

LAN YANG

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EDUCATION

Ph.D. in Applied Physics, May 2005, Caltech
M.S. in Materials Science, June 2000, Caltech
M.S. in Solid State Physics, June 1999, University of Science and Technology of China
B.S. in Materials Physics, June 1997, University of Science and Technology of China

EMPLOYMENT

Co-Founder, Board Member and Chief Technology Officer Nov 2019-present
<https://deepsight.com/>
DeepSight Technology, Inc. The mission of the company is to develop disruptive technologies including innovation in hardware, software and AI technologies for high-performance non-invasive medical imaging to benefit public health and well-being.

Editor-in-chief Jan. 2019-present
<https://opg.optica.org/prj/home.cfm>
Photonics research (ranked 12th out of 101 journals according to Optics category rankings in the Journal Citation Reports (Source Clarivate, 2021); Google Scholar Optics & Photonics Top Publications.)

Edwin H. and Florence G. Skinner Professor Jan 2015--present
The Preston M. Green Department of Electrical and Systems Engineering
Washington University in St. Louis

Professor June 2016--present
Physics Department (courtesy appointment)
Washington University in St. Louis

Professor Dec 2014--present
Institute of Materials Science and Engineering
Washington University in St. Louis

Professor Dec 2014--present
The Preston M. Green Department of Electrical and Systems Engineering
Washington University in St. Louis

Associate Professor July 2012-Nov 2014
The Preston M. Green Department of Electrical and Systems Engineering
Washington University in St. Louis

Assistant Professor Jan 2007 – June 2012
The Preston M. Green Department of Electrical and Systems Engineering
Washington University in St. Louis

Research Associate
Department of Applied Physics, Caltech

May 2006 – Dec 2006

Post-doctoral Scholar
Department of Applied Physics, Caltech

May 2005 – May 2006

AWARDS AND HONOR

- **Highly Cited Researchers™, Clarivate™**, 2019, 2020, 2021, 2022
- **Fellow of the American Association for the Advancement of Science**, 2020.
- **Fellow of the American Physical Society**, 2020.
- **Fellow of the Institute of Electrical and Electronics Engineers**, 2020.
- **Friedrich Wilhelm Bessel Research Award**, Alexander von Humboldt Foundation, 2019.
- **Fellow of the Optical Society of America**, 2017.
- **Chancellor's Award for Innovation and Entrepreneurship**, Washington University in St. Louis, 2015
- **Presidential Early Career Award for Scientists and Engineers (PECASE)**, A single-nanoparticle transducer and its applications, DOD, 2010. (Final citation/recognition determined by DOD and the Office of Science and Technology Policy (an office in the Executive Office of the President): *"for innovative research in microlasers on a silicon wafer and development of photonic devices with applications from optical communications to ultra-sensitive biochemical sensing; and for pioneering studies of real-time, in-situ detection and sizing of nanoparticles using low-power on-chip devices."*)
- **NSF CAREER Award**, National Science Foundation, 2010.
- **Caltech Doctoral Award**, 1999

NEWS AND MEDIA COVERAGE

- "Changing the World Through Science: Lan Yang" by Kathleen Berger, Peter Foggy, HEC Media, Health/Science – Program Feature Segment, **Mid-America Emmy Award**, 2020. (<https://emmymid-america.org/awards/2020-winners/>) (<https://hecmedia.org/posts/changing-the-world-through-science-lan-yang-is-an-inspiration-for-women-at-washington-university>)
- "St. Louis Character: Lan Yang pushes science and technology forward through innovation" by Shawn Donnelly, St. Louis Business Journal, March 6, 2019. (<https://www.bizjournals.com/stlouis/news/2019/03/06/st-louis-character-lan-yang-pushes-science-and.html>)
- "The Discoverer: Lan Yang," WashU Fuse: Innovation and Entrepreneurship, Nov. 2018. (<https://fuse.wustl.edu/the-discoverer-lan-yang/>)

FIELD OF STUDY

Nanophotonics, Integrated photonics, High-quality microresonators, Parity-time symmetric photonics, Non-Hermitian photonics, Lasers, Sensing and imaging, Spectroscopy.

