



## Olav Solgaard

Audrey S. Hancock Professor in the School of Engineering

Electrical Engineering

 Curriculum Vitae available Online

### Bio

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#### BIO

The Solgaard group focus on design and fabrication of nano-photonics and micro-optical systems. We combine photonic crystals, optical meta-materials, silicon photonics, and MEMS, to create efficient and reliable systems for communication, sensing, imaging, and optical manipulation.

#### ACADEMIC APPOINTMENTS

- Professor, Electrical Engineering
- Member, Bio-X
- Affiliate, Precourt Institute for Energy
- Member, Stanford Cancer Institute
- Affiliate, Stanford Woods Institute for the Environment
- Member, Wu Tsai Neurosciences Institute

#### HONORS AND AWARDS

- Fellow, IEEE (2017)
- Fellow, Norwegian Academy of Technological Sciences (2010)
- Fellow, Optical Society of America (2008)
- Member, The Royal Norwegian Society of Sciences and Letters (2008)

#### PROGRAM AFFILIATIONS

- Stanford SystemX Alliance

#### PROFESSIONAL EDUCATION

- PhD, Stanford (1992)

#### PATENTS

- M.J.F. Digonnet, O. Kilic, W. Jo, O. Solgaard, B.H. Afshar. "United States Patent 10,495,508 Phase-front-modulation sensor", Leland Stanford Junior University, Dec 3, 2019
- J.R. Landry, I. Ryosuke, M.J. Mandella, O. Solgaard. "United States Patent 10,401,605 Structured illumination in inverted light sheet microscopy", Leland Stanford Junior University, Sep 3, 2019
- I. Ryosuke, O. Solgaard, S.S. Hamann. "United States Patent 10,310,246 Converter, illuminator, and light sheet fluorescence microscope", Leland Stanford Junior University, Jun 4, 2019
- S Manosalvas-Kjono, R Quan, O Solgaard, Z Su. "United States Patent 11,192,779 Method and apparatus for evaluating electrostatic or nonlinear devices n US Patent", Stanford, May 12, 0175

## Teaching

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### COURSES

#### 2025-26

- Introduction to Electromagnetics and Its Applications: EE 42, ENGR 42 (Aut)
- Introduction to Micro and Nano Electromechanical Systems: ENGR 240 (Win)
- Micro and Nano Optical Device Design: EE 334 (Spr)
- Taking the Pulse of the Planet Lab: EE 115L (Win)

#### 2024-25

- Introduction to Micro and Nano Electromechanical Systems: ENGR 240 (Win)
- Taking the Pulse of the Planet Lab: EE 115L (Win)

#### 2023-24

- Introduction to Electromagnetics and Its Applications: EE 42, ENGR 42 (Spr)
- Introduction to Micro and Nano Electromechanical Systems: ENGR 240 (Win)
- Micro and Nano Optical Device Design: EE 334 (Aut)
- Optics and Electronics Seminar: APPPHYS 483 (Win, Spr)
- Taking the Pulse of the Planet: GEOPHYS 115 (Win)

#### 2022-23

- Introduction to Electromagnetics and Its Applications: EE 42, ENGR 42 (Spr)
- Introduction to Micro and Nano Electromechanical Systems: ENGR 240 (Win)
- Optics and Electronics Seminar: APPPHYS 483 (Win)
- Photonics Laboratory: EE 234 (Spr)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Nancy Ammar, Sara Azzouz, Hamish Carr Delgado, Dominic Catanzaro, Brian Chao, Devin Dean, Sungjun Eun, Arynn Gallegos, Yakub Grzesik, Alex Hwang, Evan Laksono, Taewon Park, Erik Porter

#### Postdoctoral Faculty Sponsor

Jaekwon Lee

#### Doctoral Dissertation Advisor (AC)

Annie Kroo, Anna Miller, Melanie Murillo, Clarisse Woodahl

#### Master's Program Advisor

Fatima Alhosani, Matthew Morawiec, Aytan Sadirova, Zhen Sun

#### Doctoral Dissertation Co-Advisor (AC)

Simon Bongarz

#### Doctoral (Program)

Arynn Gallegos, Matthew Ho, Ryosuke Mashiko, Nelson Ooi, Ekin Gunes Ozaktas, Taewon Park, Jason Saunders, Samantha van Rijs

