1. DOMENICO PACIFICI

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RESEARCH INTERESTS

The Pacifici Research Group pursues research projects aimed at manipulating light and surface plasmons at the nanometer scale for integrated bio-sensing, optical communication, and energy-harvesting applications. The following results have been accomplished: (1) *high-throughput biochemical sensors* with integrated plasmonic interferometers for real-time detection of relevant biochemical analytes and biomarkers; (2) *plasmonic concentrators* for broad-band enhanced absorption in thin-film solar cells; (3) *germanium quantum dot photodetectors* with broadband (visible to near infrared), room-temperature optical response, characterized by high responsivity (> 1 A/W) and internal quantum efficiency >100%; (4) *plasmonic interferometry* as a tool to measure the optical functions of dielectric materials; (5) *integrated coherence meter* based on plasmonic interferometry to detect and manipulate the coherence length of electromagnetic fields at sub-wavelength scales; (6) *high-efficiency fluorescence modulation* through nano-apertures with plasmonic interferometry, for biosensing applications; (7) *nano-imprinted silicon nanowire solar cells* with high internal quantum efficiency; (8) *optical bandgap measurement of single- and multi-quantum wells* of amorphous germanium.

2. EDUCATION

BROWN UNIVERSITY, Providence, Rhode Island, US
M.A. in Engineering, *ad eundem* 2017

UNIVERSITY OF CATANIA, Catania, Italy
Ph.D. in Physics, *cum laude* 2004
Dissertation: *Erbium-doped silicon nanoclusters for Microphotonics*, Advisor: Prof. F. Priolo

UNIVERSITY OF CATANIA, Catania, Italy
Laurea in Physics (Master of Science), *summa cum laude* 2000
Dissertation: *Interaction between silicon nanocrystals and erbium ions*, Advisor: Prof. F. Priolo

3. PROFESSIONAL APPOINTMENTS

BROWN UNIVERSITY, Providence, RI
Associate Professor, School of Engineering July 1st, 2016 – present
Associate Professor of Engineering and of Physics July 1st, 2017 – present
Director, Brown Nanofabrication Central Facility (NCF) September 1st, 2016 – present
Assistant Professor, School of Engineering 2009−2016

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGIES, Gaithersburg, MD
CNST Visiting Fellow, Nanofabrication Research Group 2017−present

UNIVERSITY OF MARYLAND, College Park, MD
Visiting Associate Professor, Institute for Research In Electronics & Applied Physics 2017−present

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, CA
Senior Postdoctoral Scholar, Department of Applied Physics 2007−2009
Postdoctoral Scholar, Department of Applied Physics 2005−2007

UNIVERSITY OF CATANIA, Catania, Italy
Research Fellow, Department of Physics 2004−2005
Graduate Researcher, Department of Physics 2000−2003

4. PUBLICATIONS

A. REFEREED JOURNAL ARTICLES

1. Dingdong Li, Rachel Odessey, Dongfang Li, and **D. Pacifici**, *Plasmonic interferometers as TREM2 sensors for Alzheimer's disease*, Biosensors 11 (7), 217 (2021).
2. S. Shi, **D. Pacifici**, and A. Zaslavsky, *Fast and efficient germanium quantum dot photodetector with an ultrathin active layer*, Applied Physics Letters 119 (22), 221108 (2021).
3. S. Shi, A. Zaslavsky, and **D. Pacifici**, *High-performance germanium quantum dot photodetectors: Response to continuous wave and pulsed excitation*, Applied Physics Letters 117 (25), 251105 (2020).
4. T. Shen, Q. Tan, Z. Dai, N. P. Padture, and **D. Pacifici**, *Arrays of plasmonic nanostructures for absorption enhancement in perovskite thin films*, Nanomaterials 10 (7), 1342 (2020).
5. R. Odessey, T. Shen, D. Oller, D. He, J.-H. Kim, J. Xu, and **D. Pacifici**, *Reduced angle sensitivity of structural coloration on an industrial aluminium platform*, Coloration Technology 136 (3), 296-301 (2020).
6. J. H. Strait, G. Holland, W. Zhu, C. Zhang, A. Agrawal, **D. Pacifici**, and H. J. Lezec, *Revisiting the photon-drag effect in metal films*, Physical Review Letters 123, 053903 (2019).
7. M. Chen, M.-G. Ju, H. F. Garces, A. D. Carl, L. K. Ono, Z. Hawash, Y. Zhang, T. Shen, Y. Qi, R. L. Grimm, **D. Pacifici**, X. C. Zeng, Y. Zhou, N. P. Padture, *Highly stable and efficient all-inorganic lead-free perovskite solar cells with native-oxide passivation*, Nature Communications 10 (1), 16 (2019).
8. S. Siontas, D. Li, H. Wang, AVPS Aravind, A. Zaslavsky, and **D. Pacifici**, *High-performance germanium quantum dot photodetectors in the visible and near infrared*, Materials Science in Semiconductor Processing 92, 19-27 (2019).
9. T. Shen, S. Siontas, **D. Pacifici**, *Plasmon-enhanced thin-film perovskite solar cells*, The Journal of Physical Chemistry C 122 (41), 23691-7 (2018).
10. S. Siontas, H. Wang, D. Li, A. Zaslavsky, **D. Pacifici**, *Broadband visible-to-telecom wavelength germanium quantum dot photodetectors*, Applied Physics Letters 113(18), 181101 (2018).
11. De He, Zhijun Liu, Gustavo E Fernandes, Tianyi Shen, Declan Oller, **D. Pacifici**, Jin Ho Kim, Jimmy Xu, *High-purity red coloration via mode-selective absorption in a layered thin-film cavity*, AIP Advances 8 (6), 065226 (2018).
12. D. Li, and **D. Pacifici**, *Strong Amplitude and Phase Modulation of Optical Spatial Coherence with Surface Plasmon Polaritons*, Science Advances 3 (10), e1700133 (2017).
13. D. Oller, D. He, J.H. Kim, **D. Pacifici**, J. Xu, G.E. Fernandes, *Colour gamuts arising from absorber–dielectric–metal optical resonators,* Coloration Technology 133 (6), 441-448 (2017).
14. S. Siontas, D. Li, P. Liu, S. Aujla, A. Zaslavsky, and **D. Pacifici**, *Low-temperature operation of high-efficiency germanium quantum dot photodetectors in the visible and near infrared*, physica status solidi (a) 215, 1700453 (2017).
15. D. Li, J. Feng, **D. Pacifici**, *Higher-order surface plasmon contributions to passive and active plasmonic interferometry*, Optics Express 24 (24), 27309–27318 (2016).
16. D. Morrill, D. Li, and **D. Pacifici**, *Measuring subwavelength spatial coherence with plasmonic interferometry*, Nature Photonics 10, 681–687 (2016) – Article.
17. S. Siontas, P. Liu, A. Zaslavsky, **D. Pacifici**, *Noise performance of high-efficiency germanium quantum dot photodetectors*, Applied Physics Letters 109 (5), 053508 (2016).

