OLAV SOLGAARD

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BIOGRAPHICAL INFORMATION

Academic History:

Ph.D.	Electrical Engineering, Stanford University	1992
M. S.	Electrical Engineering, Stanford University	1987
B. S.	Electrical Engineering, Norwegian Institute of Technology, Norway	1981

Scholarships:

- Royal Norwegian Councils for Scientific and Industrial Research Fellowship for Advanced Studies, 1986
- Andrew E. Wigeland and G. Norman Wigeland Fund Grant for Graduate Study, 1986

Employment History:

2012-Present	Professor, Department of Electrical Engineering, Stanford University
2012-2018	Associate Chair of Graduate Education, Department of Electrical Engineering, Stanford University
2008-2014	Director of Edward L. Ginzton Laboratory, Stanford University
2006-2008	Deputy Director of Edward L. Ginzton Laboratory, Stanford University
2003-2012	Associate Professor, Department of Electrical Engineering, Stanford University
1999-2003	Assistant Professor, Department of Electrical Engineering, Stanford University
1995-1999	Assistant Professor, Department of Electrical and Computer Engineering, University of CA, Davis
1994-2001	Co-founder, consultant and member of Technology Advisory Board, Silicon Light Machines, Sunnyvale, CA
1992-1995	Post Doctoral Research Engineer, University of CA, Berkeley
1983-1986	Development Engineer, SensoNor a.s., Horten, Norway
1982-1983	Noncommissioned officer, Royal Norwegian Naval Academy, Norway
1981-1982	Teaching Assistant, Norwegian Institute of Technology, Norway

Public and Professional Service:

- Guest editor of Special Issue on Nano Photonics and Optical MEMS of the *IEEE Journal on Selected Topics in Quantum Electronics*, Sept/Oct 2009.
- Chairman of standing committee for IEEE/LEOS Conference on Optical MEMS 2006-2009
- Topical editor of IEEE Journal of MicroelectroMechanicalSystems (JMEMS) since 2004.

- Member of standing committee for IEEE/LEOS Conference on Optical MEMS 2002-2009.
- Guest editor of Special Issue on Optical Microsystems of the *IEEE Journal on Selected Topics in Quantum Electronics*, March/April 2007, May/June 2004, and January/February 2002.
- General Chair of IEEE/LEOS Conference on Optical MEMS 2003.
- Program Committee Chair, IEEE/LEOS Conference on Optical MEMS 2000.

Awards and Honors:

- Outstanding Paper Award for the paper titled "3D printed optics with nanometer scale surface roughness" published in the Nature journal Microsystems & Nanoengineering (http://mine2020.csp.escience.cn/dct/page/70007), 2020.
- Fellow of the IEEE, 2017
- Fellow of the Norwegian Academy of Technological Sciences, 2010
- Fellow of the Optical Society of America, 2008
- Member of Det Kongelige Norske Videnskapers Selskab (The Royal Norwegian Society of Sciences and Letters), 2008
- Terman Fellow, 1999-2002
- National Science Foundation - Faculty Early Career Development Program, 1998

Invited Talks and Invited Papers:

- O. Solgaard, "Linear Micromechanical Phased Arrays", 2019 International Conference on Optical MEMS and Nanophotonics (IEEE OMN 2019, http://www.omn2019.org), held in Daejeon, Korea, from July 28 to August 1, 2019. (Keynote Speaker)
- O. Solgaard, "Silicon on Nothing Photonic Microsystems", Light Conference, Changchun, China, 17-18 July 2017 (Plenary talk).
- O. Solgaard, "Sensors based on Silicon Photonic Crystal Mirrors with Engineered Phase Delay", Photonic West, San Francisco, February 2017 (Invited talk).
- O. Solgaard, "Photonics in Autonomous Cars", Workshop on sensors for autonomous cars, Stanford, September 9th, 2016 (invited talk).
- O. Solgaard, "Dielectric Laser Driven Electron Accelerators: Physics, Technology and Applications", 6th annual workshop, Norwegian PhD Network on Nanotechnology for Microsystems, Trondheim, Norway,13-15, June 2016 (Invited talk).
- O. Solgaard, "Dielectric Laser Driven Electron Accelerators: Physics, Technology and Applications", Medical Physics Research Summit, Saratoga, CA, Saturday, February 20th, 2016 (Keynote presentation).
- O. Solgaard, "Fiber Optic Acoustic Sensors for In-vivo Studies", Optical Fiber Sensors II: Biosensors, Frontiers in Optics/Laser Science 2015, October 18 - 22, 2015 (Invited talk).
- O. Solgaard, "Implantable sensors for longitudinal in-vivo studies", Sixth Annual SU2P Symposium, March 23-24 2015, University of St Andrews, Scotland (Keynote talk).
- O. Solgaard, "In-vivo imaging with Dual Axis Confocal Microscopes", 5th annual workshop, Norwegian PhD Network on Nanotechnology for Microsystems, Tønsberg, Norway,16-18 June 2014 (Invited talk).

- O. Solgaard, “In-vivo imaging with Dual Axis Confocal Microscopes enabled by Optical MEMS/NEMS”, IEEE-NEMS 2014 Conference, 13-16 April 2014, Hyatt Regency Waikiki, Honolulu, Hawaii (Invited talk).
- O. Solgaard, “Resonant Photonic Crystal Mirrors for Miniaturization of Optical Sensors”, 9th International Conference on Optics-photonics Design and Fabrication (ODF'14), Itabashi, Tokyo”, February 12-14, 2014 (Invited talk).
- O. Solgaard, “Multilayer silicon waveguides on standard silicon wafers”, 4th annual workshop, Silicon Photonic Forum, Kaohsiung, Taiwan, 18-19 November 2013 (Invited talk).