## Publications

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### PUBLICATIONS

- **Three-wave interaction grating coupler with the sub-decibel insertion loss at normal incidence** *OPTICA*  
Valdez, C. G., Bongarz, S. A., Kroo, A. R., Miller, A. J., Digonnet, M. J. F., Miller, D. A. B., Solgaard, O.  
2026; 13 (2): 180-187
- **On-Chip Laser-Driven Free-Electron Spin Polarizer** *PHYSICAL REVIEW LETTERS*  
Woodahl, C., Murillo, M., Roques-Carmes, C., Karnieli, A., Miller, D. A. B., Solgaard, O.  
2026; 136 (6)
- **On-Chip Laser-Driven Free-Electron Spin Polarizer.** *Physical review letters*  
Woodahl, C., Murillo, M., Roques-Carmes, C., Karnieli, A., Miller, D. A., Solgaard, O.  
2026; 136 (6): 063802
- **Universal programmable and self-configuring optical filter** *OPTICA*  
Miller, D. A. B., Roques-carmes, C., Valdez, C. G., Kroo, A. R., Vlk, M., Fan, S., Solgaard, O.  
2025; 12 (9): 1417-1426
- **High-contrast nulling in photonic meshes through architectural redundancy** *OPTICS LETTERS*  
Valdez, C. G., Sun, Z., Kroo, A. R., Miller, D. A. B., Solgaard, O.  
2025; 50 (11): 3660-3663
- **Leveraging Architectural Redundancy for High Contrast Nulling with Photonic Meshes**  
Valdez, C. G., Kroo, A. R., Sun, Z., Miller, D. A. B., Solgaard, O., IEEE  
IEEE.2025
- **Enhancement of reactive oxygen species production by ultra-short electron pulses.** *Royal Society open science*  
Tye, J., Solgaard, O., England, R. J., Trapp, J. V., Fielding, A., Brown, C. P.  
2024; 11 (11): 240898
- **Moth-eye anti-reflection structures in silicon for Long Wave IR applications** *JOURNAL OF MODERN OPTICS*  
Papatzacos, P., Broaddus, P., Solgaard, O., Akram, M., Ohlckers, P.  
2024
- **Coupled Mode Design of Low-Loss Electromechanical Phase Shifters** *MICRO-SWITZERLAND*  
Abebe, N. S., Pai, S., Hwang, R. L., Broaddus, P., Miao, Y., Solgaard, O.  
2024; 4 (2): 334-347
- **High-efficiency vertically emitting coupler facilitated by three wave interaction gratings.** *Optics letters*  
Valdez, C. G., Pai, S., Broaddus, P., Solgaard, O.  
2024; 49 (9): 2373-2376
- **Subrelativistic Alternating Phase Focusing Dielectric Laser Accelerators.** *Physical review letters*  
Broaddus, P., Egenolf, T., Black, D. S., Murillo, M., Woodahl, C., Miao, Y., Niedermayer, U., Byer, R. L., Leedle, K. J., Solgaard, O.  
2024; 132 (8): 085001
- **Tunable Directional Couplers for High Contrast Optical Meshes**  
Abebe, N. S., Pai, S., Hwang, R. L., Broaddus, P., Miao, Y., Solgaard, O., IEEE  
IEEE.2024
- **AstroPIC: Near-Infrared photonic integrated circuit coronagraph architecture for the Habitable Worlds Observatory**  
Sirbu, D., Belikov, R., Fogarty, K., Valdez, C., Sun, Z., Kroo, A., Solgaard, O., Miller, D. A. B., Guyon, O.  
edited by Matsuura, S., Perrin, M. D., Coyle, L. E.  
SPIE-INT SOC OPTICAL ENGINEERING.2024
- **Scalable low-latency optical phase sensor array** *OPTICA*  
Sun, Z., Pai, S., Valdez, C., Milanizadeh, M., Melloni, A., Morichetti, F., Miller, D. A. B., Solgaard, O.

