

Juliet T. Gopinath

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EDUCATION	Massachusetts Institute of Technology Ph.D. in Electrical Engineering and Computer Science S.M. in Electrical Engineering and Computer Science	2005 2000
	University of Minnesota B.S. in Electrical Engineering	1998
EMPLOYMENT	University of Colorado Boulder Professor <i>Alfred T. and Betty E. Look Endowed Professor</i> Associate Professor Assistant Professor	2021- 2019 - 2017 - 2021 2009 - 2017
	MIT Lincoln Laboratory, Laser Technology and Applications Technical Staff Member	2005 - 2009
AWARDS AND HONORS	Optica (formerly OSA) Fellow University of Colorado Boulder Provost Achievement Award NSF CAREER Awardee R&D 100 Award : Wavelength Beam Combining Fiber-Coupled Diode Laser IEEE Senior Member National Science Foundation Graduate Fellowship	2021 2016 2016 2012 2011 1998 - 2001
PROFESSIONAL SERVICE	Service to Journals Associate Editor, Optica IEEE Publications Council IEEE Photonics Society Journal, Associate Editor	2020 - 2018 2011 - 2017
	Service to Funding Agencies Reviewer for grant agencies: NSF, AFOSR, ONR, NIH Reviewer for CINT, Center for Integrated Nanotechnologies Panelist for NSF and NIH	
	Leadership in the Academic Community Member-at-large, APS Division of Laser Science	2021 –

Photonics Society Rep., IEEE Nanotechnology Council	2020 –
Division of Laser Science/APS Nominating Committee	2019
OSA Charles Hard Townes Award Committee	2019 - 2021
Chair & committee member	

Conference Organization

Advanced Photonics Congress 2022, Subcomm. Member	2021 - 2022
Frontiers in Optics 2021, Subcommittee Member	2021
General Co-Chair for the Joint Symposium on Optics (OSA/OSK/OSJ)	2021
OSA/OSK/OSJ Symposium Committee	2019
CLEO 2014, 2015, 2016, 2019, 2020, 2021, 2022	
Subcommittee Member	2014-16/19 - 22
APS DLS Representative, Steering Committee	2021-ongoing
Ultrafast Optics, Program Committee	2017
Colorado Photonics Industry Association Annual Meeting, Program Chair	2014 - 2017
OECC/ACOFT 2014, Program Committee,	2013 - 2014
OSA Optical Sensors Topical Meeting, Program Comm.	2012

University Service

CUbit, Associate Director	2019
Quantum Interdisciplinary Research Theme, Director	2018 - 2019

OUTREACH

CU Boulder Women in ECEE, founder and faculty advisor	2011-
<i>Student group for women in electrical engineering</i>	
Science Discovery Summer Electromagnetics Course	2011-
<i>EM course for under-represented high school students</i>	
Chair, CU ECEE Diversity, Equity and Inclusion (DEI)	2020-
<i>Committee for DEI in ECEE department</i>	
MIT EECS Rising Stars Workshop, panelist	2021
<i>Two-day career workshop for diverse postdocs</i>	
APS Conf. for Undergrad. Women in Physics (CUWiP)	2017
<i>Workshop for undergraduate women in physics: panelist & speaker</i>	

PEER-REVIEWED PUBLICATIONS

h index = 28 [Google scholar profile \(hyperlinked\)](#)

1. G. Krueper, C. Yu, S. B. Libby, R. Mellors, L. Cohen, and **J. T. Gopinath**, “Realistic Model of Entanglement-Enhanced Sensing in Optical Fiber,” *Accepted for publication in Optics Express* (2022).
2. B. Heffernan, P. Riley, O. Supekar, S. Meyer, D. Restrepo, M. Siemens, E. A. Gibson, and **J. T. Gopinath**, “Two-photon fiber-coupled super-resolution microscope for biological imaging,” *Submitted to APL Photonics* (2021).
3. W. Y. Lim, M. Zohrabi, J. Zhu, T. Socco, T. Carmon, **J. T. Gopinath** and V. M. Bright, “Electrowetting-based tunable liquid whispering gallery mode microresonator,” *Submitted to Optics Express* (2022).

