |      |
| <b>Magnetically Controlled Broadband Thz Absorption In A Multiferroic Hexaferrite At Room Temperature .....</b>  | 3174 |
| <i>Eiichi Matsubara</i>  |      |
| <b>Millimeter-Wave-Band Pulse Formation Using Mach-Zehnder-Modulator-Based Flat Comb Generator .....</b>   | 3176 |
| <i>Isao Morohashi</i>  |      |

|   |      |
|---|------|
| <b>Intracavity Widely-Tunable Monochromatic Terahertz-Wave Generation With Organic BNA Crystal And KTP-OPO.....</b>                             | 3178 |
| <i>Ming Tang</i>  |      |
| <b>Terahertz Endoscope Based On Anti-Resonant Reflecting Hollow Core Waveguides .....</b>   | 3180 |
| <i>Borwen You</i>   |      |
| <b>Phase-Slope Measurement Of Tunable CW-Thz Radiation And Application For Distance Measurement Of Optically Rough Object .....</b>             | 3182 |
| <i>Takeshi Yasui</i>  |      |
| <b>Optically Pumped Mixing At 100 Ghz With Travelling-Wave Uni-Travelling Carrier Photodiodes.....</b>  | 3184 |
| <i>Efthymios Rouvalis</i>   |      |
| <b>Characterization Of Thz Beams.....</b>   | 3186 |
| <i>Thomas Kleine-Ostmann</i>  |      |
| <b>3D In Situ Mapping Of Focused Cylindrical Vector Beam Using Trapped Rayleigh Nanoparticles .....</b>   | 3188 |
| <i>Liangcheng Zhou</i>  |      |
| <b>Radial Polarization Interferometer.....</b>  | 3190 |
| <i>Gilad Lerman</i>   |      |
| <b>Generation And Tight Focusing Of Hybirdly Polarized Vector Beams .....</b>   | 3192 |
| <i>Gilad Lerman</i>   |      |
| <b>Time-Of-Flight Measurement Using Femtosecond Pulses .....</b>  | 3194 |
| <i>Joohyung Lee</i>   |      |
| <b>Passive Synchronization Of Repetition And Offset Frequency Between Two Mode-Locked Yb-Doped Fiber Lasers .....</b>                           | 3196 |
| <i>Naoya Kuse</i>   |      |
| <b>High-Resolution 133Cs 6S-6D, 6S-8S Two-Photon Spectroscopy Using An Intra-Cavity Scheme .....</b>  | 3198 |
| <i>You-Huan Chen</i>  |      |
| <b>Achieving Sub-Rayleigh Resolution Via Thresholding.....</b>  | 3200 |
| <i>Sara Mouradian</i>   |      |
| <b>Measurements Of Pulse Dynamics In Mode-Locked Fiber Lasers.....</b>  | 3202 |
| <i>Andrew Funk</i>  |      |
| <b>Optical Frequency Comb Using Polarization Maintaining Er-Doped Ultrashort Pulse Fiber Laser With Carbon-Nanotube Polyimide Film.....</b>     | 3204 |
| <i>Norihiko Nishizawa</i>   |      |
| <b>Noise Reduction Of A Carbon Nanotube Fiber Laser Frequency Comb.....</b>   | 3206 |
| <i>Jinkang Lim</i>  |      |
| <b>Characterization Of The RIN-To-Phase-Noise Conversion In The Microwave Synthesis From Mode-Locked Lasers .....</b>                           | 3208 |
| <i>Kan Wu</i>   |      |
| <b>Picometer Calibrator For Precision Linear Encoder Using A Laser Interferometer .....</b>   | 3210 |
| <i>Mariko Kajima</i>  |      |
| <b>2thz Optical Waveform Measurement By Development Of Digital Holographic Synthesizer &amp; Analyzer Of 400ghz Optical Frequency Comb.....</b> | 3212 |
| <i>Toshiaki Yamazaki</i>  |      |
| <b>Methods Towards Achieving Precise Birefringent Focusing .....</b>  | 3214 |
| <i>David Schmid</i>   |      |
| <b>Generating An Ultra-Stable Microwave In The Drop Tower .....</b>   | 3216 |
| <i>Andreas Resch</i>  |      |
| <b>Ultracompact Monolithic Broadband In-Line Micro Interferometric Sensor Based On Multi-Beam Interference .....</b>                            | 3218 |
| <i>Nan-Kuang Chen</i>   |      |
| <b>High Sensitivity Temperature Sensor Based On Bragg Grating In Micro/Nanofiber .....</b>  | 3220 |
| <i>Ruibing Liang</i>  |      |
| <b>A Distributed Sensing System Based On Low-Index Bragg Reflective Fiber Gratings .....</b>  | 3222 |
| <i>Manliang Zhang</i>   |      |
| <b>Fiber-Optic Range Sensing Based On Amplified Spontaneous Emission Noise Radar With Kramers-Kronig Phase Retrieval .....</b>                  | 3224 |
| <i>David Mermelstein</i>  |      |
| <b>A Fast Response Photonic Crystal Fiber Grating Refractometer With A Side-Opening Structure .....</b>   | 3226 |
| <i>Guanjun Wang</i>   |      |
| <b>A Comparative Study Of Raman Enhancement In Capillaries .....</b>  | 3228 |
| <i>Fatemeh Eftekhari</i>  |      |
| <b>Author Index</b>   |      |