2023; 10 (9): 1165-1172

- **Experimental evaluation of digitally verifiable photonic computing for blockchain and cryptocurrency** *OPTICA*  
Pai, S., Park, T., Ball, M., Penkovsky, B., Dubrovsky, M., Abebe, N., Milanizadeh, M., Morichetti, F., Melloni, A., Fan, S., Solgaard, O.  
2023; 10 (5): 552-560
- **Experimentally realized in situ backpropagation for deep learning in photonic neural networks.** *Science (New York, N.Y.)*  
Pai, S., Sun, Z., Hughes, T. W., Park, T., Bartlett, B., Williamson, I. A., Minkov, M., Milanizadeh, M., Abebe, N., Morichetti, F., Melloni, A., Fan, S., Solgaard, et al  
2023; 380 (6643): 398-404
- **Power monitoring in a feedforward photonic network using two output detectors.** *Nanophotonics (Berlin, Germany)*  
Pai, S., Valdez, C., Park, T., Milanizadeh, M., Morichetti, F., Melloni, A., Fan, S., Solgaard, O., Miller, D. A.  
2023; 12 (5): 985-991
- **Power monitoring in a feedforward photonic network using two output detectors** *NANOPHOTONICS*  
Pai, S., Valdez, C., Park, T., Milanizadeh, M., Morichetti, F., Melloni, A., Fan, S., Solgaard, O., Miller, D. A. B.  
2023
- **Integrated Amplitude and Phase Monitor for Micro-Actuators.** *Micromachines*  
Manosalvas-Kjono, S. N., Quan, R., Solgaard, O.  
2022; 13 (8)
- **Immersion graded index optics: theory, design, and prototypes.** *Microsystems & nanoengineering*  
Vaidya, N., Solgaard, O.  
2022; 8: 69
- **Acoustic Localization With an Optical Fiber Silicon Microphone System** *IEEE SENSORS JOURNAL*  
Lorenzo, S., Solgaard, O.  
2022; 22 (10): 9408-9416
- **High gradient silicon carbide immersion lens ultrafast electron sources** *JOURNAL OF APPLIED PHYSICS*  
Leedle, K. J., Niedermayer, U., Skaer, E., Urbanek, K., Miao, Y., Broaddus, P., Solgaard, O., Byer, R. L.  
2022; 131 (13)
- **Quantum Nature of Dielectric Laser Accelerators** *PHYSICAL REVIEW X*  
Adiv, Y., Wang, K., Dahan, R., Broaddus, P., Miao, Y., Black, D., Leedle, K., Byer, R. L., Solgaard, O., England, R., Kaminer, I.  
2021; 11 (4)
- **Thermally-Compensated Optical Fiber Silicon Sensor Platform** *IEEE SENSORS JOURNAL*  
Lorenzo, S., Kroo, A., Wong, Y., Solgaard, O.  
2021; 21 (21): 24121-24128
- **Electron Pulse Compression with Optical Beat Note.** *Physical review letters*  
Zhao, Z., Leedle, K. J., Black, D. S., Solgaard, O., Byer, R. L., Fan, S.  
2021; 127 (16): 164802
- **Electron Pulse Compression with Optical Beat Note** *PHYSICAL REVIEW LETTERS*  
Zhao, Z., Leedle, K. J., Black, D. S., Solgaard, O., Byer, R. L., Fan, S.  
2021; 127 (16)
- **Resonant scanning design and control for fast spatial sampling.** *Scientific reports*  
Sun, Z., Quan, R., Solgaard, O.  
2021; 11 (1): 20011
- **Low-Energy-Spread Attosecond Bunching and Coherent Electron Acceleration in Dielectric Nanostructures** *PHYSICAL REVIEW APPLIED*  
Niedermayer, U., Black, D. S., Leedle, K. J., Miao, Y., Byer, R. L., Solgaard, O.  
2021; 15 (2)
- **Optical Fiber Photonic Crystal Hydrophone for Cellular Acoustic Sensing** *IEEE ACCESS*  
Lorenzo, S., Wong, Y., Solgaard, O.