4. Y. L. Simmons, K. J. Underwood, O. D. Supekar, B. M. Heffernan, T. A. Welton, E. A. Gibson, and **J. T. Gopinath**, "Femtosecond diode-based time lens laser for multiphoton microscopy," *Biomed. Opt. Express* **12**, 6269-6276 (2021)
5. B. Xu, B. M. Heffernan, K. Bae, M. Siemens, **J. T. Gopinath** and W. Park, "Selective excitation of plasmon resonances with cylindrical vector beams," *Optics Express* **29**, 13071 (2021).
6. E. F. Strong, A. Q. Anderson, M. P. Brenner, B. M. Heffernan, N. Hoghooghi, **J. T. Gopinath** and G. B. Rieker, "Angular velocimetry for fluid flows: an optical sensor using structured light and machine learning," *Optics Express* **29**, 9960 (2021).
7. A. Q. Anderson, E. F. Strong, B. M. Heffernan, M. E. Siemens, G. B. Rieker and **J. T. Gopinath**, "Observation of the Rotational Doppler Shift in Spatially Incoherent Light," *Optics Express* **29**, 4058-4066 (2021).
8. J. Zhu, T. M. Horning, M. Zohrabi, W. Park and **J. T. Gopinath**, "Photo-induced writing and erasing of gratings in As₂S₃ chalcogenide microresonators," *Optica* **7**, 1645-1648 (2020).
9. D. Park, O. D. Supekar, A. R. Greenberg, **J. T. Gopinath** and V. M. Bright, "Real-time monitoring of calcium sulfate scale removal from RO desalination membranes using Raman spectroscopy," 497, 114736 (2021).
10. K. Bae, J. Zhu, C. Wolenski, A. Das, T. M. Horning, S. Pampel, M. Grayson, M. Zohrabi, **J. T. Gopinath** and Won, Park, "Indium Tin Oxide Nanoparticle-Coated Silica Microsphere with Large Optical Nonlinearity and High Quality Factor," *ACS Photonics*, <https://pubs.acs.org/doi/10.1021/acsp Photonics.0c01079> (2020).
11. E. L. Strong, A. Anderson, **J. T. Gopinath** and G. Rieker, "Centering a beam of light to the axis of rotation of a planar object", *Review of Scientific Instruments* **91**, 105101 (2020).
12. S. Pampel, K. Bae, M. Zohrabi, M. Grayson, T. M. Horning, W. Park and **J. T. Gopinath**, "Third-Harmonic Generation Enhancement in an ITO Nanoparticle-Coated Microresonator," **28**, 30004 *Optics Express* (2020).
13. K. J. Underwood, A. F. Briggs, S. D. Sifferman, V. B. Verma, N. Sirica, R. P. Prasankumar, S. -W. Nam, K. L. Silverman, S. R. Bank and **J. T. Gopinath**, "Strain dependence of Auger recombination in 3 mm GaInAsSb/GaSb type-I active regions," *Applied Physics Letters* **116**, 262103 (2020).
14. A. Q. Anderson, E. F. Strong, B. M. Heffernan, M. E. Siemens, G. B. Rieker, and **J. T. Gopinath**, "Detection Technique Effect on Rotational Doppler Measurements," *Optics Letters* **45**, 2636-2639 (2020).
15. M. Zohrabi, W. Y. Lim, V. M. Bright and **J. T. Gopinath**, "High extinction ratio, low insertion loss, optical switch based on an electrowetting prism," *Optics Express* **28**, 5991-6001 (2020).
16. W. Y. Lim, M. Zohrabi, **J. T. Gopinath**, and V. M. Bright, "Calibration and characteristics of an electrowetting laser scanner," *IEEE Sensors* **20**, 3496-3503 (2020).
17. O. D. Supekar, D. J. Park, A. R. Greenberg, **J. T. Gopinath**, and V. M. Bright, "Real-Time Detection of Early-Stage Calcium Sulfate and Calcium Carbonate Scaling Using Raman Spectroscopy," *Journal of Membrane Science* **596**, 117603 1-9 (2020).
18. M. Grayson, M. Zohrabi, K. Bae, J. Zhu, **J. T. Gopinath** and W. Park, "Enhancement of third-order nonlinearity of thermally evaporated GeSbSe waveguides through annealing," *Optics Express* **27**, 33606-33620 (2019).
19. J. Chiles, N. Nader, E. J. Stanton, D. Herman, G. Moody, J. Zhu, C. Skehan, B. Guha, A. Kowligy, **J. T. Gopinath**, K. Srinivasan, S. A. Diddams, I. Coddington, N. R. Newbury, J. M. Shainline, S. W. Nam, and R. Mirin, "Multi-functional integrated photonics in the mid-infrared with suspended AlGaAs on silicon," *Optica* **6**, 1246-1254 (2019).
20. B. M. Heffernan, S. A. Meyer, D. Restrepo, M. E. Siemens, E. A. Gibson and **J. T. Gopinath**, "A fiber-coupled stimulated emission depletion microscope for bend-insensitive through-fiber imaging," *Scientific Reports* **9**, 11137 (2019).
21. J. Zhu, M. Zohrabi, K. Bae, T. M. Horning, M. B. Grayson, W. Park, and **J. T. Gopinath**, "Nonlinear characterization of silica and chalcogenide microresonators," *Optica* **6**, 716-