SELECTED PUBLICATIONS

5 book chapters, ~130 peer-reviewed journal papers

Citation Metric: Google scholar: 20,687 citations, h-index = 62

Significant publications:

- J1 Photonic van der Waals integration from 2D materials to 3D nanomembranes, Y. Meng, J. Feng, S. Han, Z. Xu, W. Mao, T. Zhang, J. S Kim, I. Roh, Y. Zhao, D.-H. Kim, Y. Yang, J.-W. Lee, L. Yang, C.-W. Qiu, S.-H. Bae, *Nature Reviews Materials*, 1-20 (2023)
- J2 Fully integrated parity–time-symmetric electronics, W Cao, C Wang, W Chen, S Hu, H Wang, L Yang, X Zhang, *Nature Nanotechnology*, 1-7 (2022).
- J3 “Optomechanical dissipative solitons,” J. Zhang, B. Peng, S. Kim, F. Monifi, X. Jiang, Y. Li, P. Yu, L. Liu, Y. Liu, A. Alù, L. Yang, *Nature* 600 (7887), 75-80 (2021).
- J4 “Coherent perfect absorption at an exceptional point,” C Wang, WR Sweeney, AD Stone, L. Yang, *Science* 373 (6560), 1261-1265 (2021)
- J5 “Optical whispering gallery mode barcodes for high-precision and wide-range temperature measurements,” J. Liao, and L. Yang, *Light: Science & Applications*, 10 (1), 1-11 (2021)
- J6 “Induced transparency by interference or polarization,” C. Wang, X. Jiang, W. R. Sweeney, C. W. Hsu, Y. Liu, G. Zhao, B. Peng, M. Zhang, L. Jiang, A. D. Stone, and L. Yang, *Proceedings of the National Academy of Sciences (PNAS)*, 118 (3) e2012982118 (2021)
- J7 “Angle-based wavefront sensing enabled by the near fields of flat optics,” S Yi, J Xiang, Zhou, Z Wu, L Yang, Z Yu, *Nature communications* 12 (1), 1-8 (2021)
- J8 “Nonreciprocal Transmission of Microwave Acoustic Waves using Nonlinear Parity-Time Symmetric Resonators,” L. Shao, W. Mao, S. Maity, N. Sinclair, Y. Hu, L. Yang, and M. Lončar, *Nature Electronics*, 3, 267–272 (2020)
- J9 “Electromagnetically induced transparency at a chiral exceptional point,” C. Wang, X. Jiang, G. Zhao, M. Zhang, C. Hsu, B. Peng, A D. Stone, L. Jiang, and L. Yang, *Nature Physics*, 16, 334–340 (2020)
- J10 “Symmetry-breaking-induced nonlinear optics at a microcavity surface,” X Zhang, QT Cao, Z Wang, Y Liu, CW Qiu, L Yang, Q Gong, YF Xiao, *Nature Photonics*, 13, 21-24 (2019).
- J11 “Parity–time symmetry and exceptional points in photonics,” ŞK Özdemir, S Rotter, F Nori, L Yang, *Nature materials* 18 (8), 783-798 (2019)
- J12 “Wireless whispering-gallery-mode sensor for thermal sensing and aerial mapping,” X. Xu, W. Chen, G. Zhao, Y. Li, C. Lu and L. Yang, *Light: Science & Applications*, 7, Article number 62 (2018)
- J13 “A phonon laser operating at an exceptional point,” J. Zhang, B. Peng, Ş. K. Özdemir, K. Pichler, D. O. Krimer, G. Zhao, F. Nori, Y. Liu, S. Rotter, and L. Yang, *Nature Photonics*, 12, 479-484 (2018).
- J14 “Chaos-assisted broadband momentum transformation in optical microresonators,” X. Jiang, L. Shao, S. X. Zhang, X. Yi, J. Wiersig, L. Wang, Q. Gong, M. Lončar, L. Yang, and Y.-F. Xiao, *Science*, 358, 344-347 (2017)
- J15 “Exceptional points enhanced sensing in an optical microcavity,” W. Chen, Ş. K. Özdemir, G. Zhao, J. Wiersig, and L. Yang, *Nature*, 548, 192-196 (2017).