18. J. Feng, **D. Pacifici**, *A spectroscopic refractometer based on plasmonic interferometry*, Journal of Applied Physics 119 (8), 083104 (2016).
19. D. Li, J. Feng, **D. Pacifici**, *Nanoscale optical interferometry with incoherent light*, Scientific Reports 6, 20836 (2016).
20. P. Liu, P. Longo, A. Zaslavsky, and **D. Pacifici**, *Optical bandgap of single- and multi-layered amorphous germanium ultra-thin films*, Journal of Applied Physics 119, 014304-1–9 (2016).
21. D. Oller, G. Fernandes, S. Siontas, J. Xu, **D. Pacifici**, *Scalable physical coloration*, Materials Research Bulletin 83, 556–562 (2016).
22. J. Feng, D. Li, **D. Pacifici**, *Circular slit-groove plasmonic interferometers: a generalized approach to high-throughput biochemical sensing*, Optical Materials Express 5, 2742–2753 (2015).
23. P. Zhang, P. Liu, S. Siontas, A. Zaslavsky, **D. Pacifici**, J.-Y. Ha, S. Krylyuk, A.V. Davydov, *Dense nanoimprinted silicon nanowire arrays with passivated axial pin junctions for photovoltaic applications*, Journal of Applied Physics 117, 125104-1–7 (2015)
24. S. Cosentino, E. G. Barbagiovanni, I. Crupi, M. Miritello, G. Nicotra, C. Spinella, **D. Pacifici**, S. Mirabella, A. Terrasi, *Size dependent light absorption modulation and enhanced carrier transport in germanium quantum dots devices*, Solar Energy Materials and Solar Cells 135, 22–28 (2015).
25. V. S. Siu, J. Feng, P. W. Flanigan, G. T. R. Palmore, and **D. Pacifici**, *A "plasmonic cuvette": dye chemistry coupled to plasmonic interferometry for glucose sensing*, Nanophotonics 3, 125–140 (2014).
26. K. T. Gunay, P. W. Flanigan, Pei Liu, and **D. Pacifici**, *Polarization dependence of light transmission through individual nanoapertures in metal films*, Journal of the Optical Society of America B 31, 1150–1158 (2014).
27. S. Cosentino, S. Mirabella, Pei Liu, Son T Le, M. Miritello, S. Lee, I. Crupi, G. Nicotra, C. Spinella, D. Paine, A. Terrasi, A. Zaslavsky, **D. Pacifici**, *Role of Ge nanoclusters in the performance of photodetectors compatible with Si technology*, Thin Solid Films 548, 551–555 (2013).
28. P. W. Flanigan, A. E. Ostfeld, N. G. Serrino, Z. Ye, and **D. Pacifici**, *A generalized "cut-and-projection" method for the generation of quasiperiodic plasmonic concentrators for ultra-thin film photovoltaics*, Optics Express 21, 2757–2776 (2013).
29. Pei Liu, S. Cosentino, Son T. Le, S. Lee, D. Paine, A. Zaslavsky, S. Mirabella, M. Miritello, I. Crupi, A. Terrasi, and **D. Pacifici**, *Transient photoresponse and incident power dependence of high-efficiency germanium quantum dot photodetectors*, Journal of Applied Physics 112, 083103 (2012).
30. J. Feng, V. Siu, A. Roelke, V. Mehta, S. Rhieu, G.T.R. Palmore, and **D. Pacifici,** *Nanoscale Plasmonic Interferometers for Multispectral, High-Throughput Biochemical Sensing*, Nano Letters 12, 602–609 (2012).
31. S. Cosentino, P. Liu, Son T. Le, S. Lee, D. Paine, A. Zaslavsky, S. Mirabella, M. Miritello, I. Crupi, A. Terrasi, and **D. Pacifici**, *High-efficiency silicon-compatible photodetectors based on Ge quantum dots,* Applied Physics Letters 98, 221107 (2011).
32. A. Ostfeld and **D. Pacifici**, *Plasmonic concentrators for enhanced light absorption in ultra-thin film organic photovoltaics*, Applied Physics Letters 98, 113112 (2011).
33. P. N. Saeta, V. E. Ferry, **D. Pacifici**, J. N. Munday, H. A. Atwater, *How much can guided modes enhance absorption in thin solar cells*?, Optics Express 17, 20975–20990 (2009).
34. M. J. Dicken, L. A. Sweatlock, **D. Pacifici**, H. J. Lezec, K. Bhattacharya, H. A. Atwater, *Electro-optic modulation in thin film barium titanate plasmonic interferometers*, Nano Letters 8, 4048–4052 (2008).