- 722 (2019).
22. M. Zohrabi, W. Y. Lim, R. H. Cormack, O. D. Supekar, V. M. Bright, and **J. T. Gopinath**, "Lidar system with nonmechanical electrowetting-based wide-angle beam steering," *Optics Express* **27**, 4404-4415 (2019).
 23. J. M. Anderson, S. N. Alperin, A. A. Voitiv, W. G. Holtzmann, **J. T. Gopinath** and M. E. Siemens, "Characterizing vortex beams from a spatial light modulator with collinear phase shifting holography," *Applied Optics* **58**, 404-409 (2019).
 24. W. Y. Lim, O. D. Supekar, M. Zohrabi, **J. T. Gopinath** and V. M. Bright, "Liquid combination with high refractive index contrast and fast scanning speeds for electrowetting adaptive optics," *Langmuir* **34** DOI: 10.1021/acs.langmuir.8b02849, 14511-14518 (2018).
 25. O. D. Supekar, J. Brown, A. R. Greenberg, **J. T. Gopinath** and V. M. Bright, "Real-time detection of reverse-osmosis membrane scaling via Raman spectroscopy," *Industrial and Engineering Chemistry Research*, DOI: 10.1021/acs.iecr.8b01272 (2018)
 26. B. N. Ozbay, G. L. Futia, M. Ma, V. M. Bright, **J. T. Gopinath**, E. G. Hughes, D. Restrepo, and E. A. Gibson, "Three dimensional two-photon imaging of neural activity in freely moving mice using a miniature fiber coupled microscope with dynamic focusing," *Scientific Reports* **8**, 8108, DOI: 10.1038/s41598-018-26326-3 (2018).
 27. O. D. Supekar, B. N. Ozbay, M. Zohrabi, P. D. Nystrom, G. L. Futia, D. Restrepo, E. A. Gibson, **J. T. Gopinath**, and V. M. Bright, "Two-photon laser scanning microscopy with electrowetting-based prism scanning," *Biomedical Optics Express* **8**, 5412-5426, (2017).
 28. M. Zohrabi, R. H. Cormack, C. McCullough, O. D. Supekar, E. A. Gibson, V. M. Bright and J. T. Gopinath, "Wavefront aberration correction using multielectrode electrowetting-based devices," *Optics Express* **25** 31451-31461 (2017).
 29. B. M. Heffernan, R. D. Niederriter, M. E. Siemens, and **J. T. Gopinath**, "Tunable higher-order angular momentum using polarization maintaining fiber," *Optics Letters* **42**, 2683-2686 (2017).
 30. G. Kang, M. R. Krogstad, M. Grayson, D.-G. Kim, H. Lee, **J. T. Gopinath** and W. Park, "High quality chalcogenide-silica hybrid wedge resonator," *Optics Express* **25**, 15581-15589 (2017).
 31. O. D. Supekar, M. Zohrabi, **J. T. Gopinath**, and V. M. Bright, "Enhanced response time of electrowetting lenses with shaped input voltage functions," *Langmuir* **33**, 4863-4869 (2017).
 32. R. D. Niederriter, B. N. Ozbay, G. L. Futia, E. A. Gibson, and **J. T. Gopinath**, "Compact diode-laser-based pulse source for multiphoton biological imaging," *Biomedical Optics Express* **8**, 315-322 (2016).
 33. R. D. Niederriter, M. E. Siemens, and **Juliet T. Gopinath**, "Simultaneous control of orbital angular momentum and beam profile in two-mode polarization-maintaining fiber," *Optics Letters* **41**, 5736-5738 (2016).
 34. K. Underwood and **J. T. Gopinath**, "Control of the state of a mode-locked fiber laser using an intracavity Martinez compressor," *Optics Letters* **41**, 5393-5396 (2016).
 35. M. R. Krogstad, S. Ahn, W. Park, and **J. T. Gopinath**, "Optical characterization of chalcogenide Ge-Sb-Se waveguides at telecom wavelengths," *Photonics Technology Letters* **28**, 2720 (2016).
 36. S. N. Alperin, R. D. Niederriter, **J. T. Gopinath** and M. E. Siemens, "Quantitative measurement of the orbital angular momentum of light with a single, stationary lens," *Optics Letters* **41**, 5019 (2016).
 37. M. Zohrabi, R. H. Cormack and **J. T. Gopinath**, "Wide-angle non-mechanical beam steering using liquid lenses," *Optics Express* **24**, 23798 (2016).
 38. R. D. Niederriter, M. E. Siemens, and **J. T. Gopinath**, "Continuously tunable orbital angular momentum generation in polarization maintaining fiber," *Optics Letters* **41**, 3213 (2016).
 39. R. D. Montoya, K. Underwood, S. Terrab, A. M. Watson, V. M. Bright, and **J. T. Gopinath**, "Large extinction ratio optical electrowetting shutter," *Optics Express* **24**, 9660-9666 (2016).