2021; 9: 42305–13

- **Optical Fiber Photonic Crystal Hydrophone for Acoustic Bio-Sensing**  
Lorenzo, S., Wong, Y., Solgaard, O., IEEE  
IEEE.2021
- **MEMS Photonic Networks For Parallelized Matrix Multiplication Using Wavelength-Division Multiplexing**  
Pai, S., Abebe, N., Hwang, R. L., Miller, D. A. B., Solgaard, O., IEEE  
IEEE.2021
- **Wavelength-Division Multiplexed Optical Cryptocurrency**  
Pai, S., Abebe, N., Dubrovsky, M., Hwang, R. L., Karpov, M., Penkovsky, B., Miller, D. A. B., Solgaard, O., IEEE  
IEEE.2021
- **Novel Materials-based Laser Acceleration**  
Deng, H., Leedle, K. J., Miao, Y., Black, D. S., Urbanek, K., McNeur, J., Kozak, M., Ceballos, A., Hommelhoff, P., Solgaard, O., Byer, R. L., Harris, J. S., IEEE  
IEEE.2021
- **Fast Spatial Sampling with Phase Controlled Resonant Scanner**  
Sun, Z., Quan, R., Solgaard, O., IEEE  
IEEE.2021
- **Operating modes of dual-grating dielectric laser accelerators** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*  
Black, D. S., Zhao, Z., Leedle, K. J., Miao, Y., Byer, R. L., Fan, S., Solgaard, O.  
2020; 23 (11)
- **Conjugated MEMS Phased Arrays for Large Field of View Random Access Scanning** *IEEE PHOTONICS TECHNOLOGY LETTERS*  
Ashida, Y., Hamann, S., Landry, J., Solgaard, O.  
2020; 32 (20): 1291–94
- **Design of a multichannel photonic crystal dielectric laser accelerator** *PHOTONICS RESEARCH*  
Zhao, Z., Black, D. S., England, R., Hughes, T. W., Miao, Y., Solgaard, O., Byer, R. L., Fan, S.  
2020; 8 (10): 1586–98
- **Optical Fiber-Facet Multiplexed Monolithic Silicon Pressure Sensors**  
Lorenzo, S., Solgaard, O.  
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.2020: 10598–606
- **Parallel Programming of an Arbitrary Feedforward Photonic Network** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*  
Pai, S., Williamson, I. A. D., Hughes, T. W., Minkov, M., Solgaard, O., Fan, S., Miller, D. A. B.  
2020; 26 (5)
- **Self-aligned concentrating immersion-lens arrays for patterning and efficiency recovery in scaffold-reinforced perovskite solar cells** *APPLIED MATERIALS TODAY*  
Printz, A. D., Zhao, O., Hamann, S., Rolston, N., Solgaard, O., Dauskardt, R. H.  
2020; 20
- **Random Access Cylindrical Lensing and Beam Steering Using a High-Speed Linear Phased Array** *IEEE PHOTONICS TECHNOLOGY LETTERS*  
Landry, J. R., Hamann, S. S., Solgaard, O.  
2020; 32 (14): 859–62
- **SPADnet: deep RGB-SPAD sensor fusion assisted by monocular depth estimation** *OPTICS EXPRESS*  
Sun, Z., Lindell, D. B., Solgaard, O., Wetzstein, G.  
2020; 28 (10): 14948–62
- **Software-Based Phase Control, Video-Rate Imaging, and Real-Time Mosaicing With a Lissajous-Scanned Confocal Microscope** *IEEE TRANSACTIONS ON MEDICAL IMAGING*  
Loewke, N. O., Qiu, Z., Mandella, M. J., Ertsey, R., Loewke, A., Gunaydin, L. A., Rosenthal, E. L., Contag, C. H., Solgaard, O.  
2020; 39 (4): 1127–37