- J16 "Optomechanically-induced stochastic resonance and chaos transfer between optical fields," F. Monifi, J. Zhang, S. K. Ozdemir, B. Peng, Y.X. Liu, F. Bo, F. Nori, and **L. Yang**, *Nature Photonics*, 10, 399–405 (2016).
- J17 "Anomalous time delays and quantum weak measurements in optical micro-resonators," M Asano, KY Bliokh, YP Bliokh, AG Kofman, R Ikuta, T Yamamoto, YS Kivshar, **L Yang**, N Imoto, ŞK Özdemir, F Nori, *Nature communications* 7, 13488 (2016)
- J18 "Chiral modes and directional lasing at exceptional points," B. Peng, S. K. Özdemir, M. Liertzer, W. Chen, J. Kramer, H. Yilmaz, J. Wiersig, S. Rotter, and **L. Yang**, *Proceedings of the National Academy of Sciences (PNAS)*, Vol. 113 no. 25, 6845–6850 (2016).
- J19 "Loss induced suppression and revival of lasing," B. Peng, Ş. K. Özdemir, S. Rotter, H. Yilmaz, M. Liertzer, F. Monifi, C. M. Bender, F. Nori, and **L. Yang**, *Science*. Vol. 346, Issue 6207, 328-332. (2014)
- J20 "What is – and What is not-Electromagnetically-induced-Transparency in Whispering-Gallery-Microcavities," B. Peng, SK. Ozdemir, W. Chen, F. Nori and **L. Yang**, *Nature Communication*, 5, Article No: 5082 (2014)
- J21 "Highly sensitive detection of nanoparticles with a self-referenced and self-heterodyned whispering –gallery Raman microlaser," SK Ozdemir, J. Zhu, X. Yang, B. Peng, H. Yilmaz, L He, F. Monifi, GL. Long, and **L. Yang**, *Proceeding of the National Academy of Science (PNAS)*, vol. 111 no. 37, E3836–E3844 (2014)
- J22 "Parity-time-symmetric microcavities," B. Peng, S. K. Ozdemir, F. Lei, F. Monifi, M. Gianfreda, G. L. Long, S. Fan, F. Nori, C. M. Bender, and **L. Yang**, *Nature Physics*, 10, 394–398 (2014).
- J23 "Detecting single viruses and nanoparticles using an on-chip whispering gallery microlaser", L. He, S.K. Ozdemir, J. Zhu, and **L. Yang**, *Nature Nanotechnology*, Vol. 6, 428-432 (2011)
- J24 "On-chip Single Nanoparticle Detection and Sizing by Mode-splitting in an Ultra-high-Q Microresonator", J. Zhu, S.K. Ozdemir, Y.F.Xiao, L. Li, L. He, D.R. Chen and **L. Yang**, *Nature Photonics*, Vol. 4, p46-49 (2010)
- J25 "High-Q plasmon-polariton whispering-gallery microcavity", B. Min, E. Ostby, V. Sorger, E. Ulin-Avila, **L. Yang**, X. Zhang, and K. J. Vahala, *Nature*, Vol. 457, 455-458 (2009)

Peer-reviewed Journal Papers

Review articles:

- J26 "Whispering-Gallery Sensors," X Jiang, AJ Qavi, SH Huang, **L Yang**, *Matter* 3 (2), 371-392 (2020) *Invited*
- J27 Optothermal dynamics in whispering-gallery microresonators, X Jiang, **L Yang**, *Light: Science & Applications* 9 (1), 1-15 (2020)
- J28 "Nonreciprocity in synthetic photonic materials with nonlinearity," W Chen, D Leykam, YD Chong, **L Yang**, *MRS Bulletin* 43 (6), 443-451 (2018) *Invited*
- J29 "Whispering gallery microcavity lasers", L. He, S. Ozedemir, and **L. Yang**, *Lasers & Photonics Reviews*, Vol. 7, No. 1, 60-82 (2013) *Invited*
- J30 "Label-free detection with high-Q microcavities: a review of Biosensing mechanisms for integrated devices," F. Vollmer and **L. Yang**, *Nanophotonics*, Vol. 1, 267-291 (2012) *Invited*

Papers published in peer-reviewed journals:

- J31 "Rapid detection of an Ebola biomarker with optical microring resonators," Abraham J Qavi, Krista Meserve, M Javad Aman, Hong Vu, Larry Zeitlin, John M Dye, Jeffrey W