- O. Solgaard, “Fiber Optical Sensors Based on Photonic Crystal Fabry Perot Resonators”, 4th annual workshop, Norwegian PhD Network on Nanotechnology for Microsystems, Bergen Student Centre, Bergen, 17-19 June 2013 (Invited talk).
- O. Solgaard, “Nanotechnology applied to scaling of optical systems”, 3rd annual workshop, Norwegian PhD Network on Nanotechnology for Microsystems, Trondheim, 11-13 June 2012 (Invited talk).
- O. Solgaard, “Multifunctional Fiber Sensors Based on Photonic Crystals”, 2012 IEEE Photonics Conference (IPC), pp. 264-265, Burlingame, CA, SEP 23-27, 2012 (Invited talk).
- O. Solgaard, “Optomechatronics on the Nanoscale,” ISOT 2010 - International Symposium on Optomechatronic Technologies, Toronto, Canada, 25-27 October, 2010 (Invited Plenary Talk).
- O. Solgaard, “Optical Sensors and Actuators Enabled by Photonic Crystals,” Micro Mechanics Europe Workshop (MME 2010), Enschede, The Netherlands, 26-28 September, 2010 (Invited talk).
- O. Solgaard, “Miniaturization of free space optical systems,” Applied Optics, vol. 49, no. 25, pp. F18-F31, 1 September 2010 (invited paper).
- O. Solgaard, “Connecting to the nanoscale - MEMS/NEMS in information processing, communications and health care,” The Sixth International Nanotechnology Conference on Communication and Cooperation (INC6), Grenoble, France, 17-20 May, 2010 (Invited talk).
- O. Solgaard, “Scaling of Optical Systems with Photonic Crystals and Optical MEMS,” International Symposium on Nano-Micro Multi Functional Devices, Kawasaki City, March 18-19, 2010 (invited talk).
- S. Hadzialic, **I.-W. Jung, O. Kilic, S. Kim**, J. Provine, R.T. Howe, O. Solgaard, “Photonic Crystal Mirrors for Free-Space Communication and Fiber-Optic Sensors,” Technical Digest of the OSA Optics and Photonic Congress on Advanced Solid-State Photonics/Applications of Lasers for Sensing and Free Space Communications (LS&C) on CD-ROM (The Optical Society, Washington, DC, 2010), presentation no. LSWD2, San Diego, CA, January 31-February 3, 2010 (invited talk).
- O. Solgaard, **F. Sarioglu**, “Nanoscale Material Characterization using AFM cantilevers with Differential Interferometric Force Sensors,” Seeing at the Nanoscale Conference, pp. 51, University of California, Santa Barbara, July 28-31, 2009.
- O. Solgaard, “Optical MEMS Based on High-Reflectivity Photonic Crystals,” 2007 IEEE/LEOS Annual Meeting Conference Proceedings, pp. 765-766, Lake Buena Vista, FL, October 21-25, 2007.

