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- CTu1L.4 **Integrated Optical Orbital Angular Momentum Multiplexing Device using 3-D Waveguides and a Silica PLC 1863**
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- CTu1L.6 **Polymeric Thermo-Optic Switch with Imprinting and Print-on-Demand Technology 1867**
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A. Dezfouliyan, A. M. Weiner; United States

- CTu3G.2 **Compressed Multi-frequency RF Sensing with Photonic Assistance 1887**
Y. Gao, Y. Dai, K. Xu, L. Yan, F. Yin, J. Li, J. Lin; China
- CTu3G.3 **Single-Shot Characterization of Ultrafast High-Repetition-Rate Signals Using an Asynchronous Time Magnifier 1889**
Y. Okawachi, R. Salem, A. R. Johnson, K. Saha, J. S. Levy, M. Lipson, A. L. Gaeta; United States
- CTu3G.4 **Generation of Programmable Passband Chirped Electrical Pulses using Optical Interferometry 1891**
A. Rashidinejad, A. M. Weiner; United States
- CTu3G.5 **Photonic Integrated Circuit for Channelizing RF Signals 1893**
A. Tauke-Pedretti, G. A. Vawter, G. Whaley, E. Skogen, M. Overberg, G. Peake, C. Alford, D. Torres, J. R. Wendt, F. Cajas; United States
- CTu3G.6 **Microwave Photonic Phase Shifter Using a Phase Modulator and a Fiber Bragg Grating in a Round-trip 1895**
H. Jiang, L. Yan, Z. Chen, J. Ye, Y. H. guo, A. Yi, W. Pan, B. Luo; China
- CTu3G.7 **Photonic Filtering for High-Frequency Optoelectronic Oscillator Operation 1897**
M. Bagnell, P. J. Delfyett; United States
- CTu3G.8 **RF Photonic Filters with 20-ns Bandwidth Reconfiguration Based on Optical Frequency Combs 1899**
R. Wu, D. E. Leaird, A. M. Weiner; United States

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- CM1M.1 **Microparticle Guiding and Acceleration in Optical Lattices Generated by Silicon-on-Insulator Multimode-Interference Waveguide-based Arrayed Optical Tweezers (SMART) 1901**
T. Lei, A. W. Poon; Hong Kong
- CM1M.2 **Single nano-particle sensing exploiting crossed polarizers to improve the signal-to-noise ratio 1903**
J. Grepstad, P. Kaspar, O. Solgaard, I. Johansen, A. Sudbo; Norway
- CM1M.3 **3D Pulsed Laser Triggered High Speed Microfluidic Fluorescence Activated Cell Sorter 1905**
Y. Chen, T. Wu, Y. Kung, M. Teitell, P. Chiou; United States
- CM1M.4 **Biophotonic Device for On-Chip Trapping and Spectroscopic Analysis 1907**
F. Bragheri, C. Liberale, G. Cojoc, P. Minzioni, G. Peroziello, R. La Rocca, L. Ferrara, V. Rajamanickam, E. Di Fabrizio, I. Cristiani; Italy
- CM1M.5 **Optical Manipulation of Particles using Silicon Photonics 1909**
A. W. Poon, T. Lei, J. Wang; Hong Kong

CM1M.6 **Trapping and guiding microparticles with self-accelerating vortex beams 1910**

J. zhao, P. Zhang, J. Liu, I. Chremmos, D. Deng, Y. Gao, N. Efremidis, D. N. Christodoulides, Z. Chen; United States

CM1M.7 **Clinical Detection of Viral Infection on an Optofluidic Chip 1912**

P. Measor, L. U. Zempoaltecatl, J. Parks, S. Naccache, S. Miller, C. Chiu, A. Hawkins, H. Schmidt; United States

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K. Kim, G. Bahl, W. Lee, J. Liu, M. Tomes, X. Fan, T. Carmon; United States

CM2H.2 **Highly Sensitive Optofluidic FRET Lasers with Genetically Encoded Fluorescent Protein Pairs 1916**

Q. Chen, X. Zhang, Y. Sun, M. Ritt, S. Sivaramakrishnan, X. Fan; United States

CM2H.3 **Gain Controlled Optofluidic Lasers with Self-assembled DNA Tetrahedron 1918**