40. S. Terrab, A. M. Watson, C. Roath, **J. T. Gopinath** and V. M. Bright, "Adaptive electrowetting lens-prism element," *Optics Express* **23** 25838 -25845(2015).
41. A. M. Watson, K. Dease, S. Terrab, C. Roath, **J. T. Gopinath**, and V. M. Bright, "Focus-tunable low power electrowetting lenses with thin parylene films," *Applied Optics* **54**, 6224- 6229 (2015).
42. K. J. Underwood, A. M. Jones, and **J. T. Gopinath**, "Optical pulse generation by Fourier synthesis of three cw semiconductor lasers using an FPGA-based gradient descent phase-locking algorithm," *Applied Optics* **54**, 5624 (2015).
43. B. N. Ozbay, J. T. Losacco, R. Cormack, R. Weir, V. M. Bright, **J. T. Gopinath**, D. Restrepo, and E. A. Gibson, "Miniaturized fiber-coupled confocal microscope with a continuously moving focus using no moving parts," *Opt. Lett.* **40**, 2553-2556 (2015). *Also appears in Virtual Journal for Biomedical Optics* (2015).
44. M. R. Krogstad, S. Ahn, W. Park, and **J. T. Gopinath**, "Nonlinear characterization of Ge₂₈Sb₁₂Se₆₀ bulk and waveguide devices," *Opt. Exp.* **23**, 7877(2015).
45. A. M. Jones and **J. T. Gopinath**, "Fast-to-slow axis mode imaging for brightness enhancement of a broad-area laser diode array," *Opt. Exp.* **21**, 17912-17919(2013).
46. R. D. Niederriter, A. M. Watson, R. N. Zahreddine, C. J. Cogswell, R. H. Cormack, V. M. Bright, and **J. T. Gopinath**, "Electrowetting lenses for compensating phase and curvature distortion in arrayed laser systems," *Appl. Opt.* **52**, 3172 (2013).
47. R. D. Niederriter, **J. T. Gopinath** and M. E. Siemens, "Measurement of the M2 beam propagation factor using a focus-tunable liquid lens," *Applied Optics* **52**, 1591-1598(2013).
48. **J. T. Gopinath**, V. M. Bright, C. C. Cogswell, R. D. Niederriter, A. Watson, R. Zahreddine, and R. H. Cormack, "Simulation of electrowetting lens and prism arrays for wavefront compensation," *Appl. Opt.* **51**, 6618 (2012).
49. P. W. Juodawlakis, J. J. Plant, W. Loh, L. Missaggia, F. O'Donnell, D. C. Oakley, A. Napoleone, J. Klamkin, **J. T. Gopinath**, D. J. Ripin, S. Gee, P. J. Delfyett, and J. P. Donnelly, "High-Power, Low-Noise 1.5- μ m Slab-Coupled Optical Waveguide (SCOW) Emitters: Physics, Devices, and Applications," *IEEE J. of Sel. Top. in Quant. Electron.* **17**, 1698-1714 (2011).
50. K-H Hong, **J. T. Gopinath**, D. Rand, A. M. Siddiqui, S-W Huang, E Li, B. J. Eggleton, J. D. Hybl, T. Y. Fan, and F. X. Kaertner, "High-energy, kHz-repetition-rate, ps cryogenic Yb:YAG chirped-pulse amplifier," *Optics Letters* **35**, 1752-1754 (2010).
51. K-H Hong, A. Siddiqui, J. Moses, **J. T. Gopinath**, J. Hybl, F. O. Ilday, T. Y. Fan, and F. X. Kaertner, "Generation of 287-W, 5.5-ps pulses at 78-MHz repetition rate from a cryogenically-cooled Yb:YAG amplifier seeded by a fiber chirped-pulse amplification system," *Optics Letters* **33**, 2473-2475 (2008).
52. **J. T. Gopinath**, B. Chann, T.Y. Fan, and Antonio Sanchez, "1450-nm high-brightness wavelength-beam combined diode arrays and stacks," *Optics Express* **16**, 9405-9410 (2008).
53. **J. T. Gopinath**, B. Chann, R. K. Huang, C. Harris, J. J. Plant, L. Missaggia, J. P. Donnelly, P. W. Juodawlakis, and D. J. Ripin, "980-nm monolithic passively modelocked diode lasers with 62 pJ of pulse energy," *IEEE Photonics Technology Letters* **19**, 937-939 (2007).
54. J. J. Plant, **J. T. Gopinath**, B. Chann, D. J. Ripin, R. K. Huang, and P. W. Juodawlakis, "250 mW, 1.5 μ m monolithic passively mode-locked slab-coupled optical waveguide laser," *Optics Letters* **31**, 223-225 (2006).
55. **J. T. Gopinath**, H. M. Shen, H. Sotobayashi, E. P. Ippen, T. Hasegawa, T. Nagashima, and N. Sugimoto, "Highly nonlinear bismuth-oxide fiber for supercontinuum generation and femtosecond pulse compression," *Journal of Lightwave Technology* **23**, 3591-3596 (2005).
56. F. J. Grawert, S. Akiyama, **J. T. Gopinath**, F. O. Ilday, H. M. Shen, J. Liu, K. Wada, L. C. Kimerling, E. P. Ippen, and F. X. Kaertner, "220 fs Er-Yb:glass laser mode-locked by a broadband low-loss Si/Ge saturable absorber," *Optics Letters* **30**, 329-331 (2005).
57. P. T. Rakich, H. Sotobayashi, **J. T. Gopinath**, S. G. Johnson, J. W. Sickler, C. W. Wong, J.