- Froude, Daisy W Leung, **L. Yang**, Frederick W Holtsberg, Ryan C Bailey, Gaya K Amarasinghe, *Cell Reports Methods*, Vol. 2, Iss. 6, 100234 (2022)
- J32 "High-Q WGM Resonators Encapsulated in PDMS for Highly Sensitive Displacement Detection," J Liao, A Qavi, M Adolphson, **L Yang**, *Journal of Lightwave Technology* (2022)
- J33 "A fiber optic–nanophotonic approach to the detection of antibodies and viral particles of COVID-19," N. Rajil, A. Sokolov, Z. Yi, G. Adams, G. Agarwal, V. Belousov, R. Brick, K. Chapin, J. Cirillo, V. Deckert, S. Delfan, S. Esmaili, A. Fernández-González, E. Fry, Z. Han, P. Hemmer, G. Kattawar, M. Kim, M. Lee, C. Lu, J. Mogford, B. Neuman, J.-W. Pan, T. Peng, V. Poor, S. Scully, Y. Shih, S. Suckewer, A. Svidzinsky, A. Verhoef, D. Wang, K. Wang, **L Yang**, A. Zheltikov, S. Zhu, S. Zubairy, M. Scully, *Nanophotonics* 10 (1), 235-246 (2021)
- J34 "Quantum noise theory of exceptional point amplifying sensors," M Zhang, W Sweeney, CW Hsu, **L Yang**, AD Stone, L Jiang, *Physical review letters* 123 (18), 180501 (2019)
- J35 "Enhanced sideband responses in a PT-symmetric-like cavity magnomechanical system," SN Huai, YL Liu, J Zhang, **L Yang**, Y Liu, *Physical Review A* 99 (4), 043803 (2019).
- J36 "Surface-enhanced Raman scattering on dielectric microspheres with whispering gallery mode resonance," SH Huang, X Jiang, B Peng, C Janisch, A Cocking, ŞK Özdemir, Z Liu, and **L. Yang**, *Photonics Research* 6 (5), 346-356 (2018).
- J37 "Whispering gallery mode resonator sensor for in situ measurements of hydrogel gelation," SH Huang, S Sheth, E Jain, X Jiang, SP Zustiak, **L Yang**, *Optics express* 26 (1), 51-62 (2018).
- J38 "Scatterer assisted whispering gallery mode microprobe," F Shu, X Jiang, G Zhao, **L Yang**, *Nanophotonics*, 7(8), 1455-1460 (2018)
- J39 "Single nanoparticle detection using optical microcavities," Y Zhi, XC Yu, Q Gong, **L Yang**, YF Xiao, *Advanced Materials* 29 (12) (2017)
- J40 "Polymer encapsulated microcavity optomechanical magnetometer," J Zhu, G Zhao, I Savukov, **L Yang**, *Scientific Reports* 7 (1), 8896 (2017)
- J41 "Structural Protein-Based Whispering Gallery Mode Resonators," H Yilmaz, A Pena-Francesch, R Shreiner, H Jung, Z Belay, MC Demirel, S. K. Ozdemir, **L. Yang**, *ACS Photonics* 4 (9), 2179-2186 (2017)
- J42 "Four-wave mixing parametric oscillation and frequency comb generation at visible wavelengths in a silica microbubble resonator," Yong Yang, Xuefeng Jiang, Sho Kasumie, Guangming Zhao, Linhua Xu, Jonathan M Ward, **L. Yang**, Síle Nic Chormaic, *Optics Letters*, 41(22), 5266-5269 (2016)
- J43 "Metrology with PT-symmetric cavities: Enhanced sensitivity near the PT-phase transition," ZP Liu, J Zhang, ŞK Özdemir, B Peng, H Jing, XY Lü, CW Li, **L Yang**, F. Nori, Y. Liu, *Physical Review Letters*, 117 (11), 110802 (2016)
- J44 "High-Q silk fibroin whispering gallery microresonator", L. Xu, X. Jiang, G. Zhao, D. Ma, H. Tao, Z. Liu, F. G. Omenetto, **L. Yang**, *Optics Express*, Vol. 24, Issue 18, 20825-20830 (2016)
- J45 "Phone-sized whispering-gallery microresonator sensing system", X. Xu, X. Jiang, G. Zhao, **L. Yang**, *Optics Express*, 24 (23), 25905-25910 (2016)
- J46 "Raman gain induced mode evolution and on-demand coupling control in whispering-gallery-mode microcavities," X Yang, ŞK Özdemir, B Peng, H Yilmaz, FC Lei, GL Long, **L Yang**, *Optics Express*, 23 (23), 29573-29583 (2015).