35. V. Ferry, L. A. Sweatlock, **D. Pacifici**, H. A. Atwater, *Plasmonic nanostructure design for efficient light coupling into solar cells*, Nano Letters 8, 4391–4397 (2008).
36. **D. Pacifici**, H. J. Lezec, L. A. Sweatlock, R. J. Walters, H. A. Atwater, *Universal optical transmission features in periodic and quasiperiodic hole arrays*, Optics Express 16, 9222–9238 (2008).
37. **D. Pacifici**, H. J. Lezec, H. A. Atwater, J. Weiner, *Quantitative determination of optical transmission through subwavelength slit arrays in Ag films: Role of surface wave interference and local coupling between adjacent slits*, Physical Review B 77, 115411 (2008).
38. **D. Pacifici**, *Plasmonics: A shifting perspective*, Nature Photonics 1, 689 (2007).
39. **D. Pacifici**, H. J. Lezec, H. A. Atwater, *All-Optical modulation by plasmonic excitation of CdSe quantum dots*, Nature Photonics 1, 402–406 (2007).
40. F. Iacona, A. Irrera, G. Franzò, **D. Pacifici**, I. Crupi, M. Miritello, C. Presti, F. Priolo, *Silicon-based light-emitting devices: properties and applications of crystalline, amorphous and Er-doped nanoclusters*, IEEE Journal of Selected Topics in Quantum Electronics 12, 1596 (2006).
41. R. Espiau de Lamaëstre, H. Bernas, **D. Pacifici**, G. Franzò and F. Priolo, *Evidence for a "dark exciton" state of PbS nanocrystals in a silicate glass*, Applied Physics Letters 88, 181115 (2006).
42. J. S. Biteen, **D. Pacifici**, N. S. Lewis, H. A. Atwater, *Enhanced radiative emission rate and quantum efficiency in coupled Si nanocrystal-nanostructured gold emitters*, Nano Letters 5, 1768 (2005).
43. **D. Pacifici**, L. Lanzanò, G. Franzò, F. Iacona, F. Priolo, *Revealing the sequential nature of the Si* nanocluster-*Er interaction by variable pulse-duration excitation*, Physical Review B 72, 45349 (2005).
44. A. Irrera, F. Iacona, G. Franzò, S. Boninelli, **D. Pacifici**, M. Miritello, C. Spinella, D. Sanfilippo, G. Di Stefano, P.G. Fallica, F. Priolo, *Correlation between electroluminescence and structural properties of Si nanoclusters*, Optical Materials 27, 1031 (2005).
45. F. Enrichi, G. Mattei, C. Sada, E. Trave, **D. Pacifici**, G. Franzò, F. Priolo, F. Iacona, M. Prassas, M. Falconieri, E. Borsella, *Study of the energy transfer mechanism in different glasses co-doped with Si nanoaggregates an Er^{3+} ions*, Optical Materials 27, 904 (2005).
46. F. Enrichi, G. Mattei, C. Sada, E. Trave, **D. Pacifici**, G. Franzò, F. Priolo, F. Iacona, M. Prassas, M. Falconieri, E. Borsella, *Evidence of energy transfer in an aluminosilicate glass co-doped with Si nanoaggregates and Er^{3+} ions*, Journal of Applied Physics 96, 3925 (2004).
47. M. Wodjak, M. Klik, M. Forcales, O.B. Gusev, T. Gregorkiewicz, **D. Pacifici**, G. Franzò, F. Priolo, and F. Iacona, *Sensitization of Er luminescence by Si nanoclusters*, Physical Review B 69, 233315 (2004).
48. A. Irrera, M. Miritello, **D. Pacifici**, G. Franzò, F. Priolo, F. Iacona, D. Sanfilippo, G. Di Stefano, P.G. Fallica, *Electroluminescence properties of SiO_x layers implanted with rare earth ions*, Nuclear Instruments and Methods in Physics Research B 216, 222 (2004).
49. L. Dal Negro, P. Bettotti, M. Cazzanelli, L. Pavesi, and **D. Pacifici**, *Applicability conditions and experimental analysis of the variable stripe length method for gain measurements*, Optics Communications 229, 337 (2004).
50. F. Enrichi, G. Mattei, C. Sada, E. Trave, E. Borsella, **D. Pacifici**, G. Franzò, F. Priolo, F. Iacona, and M. Prassas, *Luminescence properties of a multi-component glass co-implanted with Si and Er*, Solid State Phenomena 99–100, 37–40 (2004).
51. **D. Pacifici**, G. Franzò, F. Priolo, F. Iacona, and L. Dal Negro, *Modeling and perspectives of the Si nanocrystals-Er interaction for optical amplification*, Physical Review B 67, 245301 (2003).
52. L. Dal Negro, M. Cazzanelli, L. Pavesi, S. Ossicini, **D. Pacifici**, G. Franzò, and F. Priolo, *Dynamics of stimulated emission in silicon nanocrystals*, Applied Physics Letters 82, 4636 (2003).