- **Optical Fiber-Tip Monolithic Silicon Pressure Sensors** *IEEE SENSORS JOURNAL*  
Lorenzo, S., Wong, Y., Solgaard, O.  
2020; 20 (5): 2476–84
- **Gallium Oxide for High-Power Optical Applications** *ADVANCED OPTICAL MATERIALS*  
Deng, H., Leedle, K. J., Miao, Y., Black, D. S., Urbanek, K. E., McNeur, J., Kozak, M., Ceballos, A., Hommelhoff, P., Solgaard, O., Byer, R. L., Harris, J. S.  
2020
- **Surface treatments of dielectric laser accelerators for increased laser-induced damage threshold** *OPTICS LETTERS*  
Miao, Y., Black, D. S., Leedle, K. J., Zhao, Z., Deng, H., Ceballos, A., Byer, R. L., Harris, J. S., Solgaard, O.  
2020; 45 (2): 391–94
- **On-chip integrated laser-driven particle accelerator.** *Science (New York, N.Y.)*  
Sapra, N. V., Yang, K. Y., Vercruyssen, D. n., Leedle, K. J., Black, D. S., England, R. J., Su, L. n., Trivedi, R. n., Miao, Y. n., Solgaard, O. n., Byer, R. L., Vučković, J. n.  
2020; 367 (6473): 79–83
- **Broadband Optical Fiber-Facet Silicon Pressure Sensor**  
Lorenzo, S., Wong, Y., Solgaard, O., IEEE  
IEEE.2020
- **Design of a multi-channel photonic crystal dielectric laser accelerator**  
Zhao, Z., Black, D. S., England, R., Hughes, T. W., Miao, Y., Solgaard, O., Byer, R. L., Fan, S., IEEE  
IEEE.2020
- **High-speed axially swept light sheet microscopy using a linear MEMS phased array for isotropic resolution.** *Journal of biomedical optics*  
Landry, J. n., Hamann, S. n., Solgaard, O. n.  
2020; 25 (10)
- **Broadband Optical Fiber-Facet Silicon Pressure Sensor**  
Lorenzo, S., Wong, Y., Solgaard, O., IEEE  
IEEE.2020
- **Design of a multi-channel photonic crystal dielectric laser accelerator**  
Zhao, Z., Black, D. S., England, R., Hughes, T. W., Miao, Y., Solgaard, O., Byer, R. L., Fan, S., IEEE  
IEEE.2020
- **Net Acceleration and Direct Measurement of Attosecond Electron Pulses in a Silicon Dielectric Laser Accelerator.** *Physical review letters*  
Black, D. S., Niedermayer, U., Miao, Y., Zhao, Z., Solgaard, O., Byer, R. L., Leedle, K. J.  
2019; 123 (26): 264802
- **Net Acceleration and Direct Measurement of Attosecond Electron Pulses in a Silicon Dielectric Laser Accelerator** *PHYSICAL REVIEW LETTERS*  
Black, D. S., Niedermayer, U., Miao, Y., Zhao, Z., Solgaard, O., Byer, R. L., Leedle, K. J.  
2019; 123 (26)
- **Extended Design Space of Silicon-on-Nothing MEMS** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Wong, Y., Lorenzo, S., Miao, Y., Bregman, J., Solgaard, O.  
2019; 28 (5): 850–58
- **Matrix Optimization on Universal Unitary Photonic Devices** *PHYSICAL REVIEW APPLIED*  
Pai, S., Bartlett, B., Solgaard, O., Miller, D. A. B.  
2019; 11 (6)
- **Tunable structured illumination light sheet microscopy for background rejection and imaging depth in minimally processed tissues.** *Journal of biomedical optics*  
Landry, J. R., Itoh, R., Li, J. M., Hamann, S. S., Mandella, M., Contag, C. H., Solgaard, O.  
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- **Tunable structured illumination light sheet microscopy for background rejection and imaging depth in minimally processed tissues** *JOURNAL OF BIOMEDICAL OPTICS*  
Landry, J. R., Itoh, R., Li, J. M., Hamann, S. S., Mandella, M., Contag, C. H., Solgaard, O.  
2019; 24 (4)
- **Laser-Driven Electron Lensing in Silicon Microstructures.** *Physical review letters*  
Black, D. S., Leedle, K. J., Miao, Y., Niedermayer, U., Byer, R. L., Solgaard, O.  
2019; 122 (10): 104801
- **Laser-Driven Electron Lensing in Silicon Microstructures** *PHYSICAL REVIEW LETTERS*  
Black, D. S., Leedle, K. J., Miao, Y., Niedermayer, U., Byer, R. L., Solgaard, O., ACHIP Collaboration  
2019; 122 (10)
- **MONOLITHIC SILICON-ON-NOTHING FIBER-BASED PRESSURE SENSORS**  
Lorenzo, S., Wong, Y., Solgaard, O., IEEE  
IEEE.2019: 1893–96
- **Linear Micromechanical Phased Arrays**  
Solgaard, O., Hamann, S. S., Landry, J. R., IEEE  
IEEE.2019: 174–75
- **High-speed random access optical scanning using a linear MEMS phased array** *OPTICS LETTERS*  
Hamann, S., Ceballos, A., Landry, J., Solgaard, O.  
2018; 43 (21): 5455–58
- **Design and Fabrication of Monolithic Photonic Crystal Fiber Acoustic Sensor**  
Wong, Y., Lorenzo, S., Solgaard, O.  
IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.2018: 7826–32
- **Design and Fabrication of Monolithic Photonic Crystal Fiber Acoustic Sensor.** *IEEE sensors journal*  
Wong, Y. P., Lorenzo, S., Solgaard, O.  
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- **3D printed optics with nanometer scale surface roughness** *MICROSYSTEMS & NANOENGINEERING*  
Vaidya, N., Solgaard, O.  
2018; 4
- **3D printed optics with nanometer scale surface roughness.** *Microsystems & nanoengineering*  
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2018; 4: 18
- **Elements of a dielectric laser accelerator** *OPTICA*  
McNeur, J., Kozak, M., Schoenenberger, N., Leedle, K. J., Deng, H., Ceballos, A., Hoogland, H., Ruehl, A., Hartl, I., Holzwarth, R., Solgaard, O., Harris, J. S., Byer, et al  
2018; 5 (6): 687–90
- **Large negative and positive optical Goos-Hanchen shift in photonic crystals** *OPTICS LETTERS*  
Wong, Y., Miao, Y., Skarda, J., Solgaard, O.  
2018; 43 (12): 2803–6
- **On-Chip Laser-Power Delivery System for Dielectric Laser Accelerators** *PHYSICAL REVIEW APPLIED*  
Hughes, T. W., Tan, S., Zhao, Z., Sapra, N. V., Leedle, K. J., Deng, H., Miao, Y., Black, D. S., Solgaard, O., Harris, J. S., Vuckovic, J., Byer, R. L., Fan, et al  
2018; 9 (5)
- **Phase-dependent laser acceleration of electrons with symmetrically driven silicon dual pillar gratings** *OPTICS LETTERS*  
Leedle, K. J., Black, D. S., Miao, Y., Urbanek, K. E., Ceballos, A., Deng, H., Harris, J. S., Solgaard, O., Byer, R. L.  
2018; 43 (9): 2181–84
- **Automated Cell Segmentation for Quantitative Phase Microscopy** *IEEE TRANSACTIONS ON MEDICAL IMAGING*