- J47 "Transient microcavity sensor," FJ Shu, CL Zou, ŞK Özdemir, **L Yang**, GC Guo, *Optics Express*, 23 (23), 30067-30078 (2015).
- J48 "Distillation of photon entanglement using a plasmonic metamaterial," M. Asano, M. Bechu, M. Tame, Ş. K. Özdemir, R. Ikuta, D. Ö. Güney, T. Yamamoto, **L. Yang**, M. Wegener, and N. Imoto, *Sci Rep.* 5: 18313 (2015)
- J49 "Label-free particle sensing by fiber taper based Raman spectroscopy," P. S. Edwards, C. T. Janisch, B. Peng, J. Zhu, S. K. Ozdemir, **L. Yang**, and Z. Liu, *IEEE Photonics Technology Letters*, Vol. 26, Issue 20, 2093-2096 (2014)
- J50 "Interfacing whispering-gallery microresonators and free space light with cavity enhanced Rayleigh scattering," J. Zhu, SK. Ozdemir, H. Yilmaz, B. Peng, M. Dong, M. Tomes, T. Carmon and **L. Yang**, *Scientific Report*, 4, Article number: 6396 (2014)
- J51 "Infrared light detection using a whispering-gallery-mode optical microcavity," J. Zhu, S. K. Ozdemir, and **L. Yang**, *Appl. Phys. Lett.* 104, 171114 (2014).
- J52 "Statistical study of multiple-scatterer induced frequency splitting in microresonators," L. He, S. K. Ozdemir, J. Zhu, F. Monifi, H. Yilmaz, and **L. Yang**, *New. J. Phys.* 15, 073030 (2013)
- J53 "Detection and size measurement of individual hemozoin nanocrystals in aquatic environment using a whispering gallery mode resonator," W. Kim, S. K. Ozdemir, J. Zhu, F. Monifi, C. Coban and **L. Yang**, *Opt. Exp.*, 20, 29426-29446 (2012).
- J54 "A Robust and Tunable Add-Drop Filter Using Whispering Gallery Mode Microtoroid Resonator," F. Monifi, J. Friedlein, S. K. Ozdemir, and **L. Yang**, *IEEE J. of Lightwave Tech.*,
- J55 "Single virus and nanoparticle size spectrometry by whispering-gallery-mode microcavities," J. Zhu, S.K. Ozdemir, L. He, D. R. Chen and **L. Yang**, *Optics Express*, vol. 19, p. 16195-16206 (2011).
- J56 "Optical detection of single nanoparticles with a subwavelength fiber-taper" J. Zhu, S.K. Ozdemir, and L. Yang, *IEEE Photonics Technology Letters*, Vol. 23, Issue 18, pp 1346-1348 (2011)
- J57 "Observation and characterization of mode splitting in microsphere in water", W. Kim, S.K. Ozdemir, J. Zhu, L. He and **L. Yang**, *Applied Physics Letters*, Vol. 98, 141106 (2011)
- J58 "Controlled manipulation of mode splitting in an optical microcavity by two Rayleigh scatterers" J. Zhu , S.K. Ozdemir, L. He and L. Yang, *Opt. Express*, Vol. 18, Issue, 23, 23535-23543 (2010)
- J59 "Ultrasensitive detection of mode splitting in active optical microcavities", L. He, S.K. Ozdemir, J. Zhu, and **L. Yang**, *Phy. Rev. A*. Vol. 82, Issue 5, 053810- (2010)
- J60 "Demonstration of mode splitting in an optical microcavity in aqueous environment", W. Kim, S.K. Ozdemir, J. Zhu, L. He and **L. Yang**, *Applied Physics Letters*, Vo. 97, 071111-(2010)
- J61 "Gain-induced Evolution of Mode Splitting Spectra in a High-Q Active Microresonator", L. He, S.K. Ozdemir, J. Zhu, and **L. Yang**, *IEEE Journal of Quantum Electronics*, Vol. 46, p1626-1633, (2010)
- J62 "Scatterer induced mode splitting in PDMS coated microresonators", L. He, S.K. Ozdemir, J. Zhu, and **L. Yang**, *App. Phy. Lett.* Vol. 96, 221101 (2010).

Book Chapters

- B1 "Non-Hermitian Physics and Engineering in Silicon Photonics", C Wang, Z Fu, **L Yang**, 323-364, *Silicon Photonics IV*, Lockwood D.J., Pavesi L. (eds) *Silicon Photonics IV. Topics in Applied Physics*, vol 139. Springer, Cham. https://doi.org/10.1007/978-3-030-68222-4_7

- B2 “Non-Hermitian Physics and Exceptional Points in High-Quality Optical Microresonators”, W Chen, C Wang, B Peng, **L Yang**, Chapter 8, Ultra-high-Q Optical Microcavities, edited by Y. Xiao, C. Zou Q. Gong and **L. Yang**, World Scientific.
- B3 “Glass in Integrated Photonics” for the Springer Handbook of Glass, J. Hu and **L. Yang**, edited by J. David Musgraves, Juejun Hu and Laurent Calvez, Springer.
- B4 “Fabrication, coupling and nonlinear optics in ultra-high-Q microsphere and chip-based toroid microcavities”, T. Kippenberg, S. Spillane, D. Armani, B. Min, **L. Yang**, and K. Vahala, Chapter 5, Optical Microcavities, editor K. J. Vahala, World Scientific.
- B5 A bio-photonics chapter to a review volume entitled “Understanding Biophotonics: Fundamentals, Advances and Applications” to be published by Pan Stanford Publishing, J. Zhu, L. He, S. Ozdemir, W. Kim, B. Peng, and **L. Yang**.