53. G. Franzò, S. Boninelli, **D. Pacifici**, F. Priolo, F. Iacona, and C. Bongiorno, *Sensitizing properties of amorphous Si clusters on the 1.54 μm luminescence of Er in Si-rich SiO_2*, Applied Physics Letters 82, 3871 (2003).
54. N. Daldosso, G. Dalba, R. Grisenti, L. Dal Negro, L. Pavesi, F. Rocca, F. Priolo, G. Franzò, **D. Pacifici**, and F. Iacona, *X-Ray Absorption study of light emitting Si nanocrystals*, Physica E – Low Dimensional Systems & Nanostructures 16, 321–325 (2003).
55. L. Dal Negro, M. Cazzanelli, N. Dal Dosso, Z. Gaburro, L. Pavesi, F. Priolo, **D. Pacifici**, G. Franzò, and F. Iacona, *Stimulated emission in Plasma Enhanced Chemical Vapour Deposited Silicon nanocrystals*, Physica E – Low Dimensional Systems & Nanostructures 16, 297–308 (2003).
56. **D. Pacifici**, G. Franzò, F. Iacona, and F. Priolo, *Amorphization and recrystallization of ion implanted Si nanocrystals probed through their luminescence properties*, Physica E – Low Dimensional Systems & Nanostructures 16, 404–409 (2003).
57. A. Irrera, **D. Pacifici**, M. Miritello, G. Franzò, F. Priolo, F. Iacona, D. Sanfilippo, G. Di Stefano, and P.G. Fallica, *Electroluminescence properties of light emitting devices based on silicon nanocrystals*, Physica E – Low-Dimensional Systems & Nanostructures 16, 395–399 (2003).
58. **D. Pacifici**, A. Irrera, G. Franzò, M. Miritello, F. Iacona, and F. Priolo, *Erbium-doped Si nanocrystals: optical properties and electroluminescent devices*, Physica E – Low Dimensional Systems & Nanostructures 16, 331–340 (2003).
59. **D. Pacifici**, G. Franzò, F. Iacona, S. Boninelli, A. Irrera, M. Miritello, and F. Priolo, *Er doped Si nanostructures*, Materials Science and Engineering B 105/1–3, 197–204 (2003).
60. F. Iacona, G. Franzò, E.C. Moreira, **D. Pacifici**, A. Irrera, F. Priolo, *Luminescence properties of Si nanocrystals embedded in optical microcavities*, Materials Science and Engineering C 19, 377–381 (2002).
61. L. Rebohle, T. Gebel, J. von Borany, W. Skorupa, M. Helm, **D. Pacifici**, G. Franzò, F. Priolo, *Transient behavior of the strong violet electroluminescence of Ge-implanted SiO_2 layers*, Applied Physics B 74, 53 (2002).
62. F. Iacona, G. Franzò, E.C. Moreira, **D. Pacifici**, F. Priolo, *Luminescence from Si Nanocrystals and Er ions embedded in resonant cavities*, Solid State Phenomena 82–84, 617–622 (2002).
63. F. Iacona, **D. Pacifici**, A. Irrera, M. Miritello, G. Franzò, F. Priolo, D. Sanfilippo, G. Di Stefano, and P.G. Fallica, *Electroluminescence at 1.54 μm in Er-doped Si nanocluster-based devices*, Applied Physics Letters 81, 3242 (2002).
64. A. Irrera, **D. Pacifici**, M. Miritello, G. Franzò, F. Priolo, F. Iacona, D. Sanfilippo, G. Di Stefano, and P.G. Fallica, *Excitation and de-excitation properties of silicon quantum dots under electrical pumping*, Applied Physics Letters 81, 1866 (2002).
65. **D. Pacifici**, E.C. Moreira, G. Franzò, V. Martorino, F. Priolo, and F. Iacona, *Defect production and annealing in ion-irradiated Si nanocrystals*, Physical Review B 65, 144109 (2002).
66. G. V. Prakash, N. Daldosso, E. Degoli, F. Iacona, M. Cazzanelli, Z. Gaburro, G. Pucker, P. Dalba, F. Rocca, E.C. Moreira, G. Franzò, **D. Pacifici**, F. Priolo, C. Arcangeli, A.B. Filonov, S. Ossicini, L. Pavesi, *Structural and optical properties of PECVD grown Silicon nanocrystals*, Journal of Nanoscience and Nanotechnology 1, 159 (2001).
67. F. Priolo, G. Franzò, F. Iacona, **D. Pacifici**, V. Vinciguerra, *Excitation and non-radiative de-excitation processes in Er-doped Si nanocrystals*, Materials Science and Engineering B 81, 9 (2001).

68. G. Franzò, E.C. Moreira, **D. Pacifici**, F. Priolo, F. Iacona, C. Spinella*, Ion Beam Synthesis of Undoped and Er-Doped Si Nanocrystals*, Nuclear Instruments and Methods in Physics Research B 175–177, 140 (2001).
69. F. Priolo, G. Franzò, **D. Pacifici**, V. Vinciguerra, F. Iacona, A. Irrera, *Role of energy transfer in the optical properties of undoped and Er-doped interacting Si nanocrystals*, Journal of Applied Physics 89, 264 (2001).
70. F. Priolo, G. Franzò, F. Iacona, E.C. Moreira, **D. Pacifici**, *Luminescence from Si Nanocrystals and Er3+ Ions Embedded in Resonant Cavities*, Solid State Phenomena 82–84, pp. 617–622 (2001).
71. G. Franzò, **D. Pacifici**, V. Vinciguerra, F. Priolo, F. Iacona, *Er^{3+} ions–Si nanocrystals interactions and their effects on the luminescence properties*, Applied Physics Letters 76, 2167 (2000).

B. Chapters in Books

72. R. K. Aaron, O. Fadil, J. Racine, and **D. Pacifici**, *Engineering and Clinical Aspects of Photoplethysmography*, Book Chapter, *Skeletal Circulation in Clinical Practice*, Ed. R. K. Aaron, World Scientific (2016).
73. P. W. Flanigan, A. E. Ostfeld, Z. Ye, N. G. Serrino, and **D. Pacifici**, *Quasiperiodic plasmonic concentrators for ultra-thin film solar cells*, Book Chapter, *Optics of Aperiodic Structures: Fundamentals and Device Applications*, Ed. Luca Dal Negro, Pan Stanford Publishing Pte. Ltd. (2013).
74. **D. Pacifici**, H. J. Lezec, L. A. Sweatlock, C. de Ruiter, V. Ferry, H. A. Atwater, *All-optical plasmonic modulators and interconnects*, in *Plasmonic Nanoguides and Circuits*, Ed. S. Bozhevolnyi, Pan Stanford Publishing Pte. Ltd., pp. 189–232 (2009).
75. A. Irrera, **D. Pacifici**, M. Miritello, G. Franzò, F. Priolo, F. Iacona, D. Sanfilippo, G. Di Stefano, P.G. Fallica, *Light emitting devices based on silicon nanocrystals*, in *Towards the first silicon laser* edited by L. Pavesi, S. Gaponenko, L. Dal Negro, NATO Science Series vol 93 (Kluwer Academic Publishers, Dordrecht 2003) pp. 29–43.
76. L. Dal Negro, M. Cazzanelli, Z. Gaburro, P. Bettotti, L. Pavesi, F. Priolo, G. Franzò, **D. Pacifici**, F. Iacona, *Stimulated emission in silicon nanocrystals: Gain measurement and rate equation modelling*, in *Towards the first silicon laser* edited by L. Pavesi, S. Gaponenko, L. Dal Negro, NATO Science Series vol 93 (Kluwer Academic Publishers, Dordrecht 2003) pp. 145–164.