- D. Joannopoulos, and E. P. Ippen, "Nano-scale photonic crystal microcavity characterization with an all-fiber-based 1.2 – 2.0 μm supercontinuum," *Optics Express* **13**, 821-825 (2005).
58. F. J. Grawert, F. O. Ilday, D. Kielpinski, J. T. Gopinath, L. A. Kolodziejski, G. S. Petrich, E. P. Ippen, and F. X. Kaertner, "Automatic feedback control of an Er-doped fiber laser with an intracavity loss modulator," *Optics Letters* **30**, 1066-1068 (2005).
59. **J. T. Gopinath**, M. Soljačić, E. P. Ippen, V. N. Fuflyigin, W. A. King, and M. Shurgalin, "Third-order nonlinearities in Ge-As-Se-based glasses for telecommunications applications," *Journal of Applied Physics* **96**, 6931-6933 (2004). *Also appeared as an Invited Paper in Virtual Journal of Ultrafast Science December 2004.*
60. **J. T. Gopinath**, H. M. Shen, H. Sotobayashi, E. P. Ippen, T. Hasegawa, T. Nagashima, and N. Sugimoto, "Highly nonlinear bismuth-oxide fiber for smooth supercontinuum generation at 1.5- μm ," *Optics Express* **12**, 5697-5702 (2004).
61. S. N. Tandon, **J. T. Gopinath**, A. A. Erchak, G. S. Petrich, L. A. Kolodziejski, and E. P. Ippen. "Large area oxidation of AlAs layers for dielectric stacks and thick buried oxides," *Journal of Electronic Materials* **33**, 774-779 (2004).
62. H. Sotobayashi, **J. T. Gopinath**, E. M. Koontz, L. A. Kolodziejski, and E. P. Ippen, "Wavelength tunable, passively mode-locked Bismuth Oxide-based Erbium-doped fiber laser," *Optics Communications* **237 no. 4-6**, 399-403 (2004).
63. R. P. Prasankumar, I. Hartl, **J. T. Gopinath**, E. P. Ippen, J. G. Fujimoto, P. Mak and M. F. Ruane, "Design and characterization of semiconductor-doped silica film saturable absorbers," *Journal of the Optical Society of America B (Optical Physics)* **21**, 851-857 (2004).
64. H. Sotobayashi, **J. T. Gopinath**, Y. Takushima, K. Hsu, and E. P. Ippen, "Broadband wavelength tunable, single frequency, and single polarization Bismuth Oxide-based Erbium-doped fiber laser." *IEEE Photonics Technology Letters* **16**, 1628-1630 (2004).
65. S.N. Tandon, **J. T. Gopinath**, H. M. Shen, G. S. Petrich, L. A. Kolodziejski, F. X. Kärtner, and E. P. Ippen, "Large area broadband saturable bragg reflectors using oxidized AlAs," *Optics Letters* **29**, 2551-2553 (2004).
66. T. R. Schibli, J. Kim, O. Kuzucu, **J. T. Gopinath**, S. N. Tandon, G. S. Petrich, L. A. Kolodziejski, J. G. Fujimoto, E. P. Ippen, and F. X. Kaertner, "Attosecond active synchronization of passively mode-locked lasers using balanced cross-correlation," *Optics Letters* **28**, 947-949 (2003).
67. H. Sotobayashi, **J. T. Gopinath**, and E. P. Ippen, "23 cm long Bi₂O₃-based EDFA for picosecond pulse amplification with 80 nm gain bandwidth," *Electronics Letters* **39**, 1374-1375 (2003).
68. **J. T. Gopinath**, H. Sotobayashi, and E. P. Ippen, "Broadband amplification of picosecond pulses in a 23 cm length of Bi₂O₃-based Erbium-doped fiber," *OSA TOPS* **92** (Optical Amplifiers and Their Applications), 50-53 (2003).
69. D. J. Ripin, **J. T. Gopinath**, H. M. Shen, G. S. Petrich, L. A. Kolodziejski, F. X. Kaertner, and E. P. Ippen, "Oxidized GaAs/AlAs mirror with a quantum-well saturable absorber for ultrashort-pulse Cr⁴⁺:YAG laser," *Optics Communications* **214**, 285-289 (2002).
70. K. S. Abedin, **J. T. Gopinath**, L. A. Jiang, M. E. Grein, H. A. Haus, and E. P. Ippen, "Self-stabilized passive, harmonically mode-locked stretched pulse Erbium fiber ring laser," *Optics Letters* **27**, 1758-1760 (2002).
71. K. S. Abedin, **J. T. Gopinath**, E. P. Ippen, C.E. Kerbage, R. S. Windeler, and B. J. Eggleton, "Highly nondegenerate femtosecond four-wave mixing in tapered microstructure fiber," *Applied Physics Letters* **81**, 1384-1387 (2002).
72. D. J. Ripin, C. Chudoba, **J. T. Gopinath**, J. G. Fujimoto, E. P. Ippen, U. Morgner, F. X. Kartner, V. Scheuer, G. Angelow, and T. Tschudi, "Generation of 20-fs pulses by a prismless Cr⁴⁺:YAG laser," *Optics Letters* **27**, 61-63 (2002).
73. **J. T. Gopinath**, E. R. Thoen, E. M. Koontz, M. E. Grein, L. A. Kolodziejski, E. P. Ippen, and

