

Stanford



Olav Solgaard

Professor of Electrical Engineering

 Curriculum Vitae available Online

Bio

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)

PROFESSIONAL EDUCATION

- PhD, Stanford (1992)

PATENTS

- M.J.F. Dignonnet, 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

Teaching

COURSES

2019-20

- Introduction to Electromagnetics and Its Applications: EE 42, ENGR 42 (Win)
- Introduction to Micro and Nano Electromechanical Systems: ENGR 240 (Aut)

2018-19

- Introduction to Electromagnetics and Its Applications: EE 42, ENGR 42 (Win)
- Modern Optics: EE 236A (Aut)
- Photonics Laboratory: EE 234 (Spr)

2017-18

- Introduction to Electromagnetics and Its Applications: EE 42, ENGR 42 (Win)
- Modern Optics: EE 236A (Aut)

2016-17

- Introduction to Electromagnetics and Its Applications: EE 42 (Win)
- Photonics Laboratory: EE 234 (Aut)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Kevin Boyle, Brandon Buscaino, Amelia Christensen, Amy Fritz, Behrad Habib Afshar, Hayato Ikoma, Marc Jankowski, Jenny Knall, Thaibao Phan

Doctoral Dissertation Advisor (AC)

Nathnael Abebe, Dylan Black, Payton Broaddus, Simon Lorenzo, Yu Miao, Sunil Pai, Zhanghao Sun

Orals Evaluator

Neil Sapra

Doctoral Dissertation Co-Advisor (AC)

Chris Sarabalis

Doctoral (Program)

Nathnael Abebe, Dylan Black, Payton Broaddus, Amelia Christensen, Behrad Habib Afshar, David Heydari, Alissa Ling, Crystal Nattoo, Katie Neilson, Sunil Pai, Thaibao Phan, Zhanghao Sun, Li Tao

Publications

PUBLICATIONS

- **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., Vercruyse, D., Leedle, K. J., Black, D. S., England, R. J., Su, L., Trivedi, R., Miao, Y., Solgaard, O., Byer, R. L., Vučković, J.
2020; 367 (6473): 79–83
- **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. 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.
2019; 24 (4): 1–6
- **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.
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., ACHIP Collaboration
2019; 122 (10)
- **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
- **Linear Micromechanical Phased Arrays**
Solgaard, O., Hamann, S. S., Landry, J. R., IEEE
IEEE.2019: 174–75
- **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
- **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
- **3D printed optics with nanometer scale surface roughness** *MICROSYSTEMS & NANOENGINEERING*
Vaidya, N., Solgaard, O.
2018; 4
- **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
 - **3D printed optics with nanometer scale surface roughness.** *Microsystems & nanoengineering*
Vaidya, N., Solgaard, O.
2018; 4: 18
 - **Design and Fabrication of Monolithic Photonic Crystal Fiber Acoustic Sensor.** *IEEE sensors journal*
Wong, Y. P., Lorenzo, S., Solgaard, O.
2018; 18 (19): 7826–32
 - **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., Abilez, O. J., Goetz, G., Gupta, T., Zhuge, Y., Solgaard, O., Palanker, D.
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., Dignonnet, M. J., Solgaard, O.
2016; 16 (11): 4274-4280
 - **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 $\mu\text{Pa}/\sqrt{\text{Hz}}$ Pressure Resolution** *IEEE PHOTONICS TECHNOLOGY LETTERS*
Jan, C., Jo, W., Dignonnet, M. J., Solgaard, O.

2016; 28 (2): 123-126

- **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.
2016; 2: 16019
- **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.
2015; 24 (4): 968-975
- **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.
2015; 23 (7): 8855-8866
- **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.
2015; 5: 14209-?
- **Design of resonant mirrors with negative group delay** *OPTICS EXPRESS*
Gellineau, A., Wong, Y., Solgaard, O.
2014; 22 (23): 29213-29222
- **Optical MEMS: From Micromirrors to Complex Systems** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*
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.
2014; 104 (18)
- **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*
Park, B., Jung, I. W., Provine, J., Gellineau, A., Landry, J., Howe, R. T., Solgaard, O.
2014; 26 (9): 900-903
- **Monolithic silicon waveguides in bulk silicon wafers** *Conference on Next-Generation Optical Networks for Data Centers and Short-Reach Links*
Chang, C., Solgaard, O.
SPIE-INT SOC OPTICAL ENGINEERING.2014
- **Detection of single nano-defects in photonic crystals between crossed polarizers** *OPTICS EXPRESS*
Grepstad, J. O., Kaspar, P., Johansen, I., Solgaard, O., Sudbo, A.
2013; 21 (25): 31375-31389
- **Miniature fiber acoustic sensors using a photonic-crystal membrane** *OPTICAL FIBER TECHNOLOGY*
Jo, W., Akkaya, O. C., Solgaard, O., Digonnet, M. J.