C. Conference Proceedings (peer-reviewed)

77. J. Strait, G. Holland, W. Zhu, C. Zhang, A. Agrawal, **D. Pacifici**, H. J. Lezec. *Revisiting the Photon-Drag Effect in Gold Films*, Bulletin of the American Physical Society, (2019, Mar 5).
78. J. H. Strait, G. Holland, B. R. Ilic, A. Agrawal, **D. Pacifici**, H. J. Lezec. *Probing Light-Metal Interaction with the Photon-Drag Effect*, Laser Science 2018 Sep 16 (pp. JW4A-56). Optical Society of America.
79. H. J. Lezec, G. Holland, R. Ilic, C. Zhang, W. Zhu, A. Agrawal, **D. Pacifici**, J. H. Strait, *Revisiting the Photon-Drag Effect in Thin Metal Films*, Integrated Photonics Research, Silicon and Nanophotonics, Optical Society of America, ITu4I. 4 (7/2/2018).
80. J. H. Strait, G. Holland, B. R. Ilic, A. Agrawal, **D. Pacifici**, H. J. Lezec, *Revisiting the Photon-Drag Effect in Thin Metal Films*, CLEO: QELS_Fundamental Science, Optical Society of America, FF2F. 1 (5/13/2018).
81. S. Boninelli, **D. Pacifici**, B. Garrido (editors), *Nanoparticles in Dielectric Matrix: From Synthesis to Device Applications for Photonics, Electronics, and Bio-Sensing*, Phys. Status Solidi A 215, 1701073 (2018).
82. P. W. Flanigan, A. E. Ostfeld, Z. Ye, N. G. Serrino, and **D. Pacifici**, *Quasiperiodic plasmonic concentrators for enhanced light absorption in ultra-thin film solar cells*, MRS Proceedings, 1493, pp. 323–328 (2013).

83. J. Feng, V. Siu, A. Roelke, V. Mehta, S. Rhieu, G.T.R. Palmore, and **D. Pacifici,** *Plasmonic interferometry for biosensing*, IEEE Proc. Lester Eastman Conf. on High Performance Devices (LEC), August 7-9 (2012).
84. P. W. Flanigan, A. E. Ostfeld, Z. Ye, N. G. Serrino, A. Plummer, and **D. Pacifici**, *Plasmonic concentrators for enhanced light absorption in ultra-thin film organic solar cells*, IEEE Proc. Lester Eastman Conf. on High Performance Devices (LEC), August 7-9 (2012).
85. P. Liu, S. Cosentino, S. T. Le, S. Lee, D. Paine, A. Zaslavsky, S. Mirabella, M. Miritello, I. Crupi, A.Terrasi,and **D.Pacifici**, *Fast high-efficiency Germanium quantum dot photodetectors,* IEEE Proc. Lester Eastman Conf. on High Performance Devices (LEC), August 7-9 (2012).
86. J. Weiner, H. Lezec, and **D. Pacifici**, "The Electrodynamics of Light Transmission for Subwavelength Single Apertures and Aperture Arrays," in *Imaging and Applied Optics Congress*, OSA Technical Digest (CD) (Optical Society of America), paper MTuC2 (2010).
87. J. Weiner, **D. Pacifici**, and G. Lévêque, "The Physics of Extraordinary Optical Transmission through Subwavelength Slits and Slit Arrays," in *Frontiers in Optics 2008/Laser Science XXIV/Plasmonics and Metamaterials/Optical Fabrication and Testing*, OSA Technical Digest (CD) (Optical Society of America, 2008), paper MWB3.
88. H. A. Atwater, K. Tanabe, K. Nakayama, V. Ferry, L. Sweatlock, and **D. Pacifici**, "Plasmonic Photovoltaics," in *Solar Energy: New Materials and Nanostructured Devices for High Efficiency*, (Optical Society of America, 2008), paper STuD3.
89. H. Atwater, H. J. Lezec, J. A. Dionne, C. E. Ross, L. A. Sweatlock, D. Pacifici, K. Diest, M. Dicken, and V. Ferry, "Active Plasmonic Structures and Metamaterials," in *Frontiers in Optics 2007/Laser Science XXIII/Organic Materials and Devices for Displays and Energy Conversion*, OSA Technical Digest (CD) (Optical Society of America, 2007), paper FTuM6.
90. **D. Pacifici**, G. Franzò, F. Iacona, A. Irrera, S. Boninelli, M. Miritello, and F. Priolo, *Rare-earth doped Si nanostructures for Microphotonics*, Mat. Res. Soc. Symp. Vol 817 L1.2.1 (2004).
91. F. Enrichi, G. Mattei, C. Sada, E. Trave, **D. Pacifici**, G. Franzò, F. Priolo, F. Iacona, M. Prassas, M. Falconieri, and E. Borsella, *Optical and structural investigation on the energy transfer in a multicomponent glass co-doped with Si nanoaggregates and Er3+ ions,* Mat. Res. Soc. Symp. Vol. 817 L1.8.1 (2004).
92. F. Enrichi, G. Mattei, C. Sada, E. Borsella, **D. Pacifici**, G. Franzò, F. Priolo, F. Iacona, and M. Prassas, *Enhancement of Er^{3+} 1.54 μm Infrared Emission in a Si and Er Co-Implanted Multicomponent Glass*, European Conference on Optical Communications (ECOC-IOOC 2003) Proceedings vol. 3, p. 426 (2003).
93. F. Iacona, G. Franzò, **D. Pacifici**, A. Irrera, M. Miritello, D. Sanfilippo, G. Di Stefano, P.G. Fallica, and F. Priolo, *Er-Doped Si Nanocrystals as a Candidate for Optical Amplification*, European Conference on Optical Communications (ECOC-IOOC 2003) Proceedings vol. 4, p. 1068 (2003).
94. F. Priolo, A. Irrera, **D. Pacifici**, M. Miritello, G. Franzò, F. Iacona, D. Sanfilippo, G. Di Stefano, P.G. Fallica, *Dispositivi emettitori di luce basati su nanocristalli di silicio*, Fotonica2003 Proceedings b4.2 (April 2003).
95. N. Daldosso, G. Das, G. Dalba, S. Larcheri, R, Grisenti, G. Mariotto, L. Pavesi, F. Rocca, F. Priolo, G. Franzò, A. Irrera, M. Miritello, **D. Pacifici**, and F. Iacona, *Silicon nanocrystal Nucleation as a Function of the Annealing Temperature in SiO_x films*, Mat. Res. Soc. Symp. Proc. Vol. 770, I1.3.1 (2003).
96. L. Dal Negro, M. Cazzanelli, N. Daldosso, L. Pavesi, F. Priolo, G. Franzò, **D. Pacifici**, and F. Iacona, *Time-resolved gain dynamics in silicon nanocrystals*, Mat. Res. Soc. Symp. Proc. Vol. 770, I3.4.1 (2003).
97. **D. Pacifici**, G. Franzò, F. Iacona, F. Priolo, *Coupling and cooperative up-conversion coefficients in Er-doped Si nanocrystals*, Mat. Res. Soc. Symp. Proc. Vol. 770, pp. 113–118, I6.8.1 (2003).

