

SELECTED PUBLICATIONS:

Invited papers in refereed journals:

[JI8] Berini, P., Olivieri, A., Chen, C., “Thin Au surface plasmon waveguide Schottky detectors on p-Si,” (IoP) *Nanotechnology, Special Issue: Plasmonics in optoelectronics*, Vol. 23, 444011, 2012

[JI7] Berini, P., “Surface plasmon photodetectors and their applications,” (Wiley-VCH) *Laser & Photonics Reviews*, (review paper), DOI: 10.1002/lpor.201300019

[JI6] Olivieri, A., Akbari, A., Berini, P., “Surface plasmon waveguide Schottky detectors operating near breakdown,” (Wiley-VCH) *Physica Status Solidi - Rapid Research Letters, Special Issue: Plasmonics and Nanophotonics*, Vol. 4, pp. 283-285, 2010

[JI5] Berini, P., “Long-range surface plasmon-polaritons,” (OSA) *Advances in Optics and Photonics*, Vol. 1, pp. 484-588, 2009

[JI4] Berini, P., Buckley, R., “On the convergence and accuracy of numerical mode computations of surface plasmon waveguides,” (ASP) *Journal of Computational and Theoretical Nanoscience, Special issue on Functional Nanophotonics and Nanoelectromagnetics*, Vol. 6, pp. 2040-2053, 2009

[JI3] Degiron, A., Berini, P., Smith, D. R. “Guiding Light with Long-Range Plasmons,” (OSA) *Optics and Photonics News*, Vol. 19, pp. 28-34, 2008

[JI2] Berini, P., “Bulk and surface sensitivities of surface plasmon waveguides,” (IoP) *New Journal of Physics, Focus Issue on Plasmonics*, Vol. 10, 105010, 2008

[JI1] Berini, P., Charbonneau, R., Lahoud, N., “Long-range surface plasmons along membrane-supported metal stripes,” *IEEE Journal of Selected Topics in Quantum Electronics, Special Issue on Surface Plasmon Photonics and Plasmonics*, Vol. 14, pp. 1479-1495, 2008

Papers in refereed journals:

[J98] Alavirad, M., Roy, L., Berini, P., “Optimal Design of Plasmonic Nanodipole Antenna Array for Sensing Applications,” submitted

[J97] Khan, A., Krupin, O., Lisicka-Skrzek, E., Berini, P., “Mach-Zehnder refractometric sensor using long-range surface plasmon waveguides,” submitted

[J96] Krupin, O., Wang, C., Berini, P., “Selective capture of human red blood cells based on blood group using long-range surface plasmon waveguides,” submitted

[J95] Niu, S., Berini, P., Wang, C., Zou, S., "Morphology and Expression Status Investigations of Specific Surface Markers on B-cell Chronic Lymphocytic Leukemia (B-CLL) Cells," (Wiley) Microscopy Research and Technique, in press

[J94] Yuan, J., Hajebifard, A., Berini, P., Zou, S., "Ordered Gold Nanoparticle Arrays on Glass and Their Characterization," (Elsevier) J. Coll. Int. Sci., in press

[J93] Cervantes Tellez, G. A., Hassan, S., Tait, R. N., Berini, P., Gordon, R., "Ultra-flat Symmetric Elliptical Nanohole Arrays in a Gold Film for Ultrasensitive Refractive Index Sensing," (RSC) Lab on a Chip, Vol. 13, pp. 2541-2546, 2013

[J92] Fan, H., Berini, P., "Noise Cancellation in Long-Range Surface Plasmon Dual-Output Mach-Zehnder Interferometers," (IEEE/OSA) Journal of Lightwave Technology, Vol. 31, pp. 2606-2612, 2013

[J91] Alavirad, M., Siadat Mousavi, S., Roy, L., Berini, P., "Schottky-contact plasmonic dipole rectenna for biosensing applications," (OSA) Optics Express, Vol. 21, pp. 4328-4347, 2013; selected for inclusion in the (OSA) Virtual Journal of Biomedical Optics, Vol. 8, Issue 3, April 2013

[J90] Yuan, J., Hao, C., Chen, M., Berini, P., Zou, S., "Lipid re-assembly in asymmetric LB/LS bilayers," (ACS) Langmuir, Vol. 29, pp. 221-227, 2013