J. P. Donnelly, "Recovery dynamics in proton-bombarded semiconductor saturable absorber mirrors," *Applied Physics Letters* **78**, 3409-3411 (2001).

CONFERENCE PRESENTATIONS

1. E. F. Strong, A. Q. Anderson, B. M. Heffernan, M. P. Brenner, N. Hoghooghi, **J. T. Gopinath** and G. B. Rieker, "Sensing angular velocity with optical orbital angular momentum and machine learning," *Presented at OSA Imaging and Applied Optics Congress* (2021).
2. S. A. Meyer, M. E. Siemens, **J. T. Gopinath**, D. Restrepo, and E. A. Gibson, "OpenSTED: Inexpensive and open-source implementation of Dynamic Intensity Minimum (DyMIN) for Stimulated Emission Depletion (STED) microscopy," *Presented at the OSA Biophotonics Congress* (2021).
3. G. R. Krueper, R. Mellors, C. Yu, S. B. Libby, M. Messerly, and **J. T. Gopinath**, "Entangled-enhanced interferometry in optical fiber," *Presented at the Conference on Lasers and Electro-Optics* (2021).
4. B. M. Heffernan, P. Riley, O. D. Supekar, S. A. Meyer, N. M. George, D. Restrepo, M. E. Siemens, E. A. Gibson, and **J. T. Gopinath**, "Two-photon fiber STED microscopy using polarization maintaining fiber," *Presented at the Conference on Lasers and Electro-Optics* (2021).
5. A. Q. Anderson, E. F. Strong, B. M. Heffernan, M. E. Siemens, G. B. Rieker, and **J. T. Gopinath**, "Rotation measurement using spatially incoherent light and the rotational Doppler shift," *Presented at the Conference on Lasers and Electro-Optics* (2021).
6. B. M. Heffernan, B. Xu, K. Bae, M. E. Siemens, W. Park and **J. T. Gopinath**, "Tailoring the multipole content at tight focus using cylindrical vector beams with orbital angular momentum," *Presented at the Conference on Lasers and Electro-Optics* (2021).
7. B. Xu, B. M. Heffernan, K. Bae, M. Siemens, **J. T. Gopinath** and W. Park, "Group theory guided symmetry coupling between cylindrical vector beams and localized surface plasmon resonances," *Presented at the Conference on Lasers and Electro-Optics* (2021).
8. W. Y. Lim, M. Zohrabi, J. Zhu, **J. T. Gopinath** and V. M. Bright, "Electrowetting-based tunable liquid droplet microresonator," *Presented at the IEEE MEMS Conference* (2021).
9. D. Park, O. Supekar, A. Greenberg, **J. T. Gopinath** and V. M. Bright, "Novel Sensors for Real-time Detection of Membrane Fouling in RO Desalination Systems," *Presented at the AGU Fall Meeting* (2020).
10. **J. T. Gopinath**, "Nonlinear chalcogenide photonic devices," *Invited presentation at the IEEE Photonics Society Conference* (2020).
11. S. Pampel, T. M. Horning, K. Bae, M. Zohrabi, M. Grayson, W. Park and **J. T. Gopinath**, "Enhanced Nonlinearity in a Functionalized Whispering Gallery Mode Microcavity," *Presented at the Frontiers in Optics Conference* (2020).