Perspective/News & Views

- P1 “Fighting chaos with chaos in lasers,” **L. Yang**, *Science*, 361(6408), 1201 (2018)
- P2 “Bypassing the diffusion limit,” J. Zhu, S.K. Ozdemir and **L. Yang**, *Nature Photonics*, Vol. 5, 653-654 (2011)

PATENTS

- “Replica Micro-Resonators and Method of Fabrication”, A. Martin, D. Armani, **L. Yang** and K. Vahala, U.S. Patent No. 7,236,664, issued on June 26, 2007.
- “Silica Sol Gel Micro-Laser on a Substrate”, K. Vahala, and **L. Yang** U.S. Patent No. 7,769,071, issued on August 3, 2010.
- “Nanoscale object detection using a whispering gallery mode resonator”, L. He, J. Zhu, S. K. Ozdemir, **L. Yang**, D. R. Chen, Patent No. 8,704,155, issued on April 22, 2014.
- “Systems and Methods for Particle Detection”, J. Zhu, S. Ozdemir, and **L. Yang**, U.S. Patent 9,012,830, issued on April 21, 2015.
- “Method and system for parity-time symmetric optics and nonreciprocal light transmission”, SK Ozdemir, B Peng, **L Yang**, US Patent 9,531,150, issued on Dec 27, 2016.
- “Resonator enhanced Raman spectroscopy”, Z. Liu, **L. Yang**, P. Edwards, C. Janisch, B. Peng, and S. Ozdemir, US Patent 9,733,125, issued on August 15, 2017.
- “Tunable add-drop filter with an active resonator”, **L. Yang**, S. K. Ozdemir, F. Monifi, US Patent 09,766,402, issued on September 19, 2017.
- “Micro-resonator and fiber taper sensor system,” S. Kaya Ozdemir, **L. Yang**, US Patent, 11,061,025, issued on July 13, 2021.
- “Loss engineering to improve system functionality and output,” S. K. Ozdemir, **L. Yang**, B. Peng, US Patent 11,131,619, issued on September 28, 2021.

SELECTED INVITED TALKS

1. “Emerging opportunities in optical microresonators: fundamentals and applications,” University of Illinois Urbana-Champaign ECE Distinguished Colloquium Series, 1002 Grainger Auditorium ECEB, Sep 1, 2022.
2. “A photonic technology for the detection and characterization of single protein molecules,” 2022 ASBMB (the American Society for Biochemistry and Molecular Biology) Annual Meeting, Philadelphia, Pennsylvania, Apr 2, 2022 – Apr 5, 2022.