[J89] Zand, I., Abrishamian, M. S., Berini, P., "Highly tunable nanoscale Metal-Insulator-Metal Split Ring Core Ring Resonators (SRCRRs)," (OSA) Optics Express, Vol. 21, pp. 79-86, 2013

[J88] Krupin, O., Asiri, H., Wang, C., Tait, R. N., Berini, P., "Biosensing using straight long-range surface plasmon waveguides," (OSA) Optics Express, Vol. 21, pp. 698-709, 2013; selected for inclusion in the (OSA) Virtual Journal of Biomedical Optics, Vol. 8, Issue 2, March 2013

[J87] Fan, H., Berini, P., "Thermo-Optic Characterisation of Long-Range Surface Plasmon Devices in Cytop," (OSA) Applied Optics, Vol. 52, pp. 162-170, 2013

[J86] Banan, B., Hai, M. S., Lisicka-Skrzek, E., Berini, P., Liboiron-Ladouceur, O., "Multi-Channel Transmission Through a Gold Strip Plasmonic Waveguide Embedded in Cytop," (IEEE) Photonics Journal, in press

[J85] Karami Keshmarzi, E., Tait, R. N., Berini, P., "Long-Range Surface Plasmon Single-Mode Laser Concepts," (AIP) Journal of Applied Physics, Vol. 112, 063115, 2012

[J84] Siadat Mousavi, S., Berini, P., McNamara, D., "Periodic plasmonic nanoantennas in a piecewise homogeneous background," (OSA) Optics Express, Vol. 20, pp. 18044-18065, 2012

[J83] Tencer, M., Krupin, O., Tezel, B., Berini, P., "Electrochemistry of Au-SAM-protein stacks," (ECS) Journal of the Electrochemical Society, Vol. 160, pp. H22-H27, 2013

[J82] Rasouli Disfani, M., Abrishamian, M. S., Berini, P., "Teardrop-shaped surface-plasmon resonators," (OSA) Optics Express, Vol. 20, pp. 6472-6477, 2012

[J81] Fan, H., Buckley, R., Berini, P., "Passive Long-Range Surface Plasmon-Polariton Devices in Cytop," (OSA) Applied Optics, Vol. 51, pp. 1459-1467, 2012

[J80] Rasouli Disfani, M., Abrishamian, M. S., Berini, P., "Electromagnetic fields near plasmonic wedges," (OSA) Optics Letters, Vol. 37, pp. 1667-1669, 2012

[J79] Tencer, M., Olivieri, A., Tezel, B., Nie, H.-Y., Berini, P., "Chip-scale electrochemical differentiation of SAM-coated gold features using a probe array," (ECS) Journal of the Electrochemical Society, Vol. 159, pp. J77-J82, 2012

[J78] De Leon, I., Berini, P., "Theory of noise in high-gain surface plasmon-polariton amplifiers incorporating dipolar gain media," (OSA) Optics Express, Vol. 19, pp. 20506-20517, 2011

[J77] Fong, N., Berini, P., Tait, R. N., "Hydrogen Gas Sensor Based on a Membrane-Supported Surface Plasmon Waveguide," (Elsevier) Sensors and Actuators B: Chemical, Vol. 161, pp. 285-291, 2012

[J76] Chiu, C., Lisicka-Skrzek, E., Tait, R. N., Berini, P., "Surface Plasmon Waveguide Devices with T_g-Bonded Cytop Claddings," (AVS/AIP) Journal of Vacuum Science and Technology B - Microelectronics and Nanometer Structures, Vol. 29, 062601, 2011

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[J74] Berini, P., De Leon, I. "Surface plasmon amplifiers and lasers," Nature Photonics, (review paper), Vol. 6, pp. 16-24, 2012

[J73] De Leon, I., Berini, P., "Measuring gain and noise in active long-range surface plasmon-polariton waveguides," (AIP) Review of Scientific Instruments, Vol. 82, 033107, 2011

[J72] De Leon, I., Berini, P., "Spontaneous emission in long-range surface plasmon-polariton amplifiers," (APS) Physical Review B (Rapids), Vol. 83, 081414(R), 2011

[J71] Tencer, M., Nie, H.-Y., Berini, P., "A contact angle and ToF-SIMS study of SAM - thiol interactions on polycrystalline gold," (Elsevier) Applied Surface Science, Vol. 257, pp. 4038-4043, 2011