98. M. Forcales, M. Wojdak, M. A. J. Klik, T. Gregorkiewicz, O. B. Gusev, G. Franzò, **D. Pacifici**, F. Priolo, F. Iacona, *Si nanocrystals as sensitizers for Er PL in SiO_2*, Mat. Res. Soc. Symp. Proc. Vol. 770, p. 119-124, I6.9.1 (2003).

99. L. Dal Negro, M. Cazzanelli, Z. Gaburro, P. Bettotti, L. Pavesi, **D. Pacifici**, G. Franzò, F. Priolo, F. Iacona, *Optical gain and stimulated emission in silicon*, Mat. Res. Soc. Symp. Proc. Vol. 738, p. 233-238, G8.8.1 (2003).

100. A. Irrera, F. Iacona, **D. Pacifici**, M. Miritello, G. Franzò, D. Sanfilippo, G. Di Stefano, P.G. Fallica, and F. Priolo, *Tuning of the electroluminescence from Si nanocrystals through the control of their structural properties*, Mat. Res. Soc. Symp. Proc. Vol. 737, p. 819–824, F11.9 (2003).

101. F. Priolo, F. Iacona, **D. Pacifici**, A. Irrera, M. Miritello, G. Franzò, D. Sanfilippo, G. Di Stefano, and P.G. Fallica, *Electroluminescent devices based on Er-doped Si nanoclusters*, Mat. Res. Soc. Symp. Proc. Vol. 737, p. 761-766, F9.3 (2003).

102. L. Dal Negro, B. Danese, Z. Gaburro, P. Bettotti, L. Pavesi, F. Iacona, G. Franzò, **D. Pacifici**, F. Priolo, *Enhanced emission cross section and VSL analysis of erbium coupled silicon nanocrystals*. In: Lasers and Electro-Optics Europe, 2003. CLEO/Europe Conference (2003).

103. **D. Pacifici**, G. Franzò, F. Iacona, F. Priolo, *Erbium-doped silicon nanoclusters*. In: Conference Proceedings – Italian Physical Society. Vol. 84, pp. 507–522, Editrice Compositori; 1999 (2003).

104. L. Pavesi, L. Dal Negro, N. Daldosso, Z. Gaburro, M. Cazzanelli, F. Iacona, G. Franzò, **D. Pacifici**, F. Priolo, S. Ossicini, M. Luppi and E. Degoli "*Will silicon be the photonics material of the third millennium?*" Proceedings of the 26th International Conference on the Physics of Semiconductors vol. 171, pp. 261–268 (Held in Edinburgh 2002), (2003).

105. L. Dal Negro, M. Cazzanelli, Z. Gaburro, L. Pavesi, **D. Pacifici**, F. Priolo, G. Franzò, and F. Iacona, *Optical gain in PECVD grown silicon nanocrystals*, in *Optical properties of nanocrystals* edited by Z. Gaburro, Proceedings of SPIE vol. 4808, 13-27 (2002).

106. L. Pavesi, L. Dal Negro, M. Cazzanelli, C. Mazzoleni, Z. Gaburro, F. Priolo, G. Franzò, **D. Pacifici**, A. Irrera, F. Iacona, "*Towards a silicon laser*," Highlights INFM (2000/2001).

D. WORK IN REVIEW

107. N/A

E. WORK IN PROGRESS

108. Tianyi Shen, Zixi Lin, Rachel Odessey, Sue Shi, Qiwen Tan, and **D. Pacifici**, *Measuring longitudinal coherence and power spectra of a tunable supercontinuum laser with Michelson interferometry*, (2023).