Q. Chen, H. Liu, W. Lee, Y. Sun, D. Zhu, H. Pei, C. Fan, X. Fan; United States

CM2H.4 **Single Molecule Detection with an Yb-doped Microlaser 1920**

T. Lu, H. Lee, T. Chen, S. Herchak; Canada

CM2H.5 **reflection detection of nanoparticles using whispering gallery microresonators 1922**

J. Zhu, S. K. Ozdemir, L. Yang; United States

CM2H.6 **A Self-Referencing Biosensor Based upon a Dual-Mode External Cavity Laser 1924**

M. zhang, C. Ge, M. Lu, Z. Zhang, B. Cunningham; United States

CM2H.7 **Enhancement of the Sensitivity of an Open Micro-Cavity Based Optoacoustic Sensor 1926**

R. Peterson, S. Solis, B. Zhang, H. Huang, J. Ye; United States

CM2H.8 **High Sensitivity Biosensing Based on Symmetric Coupled Cavity Structure of Photonic Crystal Microcavities 1928**

C. Hsieh, S. Chakravarty, Y. Zou, L. Zhu, R. T. Chen; United States

CTh3I: Biosensors

CTh3I.1 **High-throughput screening of blood samples based on structured illumination on-chip imaging 1930**

S. A. Arpali, C. Arpali, A. F. Coskun, H. Chiang, A. Ozcan; United States

CTh3I.2 **High-performance refractometric nanosensor using circular plasmonic interferometer arrays 1932**

Y. Gao, Z. Xin, B. Zeng, Q. Gan, X. Cheng, F. J. Bartoli; United States

CTh3I.3 **Plasmonically Enhanced Biofilm Photobioreactors 1934**

M. Ooms, D. Sinton; Canada

CTh3I.4 **Bio-Inspired Plasmonic Sensors by Diatom Frustules 1936**

F. Ren, J. Campbell, D. Hasan, X. Wang, G. L. Rorrer, A. X. Wang; United States

CTh3I.5 **Self-growing of Plasmonic Optofluidic Network 1938**

H. Liu, Y. Zheng, S. Zhu; China

CTh3I.6 **Self-Assembled Nanolens Formation for Widefield Computational Imaging of Nanoparticles on a Chip 1940**

E. McLeod, O. Mudanyali, W. Luo, A. Greenbaum, A. F. Coskun, Y. Hennequin, C. P. Allier, A. . Ozcan; United States

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J. Lee, Y. Song, I. Ozden, A. Nurmikko; United States

CTu2M: Imaging & Microscopy I

CTu2M.1 **Extended wavelength tunability of a picosecond pulse source by double-pass spectral filter for fiber-laser-based stimulated Raman spectral microscopy 1944**

K. Nose, T. Kishi, Y. Ozeki, Y. Kanematsu, K. Itoh; Japan

CTu2M.2 **Imaging the noncentrosymmetric structural organization of tissues with Interferometric Second Harmonic Generation microscopy 1946**

M. Rivard, K. Popov, M. Laliberté, A. Bertrand-Grenier, F. Martin, H. Pépin, C. P. Pfeffer, C. Brown, L. Ramunno, F. Légaré; Canada

CTu2M.3 **Three-dimensional Polarization and Doppler Imaging of Living Tissue by Multi-Contrast Optical Coherence Tomography 1948**

Y. . Yasuno, Y. Hong, M. Ju; Japan

CTu2M.4 **In vivo Folate-Targeted Small Animal Imaging with Optical Diffusion Tomography 1950**

K. J. Webb, H. Tsai, B. Z. Bentz, V. Chelvam, V. Gaid, P. S. Low; United States

CTu2M.5 **Laser Speckle Contrast Imaging with Extended Depth of Field for Brain Imaging Applications 1952**

I. Sigal, Y. Atchia, R. Gad, A. M. Caravaca, D. Conkey, R. Piestun, O. Levi; Canada

CTu2M.6 **Imaging DNA damage-dependent chromatin dynamics via nonlinear photoperturbation 1954**