2013; 19 (6): 785-792

- **Engineering-reflected phase in Fabry-Perot sensors with resonant mirrors** *OPTICS LETTERS*
Gellineau, A., Wong, Y., Solgaard, O.
2013; 38 (23): 4992-4995
- **Fano resonances in integrated silicon Bragg reflectors for sensing applications** *OPTICS EXPRESS*
Chang, C., Solgaard, O.
2013; 21 (22): 27209-27218
- **Finite-size limitations on Quality Factor of guided resonance modes in 2D Photonic Crystals** *OPTICS EXPRESS*
Grepstad, J. O., Greve, M. M., Holst, B., Johansen, I., Solgaard, O., Sudbo, A.
2013; 21 (20): 23640-23654
- **Time-Division-Multiplexed Interferometric Sensor Arrays** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
Akkaya, O. C., Digonnet, M. J., Kino, G. S., Solgaard, O.
2013; 31 (16): 3001-3008
- **Short-cavity multimode fiber-tip Fabry-Perot sensors** *OPTICS EXPRESS*
Wu, X., Solgaard, O.
2013; 21 (12): 14487-14499
- **Two-axis MEMS scanner with transfer-printed high-reflectivity, broadband monolithic silicon photonic crystal mirrors** *OPTICS EXPRESS*
Jeong, J., Park, B., Keum, H., Kim, S., Rogers, J. A., Solgaard, O.
2013; 21 (11): 13800-13809
- **High-Bandwidth AFM Probes for Imaging in Air and Fluid** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*
Vijayraghavan, K., Gellineau, A. A., Wang, A., Butte, M. J., Melosh, N. A., Solgaard, O.
2013; 22 (3): 603-612
- **Measurement of elastic properties in fluid using high bandwidth atomic force microscope probes** *APPLIED PHYSICS LETTERS*
Vijayraghavan, K., Wang, A., Solgaard, O., Butte, M. J., Melosh, N. A.
2013; 102 (10)
- **MONOLITHIC SILICON WAVEGUIDES IN STANDARD SILICON** *IEEE MICRO*
Chang, C., Solgaard, O.
2013; 33 (1): 32-40
- **Modeling and Demonstration of Thermally Stable High-Sensitivity Reproducible Acoustic Sensors** *Journal of Lightwave Technology*
Akkaya, O., C., Digonnet, M., J.F., Kino, G., S., Solgaard, O.
2013; 31 (16): 2701-2708
- **Fano resonances in integrated silicon Bragg reflectors for sensing applications** *Optics Express*
Chang, C., M., Solgaard, O.
2013; 21 (22): 2720927219
- **Single nano-particle sensing exploiting crossed polarizers to improve the signal-to-noise ratio**
Grepstad, J., O., Kaspar, P., Solgaard, O., Johansen, I., R., Sudbø, A., S.
2013
- **High-Reflectivity, Broadband Monolithic Silicon Photonic Crystal Mirrors on Two-Axis MEMS Scanner by Transfer-Printing**
Jeong, J., W., Park, B., Keum, H., Kim, S., Rogers, J., A., Solgaard, O.
2013
- **Engineering-reflected phase in Fabry-Perot sensors with resonant mirrors** *Optics Letters*
Gellineau, A., Wong, Y., P., Solgaard, O.
2013; 38 (23): 4992-4995
- **Detection of single nano-defects in photonic crystals between crossed polarizers** *Optics Express*
Grepstad, J., O., Kaspar, P., Johansen, I., R., Solgaard, O., Sudbø, A.