- O. Solgaard, "Diffractive Optical Modulators Based on MEMS Technology," 2007 SPIE Photonic West Conference, MOEMS and MEMS 2007, San Jose, CA, January 22, 2007 (Invited plenary presentation).
- **H. Ra**, W. Piyawattanametha, Y. Taguchi, **D. Lee**, O. Solgaard, "Dual-axes confocal microscopy with a MEMS scanner for reflectance and fluorescence imaging," 2007 SPIE Photonic West Conference, MOEMS and Miniaturized Systems VI, San Jose, CA, January 24, 2007 (Invited talk that I elected to let a student present).
- M. Wu, O. Solgaard, J. Ford, "Optical MEMS for Light Wave Communication), *Journal of Lightwave Technology*, Vol. 24, No. 12, pp. 4433-4454, December 2006.
- O. Solgaard, "Wavelength Control with MEMS and Photonic Crystals," Presented at the 2006 Northern Light Conference, Bergen, Norway June 14-16, 2006.
- **X. Li, R. Belikov, K. Yu**, O. Solgaard, "Micromachined Tunable Blazed Gratings," Proc. 2004 IEEE/LEOS International Conf. on Optical MEMS, pp. 6-7, Takamatsu, Kagawa, Japan, August 22-26, 2004 (Invited talk presented by student due to medical emergency).
- O. Solgaard, "OPTICAL MICROSYSTEMS: MEMS in Optical Communication and Sensing," Norwegian Electro-Optics Meeting 2004, Tønsberg, Norway, May 2-4, 2004.
- O. Solgaard, **R. Belikov, K. Yu**, "Interference-Based Optical MEMS Filters," Technical Digest of the 2004 Optical Fiber Communication Conference (OFC 04), paper No. TuD3, Los Angeles, CA, February 22-27, 2004.
- O. Solgaard, "Optical MEMS - Fabrication, Scaling and Design of Microoptical Devices and Systems," Conference on Lasers and Electro-Optics (CLEO), Technical Digest, Baltimore, MD, June 1-6, 2003 (Invited tutorial presentation).
- O. Solgaard, "Dynamic Diffractive Optical Elements based on MEMS Technology," Technical Digest of the 3rd International Conference on Optics-Photonics Design and Fabrication "ODF2002, Tokyo," pp. 25-26, Tokyo, Japan, October 30-November 1, 2002.
- O. Solgaard, "Optical Communication with Coherent MEMS Arrays," 40th Annual Allerton Conference on Communication, Control, and Computing, Allerton House, Monticello, IL, October 2-4, 2002.
- O. Solgaard, **K. Yu, U. Krishnamoorthy**, K. Li, J.P. Heritage, "Microoptical phased arrays for spatial and spectral switching," Design, Test, and Packaging of MEMS/MOEMS 2002, Proceedings of the SPIE, Vol. 4755, pp. 1-9, Cannes, France, May 6-8, 2002.
- O. Solgaard, "High-Resolution Silicon Surface Micromachined Displays" Technical Digest of the IEEE/LEOS IEEJ/SAMS 1997 International Conference on Optical MEMS and their Applications (MOEMS97), pp. 9-14, Nara, Japan, November 18-21, 1997.
- O. Solgaard, M. Daneman, N.C. Tien, R.S. Muller, K.Y. Lau, "Surface-micromachined active optical bench for optoelectronic integration and packaging," Proceeding of the Microelectronics and Sensor Technology Meeting, Lillehammer, Norway, January 17, 1995.