109. Dongfang Li, Tianyi Shen, and D. Pacifici, *Modulation of optical spatial coherence with photonic modes*, (2023).

[Research Report, Google Scholar (01/31/2023):
(1) Citations: **6950**; (2) h-index (Hirsch factor): **35**; (3) i10-index: **64]**

F. PATENTS

The following provisional patents have been filed by the Brown University Technology Venture Office (TVO):

1. Pacifici, D. (2011). Title: *Nanoscale Plasmonic Interferometers for Multispectral, High-Throughput Biochemical Sensing*. U.S. Patent Application 61/546,435, filed October 2011.

2. Pacifici, D. (2012). Title: *High-Efficiency Silicon-Compatible Photodetectors Based on Germanium Quantum dots and Ge/Si Hetero-Nanowires*. International Patent Application PCT/US12/40809, filed June 2012, claiming priority from U.S. Application 61/492,589, filed June 2011.
3. Pacifici, D. (2012). *Plasmonic Interferometry Coupled to Dye Chemistry for Enhanced Selectivity*, submitted to Brown TVO (2012).
   Pacifici, D. (2016). Title: *Nanoscale Optical Interferometry with Incoherent Light*. U.S. Provisional Application No. 62/294872, Filing Date: February 12, 2016.
4. Pacifici, D. (2017). Title: *Measuring Subwavelength Spatial Coherence with Plasmonic Interferometry*. U.S. Provisional Patent Application Serial No. 62/556,834. Filing Date: September 11, 2017

The following patents have been published:

1. Dongfang Li, Jing Feng, Domenico Pacifici, Nanoscale Optical Interferometry with incoherent light. U.S. Patent Application No.: 62/294872, Filing Date: February 12, 2016.
2. Domenico Pacifici, Henri Lezec, Tayhas Palmore, Vince Siu, Vihang Mehta, Alec Roelke, Steve Rhieu, Jing Feng. Systems And Methods Enabling High-Throughput, Real Time Detection Of Analytes. (2014/11/6, US 20140327913, 2013/4/19, WO 2013056137)
   Priority Data:

61/546,435	12.10.2011	US
61/662,048	20.06.2012	US
61/581,951	30.12.2011	US

3. Domenico Pacifici, Alexander Zaslavsky. High-Efficiency Silicon-Compatible Photodetectors Based On Ge Quantum Dots and Ge/Si Hetero-Nanowires. (2013/12/2, US 14/093,938, 2012/12/7, WO 2012167282)
   Priority Data:

61/492,589	02.06.2011	US

The following patents have been issued:

1. Pacifici D. *et al*. Systems and methods enabling high-throughput, real time detection of analytes. U.S. Patent No. 9,285,314 (March 15, 2016)

G. Invited Lectures (International Conferences)

OSA Frontiers In Optics, Washington, DC, USA
Laser Science APS/DLS 2017
Manipulating Optical Coherence with Plasmonic Interferometry.

CLEO Conference on Lasers and Electro-Optics, San Jose, CA, USA
QELS-Fundamental session on Nano-Optics and Plasmonics 2017
The Role of Coherence in Plasmonics and Plasmonic Interferometry.

Materials Research Society, San Francisco, CA, USA
Spring Meeting, Symposium: Resonant Optics – Fundamentals and Applications 2015
Plasmonic Concentrators and Interferometry.

OPTO SPIE Photonics West, San Francisco, USA
Photonic and Phononic Properties of Engineered Nanostructures 2015
Plasmonic Interferometry for Non-invasive Glucose Sensing.

IEEE NANOTECHNOLOGY MATERIALS AND DEVICES CONFERENCE, Aci Castello, Italy
Sponsored by the EU FP7 project WATER 2014
Plasmonic Interferometry for Biomedical Applications.

MATERIALS RESEARCH SOCIETY, San Francisco, CA, USA
Spring Meeting, Symposium KK: Resonant Optics – Fundamentals and Applications 2014
Plasmonic Interferometers for Biochemical Sensing and Optical Coherence Measurements.

MATERIALS RESEARCH SOCIETY, San Francisco, CA, USA
Spring Meeting, Symposium II: Emerging Nanophotonic Materials and Devices 2014
Plasmonic Interferometry: Physics and Applications.

30TH COURSE NANO-STRUCTURES FOR OPTICS AND PHOTONICS, Erice, Italy
Ettore Majorana Foundation and Center for Scientific Culture 2013
Plasmonic Interferometry for Photovoltaics and Biosensing Applications.

MATERIALS RESEARCH SOCIETY, Boston, USA
Fall Meeting 2012
Germanium Nanostructures Coupled to Plasmonic Concentrators for Efficient Silicon-compatible Optoelectronics.

OPTO SPIE PHOTONICS WEST, San Francisco, USA
Photonic and Phononic Properties of Engineered Nanostructures II 2012
Plasmonic interferometry: a versatile tool for high-throughput biochemical sensors and energy-efficient thin-film solar cells.

EUROPEAN OPTICAL SOCIETY (EOS), Capri, Italy
3rd Topical Meeting on Optical Microsystems & 1st Topical Meeting on Lasers 2009
Applied Plasmonics: surface waves for sensing, switching and energy harvesting.

MATERIALS RESEARCH SOCIETY, San Francisco, CA, USA
Spring Meeting 2009
Active Plasmonics: physics and applications.

NANOMETA 2009, THE EUROPEAN RESEARCH SOCIETY, Tirol, Austria
The 1st European Topical Meeting on Nanophotonics and Metamaterials 2009
Active Plasmonic Devices: novel approaches to the generation and manipulation of surface plasmons.

METAMATERIALS 2008, Pamplona, Spain
2nd International Congress on Advanced Electromagnetic Materials in Microwave and Optics 2008
Active Plasmonic Components and Metamaterials.