M. Tomas, P. Blumhardt, A. Deutzmann, D. Kromm, A. Leitenstorfer, E. Ferrando-May; Germany

CTu2M.7 **Cell-Phone Based Food Allergen Testing 1956**

A. F. Coskun, J. Wong, D. Khodadadi, R. Nagi, A. Tey, A. Ozcan; United States

CTu3N: Imaging & Microscopy II

CTu3N.1 **High-speed Live-cell Super-resolution Microscopy with Stochastically Switching Fluorophores 1958**

J. Bewersdorf; United States

CTu3N.2 **Optical Fiber Vortices for STED Nanoscopy 1959**

L. Yan, E. Aukorius, N. Bozinovic, G. J. Tearney, S. Ramachandran; United States

- CTu3N.3 **Measuring the 3D Position and Orientation of Single Molecules Simultaneously and Accurately with the Double Helix Microscope 1961**
M. D. Lew, M. P. Backlund, A. S. Backer, S. J. Sahl, G. Grover, A. Agrawal, R. Piestun, W. E. Moerner; United States
- CTu3N.4 **Depth-Resolved Nanoscopic Single Particle Tracking based on Fluorescence Phase-Shifting Interferometry 1964**
E. Arbel, A. Bilenca; israel
- CTu3N.6 **Single-cell photonic nanocavity probes 1966**
G. Shambat, S. Kothapalli, J. Provine, T. Sarmiento, J. S. Harris, S. Gambhir, J. Vuckovic; United States
- CTu3N.7 **Temporal focusing generated via a height-staggered microlens array can be used for wide-field optical-sectioning microscopy 1968**
J. Yu, D. B. Holland, G. A. Blake, C. Guo; United States

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CF1E: Applications of Fiber Nonlinearities

- CF1E.1 **Widely Wavelength-Tunable Ultra-Flat Frequency Comb and Short Pulse Generation from an Actively Mode-Locked Laser Using a Bismuth-Based Erbium-Doped Fiber and a Bismuth-Based Highly Nonlinear Fiber 1970**
Y. Fukuchi, J. Maeda; Japan
- CF1E.2 **Sub-50 fs Pulses from Frequency Comb Generated by Cascaded Four-wave Mixing in Highly-nonlinear Fiber 1972**
A. Ryabtsev, B. Nie, M. Dantus; United States
- CF1E.3 **Ultrafast Optical Signal Processing Using Fiber Nonlinearities 1974**
S. Namiki, M. Gao, K. Tanizawa, T. Kurosu, J. Kurumida, T. Inoue, H. Nguyen Tan; Japan
- CF1E.4 **Cladding pumped Q-switched fiber laser using a tapered fiber saturable absorber 1976**
S. Moore, D. B. Soh, S. E. Bisson, B. Patterson, W. Hsu; United States
- CF1E.5 **Mapping Dispersion Fluctuations along Optical Fibers Using Brillouin Probing and a Fast Analytic Calculation 1978**
F. alishahi, A. Vedadi, A. Denisov, M. A. Soto, K. Mehrany, C. S. Brès, L. Thévenaz; Iran, Islamic Republic of
- CF1E.6 **Chalcogenide microwires based Raman lasers 1980**
R. Ahmad, M. Rochette; Canada
- CF1E.7 **Stimulated-Brillouin-Scattering suppression in high power single frequency fiber amplifiers 1982**
L. Zhang, S. Cui, J. Hu, J. Wang, C. Liu, J. Zhou, Y. Feng; China