Complete List of Scholarly Publications or Other Creative Works:

(The following lists of publications adhere to the customary practice that the student or non-faculty researcher who is primary responsible for the publication is named first and the faculty are named last. Student authors are shown in boldface. Patents: the inventors are mostly listed alphabetically).

Refereed Journal Publications:

1. U. Niedermayer, **D.S. Black**, K.J. Leedle, **Y. Miao**, R.L. Byer, O. Solgaard, "Low-Energy-Spread Attosecond Bunching and Coherent Electron Acceleration in Dielectric Nanostructures", PHYSICAL REVIEW APPLIED, vol. 15, pp. L021002-1-6, 2021.
2. **D.S. Black**, Z. Zhao, K.J. Leedle, Y. Miao, R.L. Byer, S. Fan, O. Solgaard, "Operating modes of dual-grating dielectric laser accelerators", Physical Review Accelerators and Beams, vol. 23, no. 11, p. 114001, Nov. 10, 2020.
3. **J. Landry, S. Hamann,** O. Solgaard, "High-speed axially swept light sheet microscopy using a linear MEMS phased array for isotropic resolution," J. Biomed. Opt. 25(10), 106504 (2020), doi: 10.1117/1.JBO.25.10.106504.
4. **S. Lorenzo**, O. Solgaard, "Optical Fiber-Facet Multiplexed Monolithic Silicon Pressure Sensors", IEEE Sensors journal, vol. 20, no. 18, September 15, 2020.
5. A.D. Printz, O. Zhao, **S. Hamann**, N. Rolston, O. Solgaard, R.H. Dauskardt, "Self-aligned concentrating immersion-lens arrays for patterning and efficiency recovery in scaffold-reinforced perovskite solar cells", Applied Materials Today vol. 20, p. 100704, September 1, 2020.
6. **J.R. Landry**, **S.S. Hamann**, O. Solgaard, "Random Access Cylindrical Lensing and Beam Steering Using a High-Speed Linear Phased Array", IEEE Photonics Technology Letters, vol. 32, no. 14, pp. 859-862, July 15, 2020.
7. **S. Pai**, I. Williamson, T.W. Hughes, M. Minkov, O. Solgaard, S. Fan, D.A.B. Miller, "Parallel programming of an arbitrary feedforward photonic network", IEEE Journal of Selected Topics in Quantum Electronics, May 28 2020.
8. **S. Lorenzo, Y.-P. Wong**, O. Solgaard, "Optical Fiber-Tip Monolithic Silicon Pressure Sensors", IEEE SENSORS JOURNAL, VOL. 20, NO. 5, MARCH 1, 2020.
9. **Z. Sun**, D.B. Lindell, O. Solgaard, G. Wetzstein, "SPADnet: deep RGB-SPAD sensor fusion assisted by monocular depth estimation", Optics Express 28 (10), 14948-14962, 2020/5/11.
10. H. Deng, K.J. Leedle, **Y. Miao**, **D.S. Black**, K.E. Urbanek, J. McNeur, M. Kozák, **A. Ceballos**, P. Hommelhoff, O. Solgaard, R.L. Byer, J.S. Harris, "Gallium Oxide for High-Power Optical Applications", Advanced Optical Materials, pp. 1901522, 20 Jan 2020.
11. **Y. Miao, D.S. Black**, K.J. Leedle, Z. Zhao, H. Deng, **A. Ceballos**, R.L. Byer, J.S Harris, O. Solgaard, "Surface treatments of dielectric laser accelerators for increased laser-induced damage threshold", Optics Letters 45 (2), 391-394, Jan. 15, 2020.
12. N.V. Sapra, K.Y. Yang, D. Vercruysse, K.J. Leedle, **D.S. Black**, R.J. England, L. Su, R. Trivedi, **Y. Miao**, O. Solgaard, R.L. Byer, J. Vučkovicć, "On-chip integrated laser-driven particle accelerator", Science 367 (6473), 79-83, Jan. 3, 2020.
13. **D.S. Black**, U. Niedermayer, **Y. Miao**, Z. Zhao, O. Solgaard, R.L. Byer. K.L. Leedle, "Net Acceleration and Direct Measurement of Attosecond Electron Pulses in a Silicon Dielectric Laser Accelerator", Physical Review Letters 123 (26), 264802, Dec. 26, 2019.
14. U. Niedermayer, A. Adelmann, S. Bettoni, M. Calvi, M. Dehler, E. Ferrari, F Frei, D. Hauenstein, B Hermann, N Hiller, R Ischebeck, C Lombosi, E Prat, S Reiche, L Rivkin, R Aßmann, U. Dorda, I. Hartl, W. Kuropka, F. Lemery, B. Marchetti, F. Mayet, H. Xuan, J. Zhu, **D.S. Black**, **P.N. Broaddus**, R.L. Byer, **A. Ceballos**, H. Deng, S. Fan, J. Harris, T. Hirano, T.W. Hughes, Y. Jiang, T. Langenstein, K. Leedle, **Y. Miao**, A. Ody, A. Pigott, N. Sapra, O. Solgaard, L. Su, S. Tan, J. Vuckovic, K. Yang, Z. Zhao, O. Boine-Frankenheim, T.