3. "Opportunities in Optical Microresonators: Science and Applications," MIT MSE (Materials Science and Engineering) Seminar Series, March 29, 2022.
4. "Opportunities of high-quality photonic resonators for sensing applications," PQE-the winter colloquium on the physics of quantum electronics, Snowbird, Utah, January 10, 2022.
5. "Opportunities in Optical Microresonators: Science and Applications," Spring 2022 ECE UVA Distinguished Colloquium series, Department of Electrical and Computer Engineering, University of Virginia, February 18, 2022.
6. "Whispering Gallery Micro-cavities: Fundamentals and Applications," Stanford MSE colloquium, March 12th, 2021.
7. "Optical resonators at exceptional points," IEEE Photonics Conference (IPC), San Antonio, TX, Sep. 29-Oct. 3, 2019.
8. "Whispering-gallery resonators: a versatile platform for science and technologies," Workshop on Optical Nanofibre Applications: From Quantum to Bio Technologies, Okinawa, Japan, June 3 – 6, 2019.
9. "Whispering-gallery sensors," Conference on Lasers and Electro-Optics (CLEO), San Jose, California, USA, May 5-10, 2019.
10. "Recent progress in whispering-gallery sensors," SPIE Photonics West, San Francisco, CA, Feb 2-7, 2019.
11. "Whispering-gallery-mode resonators and their applications," PQE-the winter colloquium on the physics of quantum electronics, Snowbird, Utah, January, 2019 (**plenary talk**)
12. "Optical resonators at exceptional points", IEEE Photonics Conference (IPC), Reston, VA, Sep 30- Oct 4, 2018. (**Tutorial**)
13. "Whispering-gallery-mode resonators: fundamentals and applications," Physics Colloquium, University of Colorado, Boulder, Sep 5, 2018.
14. "Whispering-gallery-mode resonators: fundamentals and applications," 2018 Workshop on Optical Resonators, Dalian, China, August 21-23, 2018. (**Tutorial**)
15. "Whispering-gallery-mode Resonators: Nonlinear optics, parity-time symmetry and exceptional points," Conference on Lasers and Electro-Optics, Pacific Rim, Hongkong July 29-Aug 3, 2018. (**Tutorial**)
16. "Parity-Time-Symmetry and Exceptional Points for Lasing Systems," Gordon Research Conference - Lasers in Micro, Nano and Bio Systems, Integration of Laser Physics, Photonics, Materials, Nanotechnology, Biochemistry, and Biomedicine, Waterville Valley, NH, US, June 17-22, 2018.
17. "Non-Hermitian Symmetry and Wave Transport in Whispering-Gallery-Mode Microresonators," Yale Quantum Institute Seminar, Feb 23, 2018.
18. "Whispering-gallery-mode resonators at exceptional points," PQE-the winter colloquium on the physics of quantum electronics, Snowbird, Utah, January 7-12, 2018.
19. "Whispering-gallery-mode resonators: from a novel sensing mechanism to a wireless sensing system," SPIE-Photonics West, San Francisco, CA, US, Jan 27-Feb 1, 2018.
20. "High-quality microresonators for detection and measurement of nanoscale objects," IEEE Photonics Conference, Orlando, Florida, USA, 2017, 1-5 October 2017.
21. "Whispering gallery micro-cavities," Conference on Lasers and Electro-Optics Europe (CLEO/Europe) and the European Quantum Electronics Conference (EQEC) 2017, Munich, Germany, June 25 - 29, 2017. (**Keynote talk**)
22. "Whispering-gallery-mode microresonators for functional devices" CLEO (Conference on Lasers and Electro-Optics), San Jose, California, USA, May 14-19, 2017.

23. "Whispering-gallery-mode microresonators and their applications," 15th International Nanotech Symposium & Nano-Convergence Expo, NANO KOREA 2017, held in KINTEX, Ilsan, Korea, July 12-14, 2017.
24. "Whispering-gallery-mode resonators and their applications for nanoscale sensing and measurement," SPIE Photonics West, San Francisco, CA, Jan 28-Feb 2, 2017.
25. "Whispering-gallery-mode resonators and their applications: from nanoscale measurement to directional lasing," The 6th International Multidisciplinary Conference on Optofluidics, Beijing, China, July 24-27, 2016, (*Keynote talk*)
26. "Whispering-gallery-mode resonators and their applications: from nanoscale measurement to parity-time symmetric photonics," The 4th International Workshop on Microcavities and Their Applications (WOMA2015), Hokkaido, Japan, Dec 1-4, 2015.
27. "Whispering-Gallery-Mode optical resonators around exceptional points," IEEE Photonics Conference (IPC), Reston, Virginia USA, 4 - 8 October 2015.
28. "Whispering-gallery-mode resonators and their applications: from nanoscale measurement to parity-time symmetric photonics," Optical nanofiber applications: from quantum to bio technologies (ONNA 2015 workshop), Okinawa, Japan, May 25-28, 2015.
29. "Single nanoparticle sensing using whispering-gallery microresonators and microlasers," SPIE Biosensing and Nanomedicine-III, SPIE NanoScience + Engineering, San Diego, CA, August 25 – 29, 2013.
30. "Whispering-gallery-mode resonators for nanoscale sensing", Integrated Optics: Devices, Materials, and Technologies XVII (OE109), Feb 2-Feb 7, Photonics West 2013.
31. "Single Nanoparticle Sensing using Whispering-Gallery Microresonators and Microlasers," Nanotechnology for Sensors and Sensors for Nanotechnology: Improving and Protecting Health, Safety, and the Environment NNI Signature Initiative symposium at Nanotech, May 16-23, 2013.
32. "On-chip whispering-gallery-mode lasers for sensing applications," *SPIE Photonics West*, San Francisco, CA during January 21-26, 2012.
33. "Ultra-high-quality optical resonators for applications from sensing to nonlinear optics," *Frontiers in Optics 2011/Laser Science XXVII*, San Jose, CA, Oct. 16-20, 2011.
34. "Ultra-sensitive detection and measurement of nano-scale objects," *IEEE Photonics Society: Annual 2011*, Arlington, Virginia, Oct. 9-13, 2011.
35. "On-chip optical resonators for single particle detection and measurement," *Nanoelectronic Devices for Defense & Security Conference*, Brooklyn, NY, August 29 to September 1, 2011.
36. "Fiber-coupled microresonators," Lan Yang, Jiangang Zhu, Sahin Ozdemir, and Lina He, *International Conference on Optical Fiber Sensors*, Ottawa, Canada, May 15-19, 2011.
37. "On-chip optical resonators for single nanoparticle detection and measurement," "Bio-Optics: Design and Application (BODA)", which is a part of "Optics in the Life Sciences: OSA Optics and Photonics Congress", April 4-6, 2011, Monterey, CA.
38. "On-chip single nanoparticle detection and measurement using ultra-high-Q whispering gallery microresonators," *SPIE Photonics West*, San Francisco, CA during January 22-27, 2011.
39. "On-chip single nanoparticle detection using ultra-high-Q whispering gallery microresonator," *SPIE symposium on SPIE Defense, Security, and Sensing*, 2010.