CM1I: Mode-locked Fiber Lasers

- CM1I.1 **Passively Mode-Locked Fiber Laser Incorporating Adaptive Filtering and Dispersion Management 1984**
X. Yang, H. Kamal, D. J. Richardson, P. Petropoulos; United Kingdom
- CM1I.2 **Supermode noise suppression in an actively mode-locked fiber laser with pulse intensity feed-forward 1986**
R. Wang, K. Xu, Y. Dai, F. Yin, J. Li, Y. Ji, J. Lin; China
- CM1I.3 **Multi-Bound Pulse State in a 250 GHz Mode-Locked Fiber Laser Based on a Silicon Micro-Ring Resonator 1988**
S. Jyu, L. Yang, C. Yeh, C. Chow, H. Tsang, Y. Lai; Taiwan
- CM1I.4 **285 mW High Power, Dissipative-Soliton Mode-Locked, Er-doped Fiber Laser using Carbon Nanotube 1990**
Y. Nozaki, N. Nishizawa, H. Kataura, E. Omoda, Y. Sakakibara; Japan
- CM1I.5 **A Low-Loss Carbon-Nanotube-Based Linear Cavity Fiber Laser for High Energy Pulse Generation 1992**
H. Liu, Y. Yang, K. Chow; Singapore
- CM1I.6 **Dissipative Soliton Resonance in an All-Normal-Dispersion Graphene Oxide Mode-Locked Yb-Doped Fiber Laser 1994**
Z. Cheng, W. Sida, S. Hongxing, J. Xu, Q. Yang, P. Wang; China
- CM1I.7 **Directly Imprinted Graphite Nano-Particle with Improved Quality for Sub-400 fs Passively Mode-Locked Fiber Laser 1996**
Y. Lin, G. Lin; Taiwan
- CM1I.8 **High-energy noise-like pulses generated by a dispersion-mapped Yb-doped fiber laser 1998**
A. Zaytsev, C. Lin, Y. You, C. Chung, C. Wang, C. Pan; Taiwan

CM2I: Ultrafast Fiber Sources

- CM2I.1 **Extended Self-Similar Pulse Evolution in a Laser with Dispersion-Decreasing Fiber 2000**
H. Liu, F. Yu, A. Chong, J. C. Knight, F. W. Wise; United States
- CM2I.2 **Ytterbium Fiber Oscillator with Higher-Order-Mode Fiber Generating 7-nJ, 60-fs Pulses at 1035 nm 2002**
A. Fernández, L. Zhu, V. Kalashnikov, A. Verhoef, D. Lorenc, A. Baltuska; Austria
- CM2I.3 **Mode-locked Nd-doped fiber laser at 930 nm 2004**
A. Hideur, K. Qian, H. Wang, M. Laroche; France
- CM2I.4 **3 GHz, femtosecond Raman soliton source 2006**
G. Chang, H. Chen, J. Lim, S. Xu, Z. Yang, F. X. Kärtner; United States
- CM2I.5 **110 MHz Soliton Mode-Locked High Power Er-doped Fiber Laser using Carbon Nanotube Polyimide Film 2008**

H. Kawagoe, S. Ishida, M. Aramaki, Y. Sakakibara, E. Omoda, H. Kataura, N. Nishizawa;
Japan

CM2I.6 **Enhanced Bandwidth Generation in an Er Amplifier Similariton Fiber Laser 2010**
H. Liu, F. W. Wise; United States

CM2I.7 **Stable frequency comb derived from a narrowband Yb-fiber laser: pre-chirp management for self-referenced fCEO stabilization 2012**
J. Lim, H. Chen, G. Change, F. X. Kärtner; United States

CM2I.8 **All-fiber fundamentally mode locked 12 GHz laser comb for stable microwave generation 2014**
R. Thapa, E. Wilson, D. Nguyen, J. Zong, A. Chavez-Pirson; United States

CM3I: Special Fiber Design & Fabrication

CM3I.1 **Angle splice of large-core kagome hollow-core photonic crystal fiber for gas-filled microcells 2016**
C. Wang, T. Bradley, Y. Wang, K. L. Corwin, F. Gérôme, F. Benabid; United States

CM3I.2 **Long rubidium vapor lifetime in aluminosilicate sol-gel coated hypocycloidal core shape kagome HC-PCF 2018**
T. Bradley, J. J. McFerran, J. Jouin, P. Thomas, F. Benabid; United Kingdom

CM3I.3 **Design of single-moded, large-mode-area fibers with symmetric bend compensation 2020**
J. M. Fini, J. W. Nicholson; United States

CM3I.4 **Low-Loss, Single-Mode Propagation in Large-Mode-Area Leakage Channel Fiber from 1 to 2 μm 2022**
C. Jollivet, K. Wei, B. Samson, A. Schulzgen; United States

CM3I.5 **Low Mode Asymmetry Highly Birefringent Microstructured Fibers 2024**
A. N. Denisov, A. E. Levchenko, S. L. Semjonov, E. M. Dianov; Russian Federation