Egenolf, E. Skär, D. Cesar, P. Musumeci, B. Naranjo, J. Rosenzweig, X. Shen, B. Cowan, R.J. England, Z. Huang, H. Cankaya, M. Fakhari, A. Fallahi, F.X. Kärtner, T. Feurer, P. Hommelhoff, J. Illmer, A. Li, A. Mittelbach, J. McNeur, N. Schönenberger, R. Shiloh, A. Tafel, P. Yousefi, M. Kozak, M. Qi, Y.J. Lee, Y.-.C Huang, E. Simakov, "Challenges in simulating beam dynamics of dielectric laser acceleration", International Journal of Modern Physics A, 1942031, Nov. 26, 2019.

15. **S. Lorenzo, Y.P. Wong**, O. Solgaard, "Optical Fiber-Tip Monolithic Silicon Pressure Sensors", IEEE Sensors Journal, Nov. 8, 2019.
16. **N.O. Loewke**, Z. Qiu, M.J. Mandella, R. Ertsey, A. Loewke, L.A. Gunaydin, E.L. Rosenthal, C.H. Contag, O. Solgaard, "Software-Based Phase Control, Video-Rate Imaging, and Real-Time Mosaicing with a Lissajous-Scanned Confocal Microscope", IEEE Transactions on Medical Imaging, Sep. 27, 2019.
17. **Y.P. Wong, S. Lorenzo, Y. Miao, J. Bregman**, O. Solgaard, "Extended Design Space of Silicon-on-Nothing MEMS", Journal of Microelectromechanical Systems 28 (5), 850-858, July 26, 2019.
18. S. **S. Pai**, B. Bartlett, O. Solgaard, D.A.B. Miller, "Matrix optimization on universal unitary photonic devices", Physical Review Applied 11 (6), 064044, June 19, 2019.
19. **J.R. Landry**, R. Itoh, J.M. Li, **S.S. Hamann**, M. Mandella, C.H. Contag, O. Solgaard: "Tunable structured illumination light sheet microscopy for background rejection and imaging depth in minimally processed tissues", Journal of biomedical optics, vol 24, no. 4, pp. 046501S, April 2019.
20. **D.S. Black**, K.J. Leedle, **Y. Miao**, U. Niedermayer, R.L. Byer, O. Solgaard, "Laser-Driven Electron Lensing in Silicon Microstructures", Physical Review Letters, vol. 122, no. 10, p. 104801, 12 March 2019.
21. **Hamann, A. Ceballos, J. Landry**, O. Solgaard, "High-speed random access optical scanning using a linear MEMS phased array", Optics letters 43 (21), 5455-5458, Nov 1 2018.
22. **Y.P. Wong, S. Lorenzo**, O. Solgaard, "Design and Fabrication of Monolithic Photonic Crystal Fiber Acoustic Sensor", IEEE Sensors Journal 18 (19), 7826-7832, Oct 1 2018.
23. **N. Vaidya**, O. Solgaard, "3D printed optics with nanometer scale surface roughness", Microsystems & Nanoengineering 4 (1), 18, July 16 2018.
24. J. McNeur, M. Kozák, N. Schönenberger, K.J. Leedle, H. Deng, **A. Ceballos**, H. Hoogland, A. Ruehl, I. Hartl, R. Holzwarth, O. Solgaard, J.S. Harris, R.L. Byer, P. Hommelhoff "Elements of a dielectric laser accelerator", Optica 5 (6), 687-690, June 20 2018.
25. **Y.P. Wong, Y. Miao, J. Skarda**, O. Solgaard, "Large negative and positive optical Goos–Hänchen shift in photonic crystals", Optics letters 43 (12), 2803-2806, June 15 2018.
26. T.W. Hughes, S. Tan, Z. Zhao, N.V. Sapra, K.J. Leedle, H. Deng, **Y. Miao**, **D.S. Black**, O. Solgaard, J.S. Harris, J. Vuckovic, R.L. Byer, S. Fan, R.J. England, Y.J. Lee, M. Qi, "On-chip laser-power delivery system for dielectric laser accelerators", Physical Review Applied 9 (5), 054017, 5 May 2018.
27. K.J. Leedle, **D.S. Black, Y. Miao**, K.E. Urbanek, **A. Ceballos**, H. Deng, J.S. Harris, O. Solgaard, R.L. Byer "Phase-dependent laser acceleration of electrons with symmetrically driven silicon dual pillar gratings", Optics letters 43 (9), 2181-2184, May 1 2018.