- Loewke, N. O., Pai, S., Cordeiro, C., Black, D., King, B. L., Contag, C. H., Chen, B., Baer, T. M., Solgaard, O.  
2018; 37 (4): 929–40
- **Time-multiplexed light field synthesis via factored Wigner distribution function** *OPTICS LETTERS*  
Hamann, S., Shi, L., Solgaard, O., Wetzstein, G.  
2018; 43 (3): 599–602
  - **Variable Focusing and Steering Using High Speed MEMS Phased Array**  
Hamann, S., Solgaard, O., IEEE  
IEEE.2018: 232–33
  - **Optophysiology of cardiomyocytes: characterizing cellular motion with quantitative phase imaging.** *Biomedical optics express*  
Cordeiro, C. n., Abilez, O. J., Goetz, G. n., Gupta, T. n., Zhuge, Y. n., Solgaard, O. n., Palanker, D. n.  
2017; 8 (10): 4652–62
  - **Monolithic Photonic Crystal Fiber Acoustic Sensor**  
Wong, Y., Solgaard, O., IEEE  
IEEE.2017: 1113–15
  - **MONOLITHIC SILICON-ON-NOTHING PHOTONIC CRYSTAL PRESSURE SENSOR**  
Wong, Y., Bregman, J., Solgaard, O., IEEE  
IEEE.2017: 1963–66
  - **Characterizing Cardiomyocytes Motion with Quantitative Phase Imaging**  
Cordeiro, C., Abilez, O., Gupta, T., Goetz, G., Solgaard, O., Palanker, D., IEEE  
IEEE.2017
  - **Light sheet fluorescence microscopy using high-speed structured and pivoting illumination** *OPTICS LETTERS*  
Itoh, R., Landry, J. R., Hamann, S. S., Solgaard, O.  
2016; 41 (21): 5015-5018
  - **Haltere-Like Optoelectromechanical Gyroscope** *IEEE SENSORS JOURNAL*  
Kilic, O., Ra, H., Akkaya, O. C., Digonnet, M. J., Solgaard, O.  
2016; 16 (11): 4274-4280
  - **Design and fabrication of silicon-tessellated structures for monocentric imagers.** *Microsystems & nanoengineering*  
Wu, T., Hamann, S. S., Ceballos, A. C., Chang, C. E., Solgaard, O., Howe, R. T.  
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  - **Fast Stiffness Mapping of Cells Using High-Bandwidth Atomic Force Microscopy.** *ACS nano*  
Wang, A., Vijayraghavan, K., Solgaard, O., Butte, M. J.  
2016; 10 (1): 257-264
  - **Photonic-Crystal-Based Fiber Hydrophone With Sub-100  $\mu$  Pa/root Hz Pressure Resolution** *IEEE PHOTONICS TECHNOLOGY LETTERS*  
Jan, C., Jo, W., Digonnet, M. J., Solgaard, O.  
2016; 28 (2): 123-126
  - **Metal-insulator-metal waveguides for particle trapping and separation** *LAB ON A CHIP*  
Khan, S. A., Chang, C., Zaidi, Z., Shin, W., Shi, Y., Bowden, A. K., Solgaard, O.  
2016; 16 (12): 2302-2308
  - **Dynamic and social behaviors of human pluripotent stem cells** *SCIENTIFIC REPORTS*  
Phadnis, S. M., Loewke, N. O., Dimov, I. K., Pai, S., Amwake, C. E., Solgaard, O., Baer, T. M., Chen, B., Pera, R. A.  
2015; 5
  - **Dielectric laser acceleration of sub-100 keV electrons with silicon dual-pillar grating structures** *OPTICS LETTERS*  
Leedle, K. J., Ceballos, A., Deng, H., Solgaard, O., Pease, R. F., Byer, R. L., Harris, J. S.  
2015; 40 (18): 4344-4347
  - **Single-Crystal Silicon Photonic-Crystal Fiber-Tip Pressure Sensors** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*  
Wu, X., Jan, C., Solgaard, O.