CM3I.6 **Strong and Robust Bragg Gratings in Photo-Thermo-Refractive Glass Fiber 2026**
P. Hofmann, C. Jollivet, R. Amezcua-Correa, E. Antonio-Lopez, D. Ott, M. SeGall, I. Divliansky, L. Glebova, L. Glebov, A. Schulzgen; United States

CM3I.7 **All-fiber Mode-locked Dissipative Thulium-doped Fiber Laser by Optically Deposited SWCNTs 2028**
Q. Wang, T. Chen, M. Li, B. Zhang, Y. Lu, K. Chen; United States

CM3I.8 **Atomic polarization relaxation time measurement of Rb filled hypocycloidal core shape Kagome HC-PCF 2030**
T. Bradley, J. J. McFerran, J. Jouin, F. Benabid, P. Thomas, E. Ilinova; United Kingdom

CM4I: Short Wavelength Fiber Lasers and Effects

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M. Laroche, B. Cadier, H. Gilles, S. Girard, L. Lablonde, T. Robin; France

- CM4I.2 **Generation of 55 W infrared and 35 W green power from a picosecond rod fiber amplifier 2034**
Z. Zhao, B. Dunham, F. W. Wise; United States
- CM4I.3 **Ultraviolet frequency comb generation by frequency quadrupling a high-power fiber amplifier 2036**
K. Yang, W. Li, S. Xuling, D. Bai, J. Zhao, M. Yan, Z. Heping; China
- CM4I.4 **High-power yellow and near-infrared lasers from cascaded four-wave mixing in nonlinear Yb-doped fiber amplifiers 2038**
Q. Hao, Z. Heping; China
- CM4I.5 **Self-bleaching Phenomenon Observed in the Ce/Yb Co-doped Silica Fiber 2040**
G. chen, J. Li; United States
- CM4I.6 **Suppression mechanism by Ca additive of photo-darkening effect in Yb-doped silica glass fiber 2042**
Y. Fujimoto, S. Sugiyama, M. Murakami, H. Nakano, T. Sato, H. Shiraga; Japan
- CM4I.7 **High-Temperature-Resistant Distributed Bragg Reflector Fiber Laser Based on Thermally Regenerated Gratings 2044**
R. Chen, A. Yan, M. Li, J. Canning, K. Chen; United States
- CM4I.8 **Wavelength and Pulse Width Tunable 1 μm Yb-doped Programmable Fiber Laser 2046**
Y. Kim, A. Archambault, A. Dupuis, B. Burgoyne, G. Pena, A. Villeneuve; canada

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- CTh3M.2 **High power fiber optic parametric amplifier at 1 μm wavelength based on a large area high order mode 2050**
P. Steinvurzel, J. Demas, B. Tai, Y. Chen, S. Ramachandran; United States
- CTh3M.3 **Comparison of Amplitude Noise of a Fiber Optical Parametric Oscillator and a Supercontinuum Source 2052**
L. S. Kiani, T. Lu, J. E. Sharping; United States
- CTh3M.4 **Polarization and Reflectivity Effects on Fiber Optical Parametric Oscillator Output Power 2054**
T. Lu, L. S. Kiani, J. E. Sharping; United States
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J. Savolainen, L. Grüner-Nielsen, P. Kristensen, P. Balling; Denmark

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M. Shin, O. Kwon, Y. Han; Korea, Republic of

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A. Voskoboinik, Z. Zhang, A. Almainan, A. E. Willner, M. Tur; United States

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Z. Yu, P. Rugeland, I. V. Kabakova, P. Fonjallaz, O. Tarasenko, M. De Sterke, W. Margulis; Sweden

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Y. Zaouter, F. Guichard, L. Daniault, M. Hanna, F. Morin, C. Hönninger, R. Braunschweig, E. Mottay, F. Druon, P. Georges; France

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C. zhu, I. Hu, X. Ma, A. Galvanauskas; United States

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V. Supradeepa, J. W. Nicholson; United States

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CTu1K.7 M. Steinke, D. Kracht, J. Neumann, P. Wessels; Germany

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L. Meng, J. M. Fini, J. W. Nicholson, R. Windeler, E. Monberg, B. J. Mangan, A. DeSantolo, F. DiMarcello; United States

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