28. **N.O. Loewke, S. Pai, C. Cordeiro, D. Black**, B.L. King, C.H. Contag, B. Chen, T.M. Baer, O. Solgaard, "Automated Cell Segmentation for Quantitative Phase Microscopy", IEEE Transactions on Medical Imaging, vol. 37, No. 4, pp. 929-940, April 2018.
29. **S. Hamann**, L. Shi, O. Solgaard, G. Wetzstein, "Time-multiplexed light field synthesis via factored Wigner distribution function", Optics Letters, vol. 43, no. 3, pp. 599-602, February 1, 2018.
30. **C. Cordeiro**, O.J Abilez, G. Goetz, T. Gupta, Y. Zhuge, O. Solgaard, D. Palanker, "Optophysiology of cardiomyocytes: characterizing cellular motion with quantitative phase imaging", Biomedical optics express, vol. 8, no. 10, pp. 4652-4662, October 1, 2017.
31. M. Kozák, P. Beck, H. Deng, J. Mcneur, N. Schönenberger, C. Gaida, F. Stutzki, M. Gebhardt, J. Limpert, A. Ruehl, I. Hartl, O. Solgaard, J.S. Harris, R.L. Byer, P. Hommelhoff, "Acceleration of sub-relativistic electrons with an evanescent optical wave at a planar interface", Optics Express, vol. 25, no. 16, pp. 19195-19204, 7 August 2017.
32. Itoh, **J.R. Landry, S.S. Hamann**, O. Solgaard, "Light sheet fluorescence microscopy using high-speed structured and pivoting illumination", Optics Letters, vol. 41, no. 21, pp. 5015-5018, 1 November 2016.
33. **O. Kilic, H. Ra, O.C. Akkaya**, M.J.F. Digonnet, O. Solgaard, "Haltere-Like Optoelectromechanical Gyroscope", IEEE Sensors Journal, Vol. 16, No. 11, pp. 4274-4280, June 1, 2016.
34. T. Wu, **S.S. Hamann, A.C. Ceballos**, C.-E. Chang, O. Solgaard, R.T. Howe, "Design and fabrication of silicon-tessellated structures for monocentric imagers", Microsystems & Nanoengineering, vol. 2, Article number: 16019, May 2016.
35. **S.A Khan**, **C.-M. Chang**, Z. Zaidi, W. Shin, Y. Shi, A.K. Ellerbee Bowden, O. Solgaard, "Metal-insulator-metal waveguides for particle trapping and separation", Lab on a Chip, vol. 16, pp. 2302–2308, May. 2016.
36. J. McNeur, M. Kozák, N. Schönenberger, K.J. Leedle, H. Deng, A. Ceballos, H. Hoogland, A. Ruehl, I. Hartl, O. Solgaard, J.S. Harris, R.L. Byer, P. Hommelhoff, "Elements of a dielectric laser accelerator", arXiv preprint arXiv:1604.07684, April 26, 2016
37. A. Wang, **K. Vijayraghavan,** O. Solgaard, M.J. Butte, "Fast Stiffness Mapping of Cells Using High Bandwidth Atomic Force Microscopy", *ACS Nano*, vol. 10, no.1, pp 257–264, January 26 2016.
38. **C. Jan**, W. Jo, M.J.F. Digonnet, O. Solgaard, "Photonic-Crystal-Based Fiber Hydrophone with Sub-100 μPa/√Hz Pressure Resolution", *IEEE Photonics Technology Letters*, vol. 28, no. 2, pp. 123-126, January 15, 2016.
39. S.M. Phadnis, **N.O. Loewke**, I.K. Dimov, S. Pai, **C.E. Amwake**, O Solgaard, T.M. Baer, B. Chen, R.A. Reijo Pera, "Dynamic and social behaviors of human pluripotent stem cells", *Scientific Reports*, vol. 5, Article No: 14209, September 18 2015.
40. K.J. Leedle, **A. Ceballos**, H. Deng, O. Solgaard, R.F. Pease, R.L. Byer, J.S. Harris, Dielectric Laser Acceleration of Sub-100keV Electrons with Silicon Dual Pillar Grating Structures, *Optics Letters*, Vol. 40, No. 18, pp. 4344-4347, September 15, 2015.
41. **X. Wu, C. Jan**, O. Solgaard, "Single-Crystal Silicon Photonic-Crystal Fiber-Tip Pressure Sensors", *Journal of Microelectromechanical Systems*, vol. 24, no. 4, pp. 968-75, August 2015.
42. **S.A. Khan**, Y. Shi, **C.-M. Chang**, C. Jan, S. Fan, A.K. Ellerbee, O. Solgaard, "Optical separation of heterogeneous size distributions of microparticles on silicon nitride strip waveguides", *Optics Express*, Vol. 23, No. 7, pp. 8855–8866, April 6 (2015).