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- **Optical separation of heterogeneous size distributions of microparticles on silicon nitride strip waveguides** *OPTICS EXPRESS*  
Khan, S. A., Shi, Y., Chang, C., Jan, C., Fan, S., Ellerbee, A. K., Solgaard, O.  
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- **Dynamic and social behaviors of human pluripotent stem cells.** *Scientific reports*  
Phadnis, S. M., Loewke, N. O., Dimov, I. K., Pai, S., Amwake, C. E., Solgaard, O., Baer, T. M., Chen, B., Reijo Pera, R. A.  
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- **Design of resonant mirrors with negative group delay** *OPTICS EXPRESS*  
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Solgaard, O., Godil, A. A., Howe, R. T., Lee, L. P., Peter, Y., Zappe, H.  
2014; 23 (3): 517-538
- **Silicon buried gratings for dielectric laser electron accelerators** *APPLIED PHYSICS LETTERS*  
Chang, C., Solgaard, O.  
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- **Digital quadrature amplitude modulation with optimized non-rectangular constellations for 100 Gb/s transmission by a directly-modulated laser** *OPTICS EXPRESS*  
Ling, W. A., Lyubomirsky, I., Solgaard, O.  
2014; 22 (9): 10844-10857
- **Double-Layer Silicon Photonic Crystal Fiber-Tip Temperature Sensors** *IEEE PHOTONICS TECHNOLOGY LETTERS*  
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