12. **J. T. Gopinath**, "Fiber-Coupled Stimulated Emission Depletion Microscopy (STED)," *Invited presentation at OSA Imaging and Sensing Congress* (2020).
13. A. F. Briggs, S. D. Sifferman, K. J. Underwood, L. J. Nordin, **J. T. Gopinath** and S. R. Bank, "Auger Recombination in Strained GaInAsSb Quantum Well Membranes," *Presented at EMC* (2020).
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16. E. F. Strong, A. Q. Anderson, B. M. Heffernan, M. P. Brenner, **J. T. Gopinath**, and G. B.

- Rieker, “An angular velocity sensor using machine learning and optical orbital angular momentum” *Presented at Conference on Lasers and Electro-Optics* (2020).
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 18. K. J. Underwood, A. F. Briggs, S. D. Sifferman, V. Verma, N. Sirica, R. Prasankumar, S. W. Nam, K. L. Silverman, S. Bank, and **J. T. Gopinath**, “Auger Recombination in Strained Mid-Infrared Quantum Wells,” *Presented at Conference on Lasers and Electro-Optics* (2020).
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 20. M. Grayson, M. Zohrabi, K. Bae, J. Zhu, **J. T. Gopinath**, and W. Park, “Enhancement of third-order nonlinearity of thermally evaporated GeSbSe waveguides through annealing,” *Presented at SPIE Photonics West, Proceedings Volume 11283, Integrated Optics: Devices, Materials, and Technologies XXIV; 1128319* (2020)
 21. J. Zhu, K. Bae, M. Zohrabi, T. M. Horning, M. B. Grayson, W. Park, and **J. T. Gopinath**, “In situ, nonlinear characterization of microresonators,” *Presented at the Conference on Nonlinear Optics, Postdeadline* (2019).
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 23. J. Zhu, M. Zohrabi, T. M. Horning, W. Park, and **J. T. Gopinath**, “Photosensitive Writing and Erasing of Gratings in an As₂S₃ Chalcogenide Microresonator,” *Presented at the Conference on Nonlinear Optics* (2019).
 24. **J. T. Gopinath**, M. Zohrabi, O. D. Supekar, W. Y. Lim, B. N. Ozbay, G. L. Futia, D. Restrepo, E. A. Gibson, and V. M. Bright, “Electrowetting adaptive optical devices for LIDAR,” *Invited presentation, Applied Industrial Optics* (2019).
 25. A. F. Briggs, S. D. Sifferman, K. J. Underwood, L. J. Nordin, **J. T. Gopinath** and S. R. Bank, “Externally applied strain on GaSb-based GaInAsSb quantum well membranes,” *Presented at EMC* (2019).
 26. **J. T. Gopinath**, B. M. Heffernan, S. A. Meyer, D. Restrepo, M. E. Siemens, and E. A. Gibson, “Imaging of HeLa cells with fiber stimulated emission depletion microscopy (STED),” *Presented at the International Conference on Orbital Angular Momentum (ICOAM)* (2019).
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 31. B. M. Heffernan, S. A. Meyer, M. E. Siemens, D. Restrepo, E. A. Gibson, and **J. T. Gopinath**, “Stimulated emission depletion microscopy with polarization-maintaining