43. **A. Gellineau, Y.-P. Wong**, O. Solgaard, "Design of resonant mirrors with negative group delay", *Optics Express*, Vol. 22, No. 23, pp.29213-29222 (2014).
44. O. Solgaard, A.A. Godil, R.T. Howe, L.P. Lee, Y.-A. Peter, H. Zappe, "Optical MEMS: From Micromirrors to Complex Systems", *Journal of Microelectromechanical Systems*, vol. 23, no. 3, pp. 517-38, June 2014.
45. **B. Park, I.W. Jung,** J. Provine, **A. Gellineau, J. Landry**, R.T. Howe, O. Solgaard, "Double-Layer Silicon Photonic Crystal Fiber-Tip Temperature Sensors", *IEEE Photonics Technology Letters*, vol. 26, no. 9, pp. 900-903, 1 May 2014.
46. **C.-M. Chang**, O. Solgaard, "Silicon buried gratings for dielectric laser electron accelerators", *Applied Physics Letters*, Vol. 104, pp. 184102-1-5, May 2014, doi: 10.1063/1.4875957.
47. **W.A. Ling**, I. Lyubomirsky, O. Solgaard, "Digital quadrature amplitude modulation with optimized non-rectangular constellations for 100 Gb/s transmission by a directly-modulated laser", Optics Express, Vol. 22, No. 9, pp. 10844–10857, May 5, 2014.
48. S.M. Phadnis, I.K. Dimov, S. Pai, **N.O. Loewke**, **C.E. Amwake**, O Solgaard, T.M. Baer, R.A. Reijo Pera, B. Chen, "Dynamic behavior of human pluripotent stem cells predict cell fate", *Journal Of Tissue Engineering and Regenerative Medicine*, vol. 8, pp. 245-245, June 2014.
49. W. Jo, **O.C. Akkaya**, O. Solgaard, M.J.F. Digonnet, "Miniature fiber acoustic sensors using a photonic-crystal membrane", *Optical Fiber Technology*, Vol. 19, no. 6, pp. 785-792, part: B, December 2013.
50. J.O. Grepstad, P. Kaspar, I.-R. Johansen, O. Solgaard, A. Sudbø, "Detection of single nano-defects in photonic crystals between crossed polarizers", Optics Express, Vol. 21, No. 25, pp. 31375–31389, December16, 2013.
51. **A. Gellineau, Y.-P. Wong**, O. Solgaard, "Engineering-reflected phase in Fabry–Perot sensors with resonant mirrors", Optics Letters, vol. 38, no. 23, pp. 4992–4995, December 1, 2013.
52. **C.-M. Chang**, O. Solgaard, "Fano resonances in integrated silicon Bragg reflectors for sensing applications ", Optics Express, Vol. 21, No. 22, pp. 2720927219, November 4, 2013.
53. J.O. Grepstad, M.M. Greve, B. Holst, I.-R. Johansen, O. Solgaard, A. Sudbø, "Finite-size limitations on Quality Factor of guided resonance modes in 2D Photonic Crystals", Optics Express Vol. 21, No. 20, pp. 23640–23654, October 7, 2013.
54. **O.C. Akkaya,** M.J.F. Digonnet, G.S. Kino, O. Solgaard, "Time-Division-Multiplexed Interferometric Sensor Arrays", *Journal of Lightwave Technology*, Vol. 31, No. 16, pp. 2701-2708, August 15, 2013.
55. **X. Wu**, O. Solgaard, "Short-cavity multimode fiber-tip Fabry-Pérot sensors", Optics Express, vol. 21, No. 6, pp. 14487–14499, June 17, 2013.
56. **K. Vijayraghavan, A.A. Gellineau,** A. Wang, M.J. Butte, N.A. Melosh, O. Solgaard "High-Bandwidth AFM Probes for Imaging in Air and Fluid", *Journal of Microelectromechanical Systems*, Vol. 22, No. 3, pp. 603-612, June 2013.
57. **J. Jeong, B. Park,** H. Keum, S. Kim, J. Rogers, O. Solgaard, "Two-axis MEMS scanner with transfer-printed high-reflectivity, broadband monolithic silicon photonic crystal mirrors," Opt. Express, vol. 21, pp. 13800-13809, 31 May 2013.
58. **K. Vijayraghavan,** A. Wang, O. Solgaard, M.J. Butte, N.A. Melosh, "Measurement of elastic properties in fluid using high bandwidth atomic force microscope probes", Appl. Phys. Lett. 102, 103111 (2013); doi: 10.1063/1.4795598 (4 pages), 2013.

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2. S Pai, I.A.D. Williamson, M. Minkov, T.W. Hughes, O. Solgaard, S. Fan, D.D.B. Miller, "Parallel Fault-Tolerant Programming and Optimization of Photonic Neural Networks", 2020 Conference on Lasers and Electro-Optics (CLEO), SM1E. 5, May 10th, 2020.
3. **S. Lorenzo, Y.-P. Wong**, O. Solgaard, "Broadband Optical Fiber-Facet Silicon Pressure Sensor", 2020 Conference on Lasers and Electro-Optics (CLEO), pp. 1-2, May 10th, 2020.
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Microelectromechanical Systems (MEMS) Two-dimensional Scanning Mirror," Conference on Lasers and Electro-Optics (CLEO), Technical Digest, paper CMMM5, Long Beach, CA, May 21-26, 2006.

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on Lasers and Electro-Optics (CLEO), Technical Digest, paper CTuL1, Baltimore, MA, May 22-27, 2005.

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