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- [J69] Scales, C., Breukelaar, I., Charbonneau, R., Berini, P., "Infrared performance of symmetric surface-plasmon waveguide Schottky detectors in Si," (IEEE/OSA) Journal of Lightwave Technology, Vol. 29, pp. 1852-1860, 2011
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- [J64] Scales, C., Berini, P., "Thin-film Schottky barrier photodetector models," IEEE Journal of Quantum Electronics, Vol. 46, pp. 633-643, 2010
- [J63] De Leon, I., Berini, P., "Amplification of long-range surface plasmons by a dipolar gain medium," Nature Photonics, Vol. 4, pp. 382-387, 2010
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- [J61] Chen, C., Berini, P., "Broadside excitation of long-range surface plasmons via grating coupling," (IEEE) Photonics Technology Letters, Vol. 21, pp. 1831-1833, 2009
- [J60] De Leon, I., Berini, P., "Modeling surface plasmon-polariton gain in planar metallic structures," (OSA) Optics Express, Vol. 17, pp. 20191-20202, 2009
- [J59] Scales, C., Breukelaar, I., Berini, P., "Surface-plasmon Schottky contact detector based on a symmetric metal stripe in silicon," (OSA) Optics Letters, Vol. 35, pp. 529-531, 2010

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[J56] Fong, N., Berini, P., Tait, R. N., "Mechanical Properties of Thin Free-Standing CYTOP Membranes," (ASME/IEEE) Journal of Microelectromechanical Systems, Vol. 19, pp. 700-705, 2010

[J55] Daviau, R., Khan, A., Lisicka-Skrzek, E., Tait, R. N., Berini, P., "Fabrication of surface plasmon waveguides and integrated components on Cytop," (Elsevier) Microelectronic Engineering, Vol. 87, pp. 1914-1921, 2010

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[J50] De Leon, I., Berini, P., "Theory of surface plasmon-polariton amplification in planar structures incorporating dipolar gain media," (APS) Physical Review B (Rapid), Vol 78, 161401(R), 2008

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[J48] Charbonneau, R., Berini, P., "Broadside coupling to long-range surface plasmons in metal stripes using prisms, particles and an atomic force microscope probe," (AIP) Review of Scientific Instruments, Vol. 79, 073106, 2008

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- [J46] Charbonneau, R., Lisicka-Shrzek, E., Berini, P., "Broadside coupling to long-range surface plasmons using an angle-cleaved optical fibre," (AIP) *Applied Physics Letters*, Vol. 92, 101102, 2008
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- [J43] Buckley, R., Berini, P. "Figures of merit for 2D surface plasmon waveguides and application to metal stripes," (OSA) *Optics Express*, Vol. 15, pp. 12174-12182, 2007
- [J42] Berini, P. "Air gaps in metal stripe waveguides supporting long-range surface plasmon-polaritons," (AIP) *Journal of Applied Physics*, Vol. 102, 033112, 2007
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- [J39] Mattiussi, G., Lahoud, N., Charbonneau, R., Berini, P., "Fabrication of long-range surface plasmon-polariton waveguides in lithium niobate on silicon," (AVS/AIP) *Journal of Vacuum Science and Technology A - Vacuum, Surfaces, and Films*, Vol. 25, pp. 692-700, 2007
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- [J3] Berini, P., Wu, K., "A Pair of Hybrid Symmetrical Condensed TLM Nodes," IEEE Microwave and Guided Wave Letters, Vol. 4, pp. 244-246, 1994
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- [J1] Berini, P., Desgagné, M., Ghannouchi, F. M., Bosisio, R. G., "An Experimental Study of the Effects of Harmonic Loading on Microwave MESFET Oscillators and Amplifiers," IEEE Transactions on Microwave Theory and Techniques, Vol. 42, pp. 943-950, 1994

Invited papers in refereed conferences:

[CI40] Berini, P., “Long-range surface plasmons and their applications,” 9th International Conference on Optics-photonics Design & Fabrication, Tokyo Japan, February 2014

[CI39] Berini, P., “Active surface plasmon photonics,” WE-Heraeus-Seminar on Active Nanoplasmonics and Metamaterial Dynamics, Bonn Germany, January 2014

[CI38] Berini, P., “Plasmonic Schottky detectors on silicon,” 5th European Optical Society Topical Meeting on Optical Microsystems (OμS'13): Silicon photonics, Capri Italy, September 2013

[CI37] Berini, P., “Active Surface Plasmon Photonics,” Symposium on Nanophotonics & Metamaterials: Ideas for Telecoms and Data Processing, European Conference on Optical Communications 2013, London England, September 2013