2013; 21 (25): 31375–31389

- **Monolithic Photonic Crystal-Based Fiber-Tip Fabry-Pérot Static Pressure Sensor**
Wu, X., Jan, C., Solgaard, O.
2013
- **Short-cavity multimode fiber-tip Fabry-Pérot sensors** *Optics Express*
Wu, X., Solgaard, O.
2013; 21 (6): 14487–14499
- **Double-layer silicon waveguides in standard silicon for 3D photonics**
Chang, C., M., Solgaard, O.
2013
- **Modeling and Demonstration of Thermally Stable High-Sensitivity Reproducible Acoustic Sensors** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*
Akkaya, O. C., Kilic, O., Digonnet, M. J., Kino, G. S., Solgaard, O.
2012; 21 (6): 1347-1356
- **Split-Frame Gimbaled Two-Dimensional MEMS Scanner for Miniature Dual-Axis Confocal Microendoscopes Fabricated by Front-Side Processing** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*
Jeong, J., Kim, S., Solgaard, O.
2012; 21 (2): 308-315
- **Photonic-crystal membranes for optical detection of single nano-particles, designed for biosensor application** *OPTICS EXPRESS*
Grepstad, J. O., Kaspar, P., Solgaard, O., Johansen, I., Sudbo, A. S.
2012; 20 (7): 7954-7965
- **Reflectivity and polarization dependence of polysilicon single-film broadband photonic crystal micro-mirrors** *OPTICS EXPRESS*
Kim, S., Hadzialic, S., Sudbo, A. S., Solgaard, O.
2012; 20 (6): 6306-6315
- **In vivo near-infrared dual-axis confocal microendoscopy in the human lower gastrointestinal tract** *JOURNAL OF BIOMEDICAL OPTICS*
Piyawattanametha, W., Ra, H., Qiu, Z., Friedland, S., Liu, J. T., Loewke, K., Kino, G. S., Solgaard, O., Wang, T. D., Mandella, M. J., Contag, C. H.
2012; 17 (2)
- **Tapping-mode force spectroscopy using cantilevers with interferometric high-bandwidth force sensors** *APPLIED PHYSICS LETTERS*
Sarioglu, A. F., Magonov, S., Solgaard, O.
2012; 100 (5)
- **Overcoming Multimodal Effects in Optical Fiber Tip CMOS-Compatible Fabry-Perot Sensors**
Wu, X., Solgaard, O.
2012
- **Enhanced scattering from nano-particles trapped in photonic crystal membranes** *International Conference on Optical MEMS and Nanophotonics (OMN)*
Grepstad, J. O., Kaspar, P., Solgaard, O., Johansen, I., Sudbo, A. S.
IEEE.2012: 21–22
- **Asymmetric Fano Lineshapes in Integrated Silicon Bragg Reflectors** *Conference on Lasers and Electro-Optics (CLEO)*
Chang, C., Solgaard, O.
IEEE.2012
- **9.6-mm diameter femtosecond laser microsurgery probe** *Conference on Lasers and Electro-Optics (CLEO)*
Hoy, C. L., Ferhanoglu, O., Yildirim, M., Piyawattanametha, W., Ra, H., Solgaard, O., Ben-Yakar, A.
IEEE.2012
- **Double-Layer Silicon Photonic Crystal Fiber Tip Temperature Sensor** *25th IEEE Photonics Conference (IPC)*
Park, B., Jung, I. W., Provine, J., Howe, R. T., Solgaard, O.
IEEE.2012: 550–551
- **Overcoming Multimodal Effects in Optical Fiber Tip CMOS-Compatible Fabry-Perot Sensors** *Conference on Lasers and Electro-Optics (CLEO)*