SELECTED PROFESSIONAL ACTIVITIES

- Serve on Technical Program Committee on Fabrication, Design and Instrumentation for Frontiers in Optics + Laser Science, Tacoma, WA, USA, Oct 9-12, 2023.

- Session chair on active metamaterials, APS March Meeting, Las Vegas Nevada, USA, March 5-10, 2023
- Guest editor for the Applied Optics Optical Fiber Sensors Feature Issue, 2022.
- Technical program co-chair, the 27th International Conference on Optical Fiber Sensors, Alexandria, Virginia, USA, August 29-September 2, 2022.
- Serve on the Technical Program Committee in Nanophotonics, IEEE Photonics Conference 2017-2021.
- Serve on program committee for the conference on “Laser Resonators, Microresonators, and Beam control” in SPIE Photonics West 2012-2017.
- Subcommittee co-chair of Micro and Nanophotonics at Optics Frontier: the 12th International Conference on Information Optics and Photonics (CIOP2020), Beijing, China, 27-30 July 2020.
- Guest editor, Topical issue on “Optical Nanofibers and microresonators: Fundamentals and Applications,” Applied Physics B-Lasers and Optics, 2020.
- Serve on Micro- and Nano-Photonic Devices Subcommittee for the CLEO Technical Program Committee (TPC), 2018-2020
- NSF Review Panelist, 2007/2010/2011/2013/2015/2017/2018/2020
- Serve on the Technical Program Committee in Biophotonics, IEEE Photonics Conference 2019.
- Serve on the Technical Program Committee in Semiconductor Lasers, IEEE Photonics Conference 2019.
- Organize a special symposium on nonreciprocal photonics at the Conference on Lasers and Electro-Optics (CLEO), San Jose, California, USA, May 5-10, 2019.
- Serve on program committee for the conference on “Frontiers in Biological Detection: From Nanosensors to Systems” in SPIE Photonics West 2019.
- Serve on the organizing committee for ONNA (Optical Nanofiber Applications: From Quantum to Bio Technologies) 2019, Okinawa, Japan.
- Organize Nature Conference on Topological Photonics — From Concepts to Devices with editors from Nature Publishing group, Washington University, St. Louis, MO, US, November 11–13, 2018.
- Organize a workshop on optical resonators: fundamentals and applications at the 13th Pacific Rim Conference on Lasers and Electro-Optics (CLEO Pacific Rim, CLEO-PR 2018), July 30, 2018.
- Associate editor, Optics Express, March 2014 to 2018.
- Entrepreneurial Acceleration Program (LEAP) Grant Recipient for her project on “Re-inventing arterial blood gas measurements”, Washington University in St. Louis, (2017).
- Session chair for SPIE Photonics West, San Francisco, California, 2012, 2013, 2014, 2015.
- Lead a workshop at the 9th Night Vision Systems, Arlington, VA, July 21-23, 2014.
- Session chair for SPIE Photonics West, San Francisco, California, Jan. 21-26, 2012.
- Session chair for the Nanoelectronic Devices for Defense & Security (NANO-DDS) Conference, 2011.

- Session chair for Frontiers in Optics 2011/Laser Science XXVII, San Jose, CA, Oct. 16-20, 2011.
Session chair for IEEE Photonics Society: Annual 2011. Arlington, Virginia, Oct. 9-13, 2011.