[CI36] Berini, P., “Amplification and lasing with surface plasmons,” Progress on Electromagnetics Research Symposium – PIERS 2013, Stockholm, Sweden, August 2013

[CI35] Berini, P., “Surface plasmon photodetectors,” SPIE Optics + Optoelectronics, Prague, Czech Republic, April 2013

[CI34] Berini, P., “Surface plasmon components for parity-time symmetric systems,” Meta 2013 – 4th International Conference on Metamaterials, Photonic Crystals and Plasmonics: Singularities and broken symmetries of systems with gain and loss structures, Sharjah (Dubai), United Arab Emirates, March 2013

[CI33] Berini, P., “Active surface plasmon photonics,” Meta 2013 – 4th International Conference on Metamaterials, Photonic Crystals and Plasmonics: Emerging Technology in plasmonics, Sharjah (Dubai), United Arab Emirates, March 2013

[CI32] Berini, P., “Periodic structures in surface plasmon photonics,” OSA Frontiers in Optics 2012 / APS Laser Science XXVIII, Rochester NY, USA, October 2012

[CI31] Siadat Mousavi, S., Alavirad, M., McNamara, D., Roy, L., Berini, P., “Plasmonic dipole antennae on silicon,” SPIE Optics and Photonics 2012: Nanostructured Thin Films V, San Diego CA, USA, August 2012

[CI30] Krupin, O., Berini, P., “Biosensing using long-range surface plasmon-polariton waveguides” IEEE International Conference on Optical MEMS & Nanophotonics, Banff Canada, August 2012

[CI29] Berini, P., “Amplification and Lasing with Surface Plasmons,” Gordon Research Conference on Plasmonics: Light -Matter Interaction at the Nanoscale, Waterville ME, USA, June 2012[‡]

- [CI28] Krupin, A., Berini, P., “Biosensing using long-range surface plasmon-polariton waveguides,” SPIE Photonics North: Bio-Sensors, Montréal, Canada, June 2012
- [CI27] De Leon, I., Karami, E., Boyd, R. W., Berini, P., “Optical gain and noise in planar surface plasmon amplifiers,” 2012 ENM Meeting - Energy Materials Nanotechnology: Villa conference on plasmonic materials, Orlando USA, April 2012
- [CI26] Krupin, A., Berini, P., “Biosensing using long-range surface plasmon-polaritons,” Meta 2012 – 3rd International Conference on Metamaterials, Photonic Crystals and Plasmonics: Plasmonics and nanophotonics for sensing, imaging, and spectroscopy, Paris France, April 2012
- [CI25] De Leon, I., Berini, P., “Noise in surface plasmon amplifiers,” Meta 2012 – 3rd International Conference on Metamaterials, Photonic Crystals and Plasmonics: Plasmon Amplification and Lasing, Paris France, April 2012
- [CI24] Olivieri, A., Berini, P., “Surface plasmon detectors on silicon,” SPIE Photonics Europe: Nanophotonics, Brussels Belgium, April 2012
- [CI23] Berini, P., “Active surface plasmon photonics,” NanoLight Conference, Benasque, Spain, March 2012[‡]
- [CI22] Berini, P., “Amplification and Lasing with Surface Plasmons: Review of Recent Progress,” OSA Frontiers in Optics 2011 / APS Laser Science XXVII: Optical Metamaterials, San Jose CA, USA, October 2011
- [CI21] Berini, P., “Active and passive surface plasmon photonics,” (OSA) Integrated Photonics Research (IPR), Silicon and Nano Photonics, Toronto, Canada, June 2011
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[C66] Alavirad, M., Siadat Mousavi, S., Roy, L., Berini, P., “Schottky-Contact Plasmonic Rectenna for Biosensing,” Photonics North, Ottawa, Canada, June 2013

[C65] Krupin, O., Wang, C., Berini, P., “Selective biosensing using straight long-range surface plasmon waveguides,” Photonics North, Ottawa, Canada, June 2013

[C64] Hajebifard, A., Yuan, J., Zou, S., Berini, P., “Analysis of Localized Surface Plasmon Resonance in Glass-supported AuNPs with a Hexagonal Pattern,” Photonics North, Ottawa, Canada, June 2013