Wu, X., Solgaard, O.
IEEE.2012

- **Interdigitated Annular CMUT Arrays for Ultrasound Assisted Delivery of Fluorescent Contrast Agents** *IEEE International Ultrasonics Symposium (IUS)*
Cristman, P., Oralkan, O., Mandella, M., Solgaard, O., Contag, C., Khuri-Yakub, B. T.
IEEE.2012: 96-99
- **Ratiometric Molecular Microscopy: Towards Real-Time Quantitative Delineation of Brain Tumor Margins**
Leigh, S., Y., Wang, D., Chen, Y., Mandella, M., J., Haeberle, H., Solgaard, O.
2012
- **Multifunctional Fiber Sensors Based on Photonic Crystals**
Solgaard, O.
2012
- **Integrated Silicon Photonic Temperature Sensors Based on Bragg Reflectors with Asymmetric Fano Lineshapes**
Chang, C., M., Solgaard, O.
2012
- **Optical imaging system designed for biomolecule detection using photonic crystal membranes**
Grepstad, J., O., Kaspar, P., Solgaard, O., Johansen, I., R., Sudbø, A., S.
2012
- **Asymmetric Fano Lineshapes in Integrated Silicon Bragg Reflectors**
Chang, C., M., Solgaard, O.
2012
- **Double-Layer Silicon Photonic Crystal Fiber Tip Temperature Sensor**
Park, B., Jung, I., W., Provine, J., Howe, R., T., Solgaard, O.
2012
- **9.6mm diameter femtosecond laser microsurgery probe**
Hoy, C., L., Ferhanoglu, O., Yildirim, M., Piyawattanametha, W., Ra, H., Solgaard, O.
2012
- **Photonic Crystal Fiber Tip Sensor for High-Temperature Measurement** *IEEE SENSORS JOURNAL*
Park, B., Provine, J., Jung, I. W., Howe, R. T., Solgaard, O.
2011; 11 (11): 2643-2648
- **Multilayered Monolithic Silicon Photonic Crystals** *IEEE PHOTONICS TECHNOLOGY LETTERS*
Mallick, S. B., Jung, I. W., Meisner, A. M., Provine, J., Howe, R. T., Solgaard, O.
2011; 23 (11): 730-732
- **High-Resolution Nanomechanical Mapping Using Interferometric-Force-Sensing AFM Probes** *JOURNAL OF MICROELECTROMECHANICAL SYSTEMS*
Sarioglu, A. F., Liu, M., Solgaard, O.
2011; 20 (3): 654-664
- **Optical design and imaging performance testing of a 9.6-mm diameter femtosecond laser microsurgery probe** *OPTICS EXPRESS*
Hoy, C. L., Ferhanoglu, O., Yildirim, M., Piyawattanametha, W., Ra, H., Solgaard, O., Ben-Yakar, A.
2011; 19 (11): 10536-10552
- **In Vivo Imaging of Human and Mouse Skin with a Handheld Dual-Axis Confocal Fluorescence Microscope** *JOURNAL OF INVESTIGATIVE DERMATOLOGY*
Ra, H., Piyawattanametha, W., Gonzalez-Gonzalez, E., Mandella, M. J., Kino, G. S., Solgaard, O., Leake, D., Kaspar, R. L., Oro, A., Contag, C. H.
2011; 131 (5): 1061-1066
- **Highly Sensitive Monolithic Silicon Photonic Crystal Fiber Tip Sensor for Simultaneous Measurement of Refractive Index and Temperature** *JOURNAL OF LIGHTWAVE TECHNOLOGY*
Jung, I. W., Park, B., Provine, J., Howe, R. T., Solgaard, O.
2011; 29 (9): 1367-1374

- **Miniature photonic-crystal hydrophone optimized for ocean acoustics** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
Kilic, O., Digonnet, M. J., Kino, G. S., Solgaard, O.
2011; 129 (4): 1837-1850
- **Modeling, design, and analysis of interferometric cantilevers for time-resolved force measurements in tapping-mode atomic force microscopy** *JOURNAL OF APPLIED PHYSICS*
Sarioglu, A. F., Solgaard, O.
2011; 109 (6)
- **High resolution nanomechanical mapping using interferometric-force-sensing AFM probes** *Journal of Microelectromechanical Systems*
Sarioglu, A., F., Lui, M., Solgaard, O.
2011; 20 (3): 654-664
- **Fabry-Perot Fiber Sensors with Reproducible Displacement Sensitivities** *16th International Conference on Optical MEMS and Nanophotonics (OMN)*
Akkaya, O. C., Kilic, O., Digonnet, M. J., Kino, G. S., Solgaard, O.
IEEE.2011: 191-192
- **Double-Layer Silicon Photonic Crystal Fiber Tip Sensor** *16th International Conference on Optical MEMS and Nanophotonics (OMN)*
Park, B., Jung, I. W., Provine, J., Shambat, G., Vuckovic, J., Howe, R. T., Solgaard, O.
IEEE.2011: 97-98
- **3-D MEMS Scanning System For Dual-Axis Confocal Microendoscopy** *16th International Conference on Optical MEMS and Nanophotonics (OMN)*
Jeong, J., Mandella, M. J., Kino, G. S., Contag, C. H., Solgaard, O.
IEEE.2011: 71-72
- **3-D MEMS Scanning System For Dual-Axis Confocal Microendoscopy**
Jeong, J., W., Mandella, M., J., Kino, G., S., Contag, C., H., Solgaard, O.
2011
- **Time-Resolved Tapping-Mode Atomic Force Microscopy** *Scanning Probe Microscopy in Nanoscience and Nanotechnology 2*
Sarioglu, A., F., Solgaard, O.
Springer Verlag.2011: 1
- **Fabry-Perot Fiber Sensors with Reproducible Displacement Sensitivities**
Akkaya, O., C., Kilic, O., Digonnet, M., J.F., Kino, G., S., Solgaard, O.
2011
- **Spot Formation and Scanning Microscopy via Multimode Fibers**
Boucher, K., J., Jan, C., Kahn, J., M., Wilde, J., P., Solgaard, O.
2011
- **Frontside-only processing of 2-D MEMS scanner for miniature dual-axis confocal microendoscopes**
Jeung, J., W., Vaithilingam, S., Solgaard, O.
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