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 33. S. Alperin, B. Heffernan, R. D. Niederriter, M. E. Siemens, and **J. T. Gopinath**, "Generation and detection of tunable orbital angular momentum in optical fiber," Presented at *ICOAM (International Conference on Orbital Angular Momentum)*, Capri, Italy (2017).
 34. **J. T. Gopinath**, "Nonlinear chalcogenide materials and devices," *Invited presentation at Progress in Electromagnetic Research Symposium (PIERS)* (2017).
 35. M. Zohrabi, R. H. Cormack, and **J. T. Gopinath**, "Nonmechanical beam steering using tunable lenses," *Presented at Conference on Lasers and Electro-Optics*, SW4L.2 (2017).
 36. O. D. Supekar, M. Zohrabi, J. J. Brown, **J. T. Gopinath** and V. M. Bright, "Enhancing the response time of electrowetting lenses using voltage shaping," *Presented at Conference on Lasers and Electro-Optics*, SM4C.7 (2017).
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 43. K. Underwood and **J. T. Gopinath**, "Intracavity Martinez Compressor for Simultaneous Dispersion Compensation and Tunable Spectral Filtering," *Conference on Lasers and Electro- Optics (CLEO)*, STu3.P.2 (2016).
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ISSUED PATENTS

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INVITED PRESENTATIONS

MNIT Jaipur, IEEE Photonics Society Student Chapter
and SPIE Student Chapter, Webinar (2021)

University of Southern California, Photonics Seminar (2021)

Ball Aerospace, Seminar (2020)

NIST Applied Physics Division Seminar, Boulder (Fall 2019)

DMMI Workshop on Domestic Manufacturing Capabilities for Critical DoD
Applications: Emerging Needs in Quantum Enabled Systems, Invited Panelist
(Spring 2019)

Enabling Quantum Materials Workshop, Louisiana State University,
Invited Speaker (Spring 2019)

Kansas State University, OSA Traveling Lecturer (Spring 2019)

University of Denver, Physics Colloquium (Spring 2019)

University of Texas at Austin (Fall 2018)

Donostia International Physics Center, Seminar (Spring 2018)

University of Colorado Boulder, Physics Colloquium (Fall 2017)

Miami University, Physics Colloquium (Spring 2017)

University of Minnesota, Electrical Engineering Colloquium (Fall 2016)

Harvard University, CEAS Seminar (2016)

IEEE Boston Photonics Society, Seminar (2016)

Ball Aerospace, Research Seminar (2015)
NIST Boulder, Research Seminar (2015)
Cornell University, Electrical Engineering Seminar (2015)
University of California San Diego, Electrical Engineering Seminar (2015)
University of Colorado-Boulder, IONS Conference Seminar, Boulder CO (2015)
University of Colorado-Boulder, Research Seminar Series on Optical, Electronic and Quantum Systems (2014)
Colorado School of Mines, Research Seminar (2013)
University of Colorado-Boulder, Physics Department Condensed Matter Seminar (2010)
China Lake Naval Air Warfare Center, Seminar Speaker (2010)
University of Colorado-Boulder, Electrical and Computer Engineering Department Seminar (2008) and (2014)
Colorado State University, Electrical and Computer Engineering Department Seminar (2007)