[C63] Fong, N., Berini, P., Tait, R. N., “Long Range Surface Plasmon Polariton Waveguides For Hydrogen Sensing,” Photonics North, Ottawa, Canada, June 2013

[C62] Yuan, J., Hajebifard, A., Berini, P., Zou, S., “Characterization and Applications of Gold Nanoparticle (AuNP) Arrays on Glass,” 96th Canadian Chemistry Conference, Québec, Canada, May 2013

[C61] Alavirad, M., Siadat Mousavi, S., Roy, L., Berini, P., "Schottky-Contact Plasmonic Rectenna for Biosensing," 6th International Conference on Surface Plasmon Photonics – SPP6, Ottawa, Canada, May 2013

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[C55] Cervantes Tellez, G. A., Hassan, S., Tait, R. N., Berini, P., Gordon, R., "Ultra-flat Symmetric Elliptical Nanohole Arrays in a Gold Film for Ultrasensitive Refractive Index Sensing," 6th International Conference on Surface Plasmon Photonics – SPP6, Ottawa, Canada, May 2013

[C54] Yuan, J., Hajebifard, A., Berini, P., Zou, S., Wang, C., "Surface Plasmon Resonance of Gold Nanoparticle Arrays on Glass," 6th International Conference on Surface Plasmon Photonics – SPP6, Ottawa, Canada, May 2013

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- [C42] Rasouli Disfani, M., Abrishamian, M. S., Berini, P., "Scattering and Resonant Properties of Metallic "Teardrops"," 5th International Conference on Surface Plasmon Photonics – SPP5, Busan, South Korea, May 2011
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Invited papers in workshops:

[W16] Berini, P., “Surface plasmon photodetectors,” Latin American Optics and Photonics Workshop, Cancun Mexico, November 2012[‡]

[W15] Berini, P., “Active surface plasmon photonics,” Latin American Optics and Photonics Workshop, Cancun Mexico, November 2012[‡]

[W14] Berini, P., “Periodic structures in plasmonics,” Photonic crystals: Fundamentals and applications, Ottawa, May 2012

[W13] Berini, P., “Active surface plasmon photonics,” University of Minnesota Nanotechnology Workshop, Minneapolis MI, USA, November 2011[‡]

[W12] Berini, P., “Biosensing using plasmonic waveguides,” Biomedical Optical Sensors - Differentiators for Winning Technologies, OSA Advanced Photonics Congress, Toronto, June 2011

[W11] Berini, P., “Fabrication of surface plasmon devices” Summer Institute in Nanofabrication, Emerging Communications Technology Institute, Toronto, June 2011[‡]

[W10] Berini, P., “Surface plasmons and their applications,” Summer Institute in Nanofabrication, Emerging Communications Technology Institute, Toronto, June 2011[‡]

[W9] Berini, P., “Amplification and Lasing with Surface Plasmon Polaritons,” US Army Research Office, Plasmonics Workshop, Duke University, Raleigh NC, USA, March 2011[‡]

[W8] Berini, P., “Label-Free Optical Biosensors,” International Congress on Biophotonics – ICOB 2, Quebec City, Canada, September 2010; (Interactive roadmapping workshop for thought leaders in research, industry and government on the future of biophotonics)

[W7] Berini, P., De Leon, I., Akbari, A., “Active Surface Plasmon Photonics,” Workshop on Nano-optics, Plasmonics, and Advanced Materials, NIST, Gaithersburg Maryland, April 2010

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[W5] Berini, P., “Surface plasmons in planar structures: Dispersion, attenuation and prospects for application,” Workshop in Dispersion Engineering, Emerging Communications Technology Institute, Toronto, 2008

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[W3] Berini, P., “Integrated optics based on long-range surface plasmons,” 1st uOttawa – Taiwan International Workshop on Nanotechnology, University of Ottawa, Ottawa, 2008

[W2] Berini, P., “Photonic biosensors based on long-range surface plasmons”, OCRI Research Event on Safety and Security, Ottawa, 2007

[W1] Berini, P., “Integrated optics based on surface plasmons: application to biosensors,” OIDA Workshop: Biophotonic Sensors and Fiber Optic Sensor Networks, [American] Optoelectronics Industry Development Association, Fairport, New York, 2005

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[B5] Berini, P., “Surface plasmon-polariton based detectors,” in Encyclopedia of Nanotechnology, Editor-In-Chief Bharat Bhushan, Section Editor (Nano-Optical Devices) Maxim Sukharev, Springer, 2012

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