PQE, PHYSICS OF QUANTUM ELECTRONICS, Snowbird, UT, USA
The 38th Winter Colloquium on the Physics of Quantum Electronics 2008
Plasmons in slit and hole arrays: role of coherence and short range order for modulators and solar cells.

MATERIALS RESEARCH SOCIETY, San Francisco, CA, USA

Spring Meeting 2004

Rare-earth doped silicon nanostructures for Microphotonics.

EUROPEAN MATERIALS RESEARCH SOCIETY, Strasbourg, France

Spring Meeting 2002

Microcavities and electroluminescent devices based on silicon nanocrystals and rare-earth doped nanocrystals.

SOCIETÀ ITALIANA DI FISICA, Milano, Italy

LXXXVII Congresso nazionale 2001

Photoluminescence from silicon nanocrystals and erbium ions.

H. COLLOQUIA

THE STATE UNIVERSITY OF NEW JERSEY, RUTGERS, New Brunswick, NJ

Laboratory for Surface Modification (LSM) / Institute for Advanced Materials, Devices, and Nanotechnology (IAMDN) – Invited talk 2017

The role of coherence in Plasmonics.

UNIVERSITY OF CATANIA, Catania, Italy

Scuola Superiore di Catania - Invited talk 2013

Plasmonic Interferometry: Physics and Applications.

[Video of the seminar: http://www.youtube.com/watch?v=1rsn6yLW3W8 **]**

UNIVERSITY OF CATANIA, Catania, Italy

Department of Physics - Invited talk 2013

Plasmonic Interferometry for Photovoltaics and Biosensing Applications.

BROWN UNIVERSITY, Providence, RI, USA

IMNI Brown Bag Seminars - Invited talk 2012

Plasmonics: light concentrators and interferometers for ultra-thin-film photovoltaics and biochemical sensing.

CITY UNIVERSITY OF NEW YORK, New York, NY, USA

CUNY Graduate Center Photonics Colloquium 2010

Applied Plasmonics for Optical Communications, Energy Harvesting and Sensing Applications.

BROWN UNIVERSITY, Providence, RI, USA

Energy Science Seminar - Invited talk 2010

Plasmonic Interferometers for Energy Harvesting.

PRINCETON UNIVERSITY, Princeton, NJ, USA

Department of Electrical Engineering 2009

Plasmonics for Information, Energy and Environmental applications.

BROWN UNIVERSITY, Providence, RI, USA

Invited talk 2009

Active Plasmonics for Optical Communication, Photovoltaics and Sensing Applications.

BELL LABS, Murray Hill, NJ, USA

Invited talk 2009

Plasmonics: a route toward improved efficiency in thin film solar cells.

ICFO-THE INSTITUTE OF PHOTONIC SCIENCES, Barcelona, Spain
ICFO Colloquium 2009
Active Plasmonics for Optical Communication, Photovoltaics and Sensing Applications.

UNIVERSITY OF DELAWARE, Newark, DE, USA
ECE Lecturer Series, Electrical and Computer Engineering 2008
Active Plasmonics for Optical Communication and Photovoltaics.

KAIST, Daejeon, Republic of Korea
Department of Physics 2008
Active plasmonics: ultra low-power all-optical modulators, efficient solar cells, and beyond.

GEORGIA TECH, Atlanta, GA, USA
School of Electrical and Computer Engineering 2008
Active plasmonics: from ultra low-power all-optical modulators to efficient solar cells.

BOSTON UNIVERSITY, Boston, MA, USA
ECE Colloquium, Department of Electrical and Computer Engineering 2006
Si-based microphotonics: light sources and plasmonic devices.

5. RESEARCH GRANTS

A. CURRENT GRANTS

2023 Core Research Facility (CRF) Infrastructure Program Award: *Acquisition of a new large area ion milling system "ATC Orion Series" from AJA International.* The system has been acquired for the Brown University Nanofabrication Central Facility (NCF cleanroom).
PI: Domenico Pacifici, NCF Director.
Award amount: $212,500. Total period covered: until 06/30/23.

B. PROPOSALS COMPLETED

2021 Core Research Facility (CRF) Infrastructure Program Award: *Acquisition of a new reactive ion etching (RIE) system "Vision 320 RIE" from Plasma-Therm.* The system has been acquired for the Brown University Nanofabrication Central Facility (NCF cleanroom).
PI: Domenico Pacifici, NCF Director.
Award amount: $200,000. Total period covered: until 06/30/21.

2018-2021 NSF CBET EAGER: *Development of Surface Chemistry and Plasmonic Interferometers for Early-Onset Detection of Alzheimer Disease.*
PI: Domenico Pacifici.
Award amount: $100,000. Total period covered: 08/15/2018–07/31/21.

2018-2021 NSF MRI: *Acquisition of a Maskless Lithography Tool for the Brown Nanofabrication Central Facility (NCF).*
Co-PI: Domenico Pacifici. PI: A. Zaslavsky, Co-PI: B. Rubenstein, A. Shukla, D. Stein.
Award amount: $301,000. Total period covered: 09/01/2018–08/31/21.

2015-2020 NSF SNM: *Physical Nano-Engineering Approaches to Surface Coloration and their Industrial Scale Implementation in Anodized Aluminum.*

Co-PI: Domenico Pacifici. PI: J. Xu, Co-PI: G. Fernandes.
Award amount: $1,500,000. Total period covered: 09/01/2015–08/31/19.

2015-2020 NSF RII Track-2 FEC: *Low-Cost, Efficient Next-Generation Solar Cells for the Coming Clean Energy Revolution.*
Participant: Domenico Pacifici. PI: Nitin Padture (Brown University), Co-PI: Jinsong Huang.
Award amount: $4,000,000. Total period covered: 08/01/15–07/31/19.

2015-2016 Brown University Seed Award, *Nanoimprinted Nanowire Solar Cells.*
Co-PI: Domenico Pacifici. PI: Alexander Zaslavsky.
Award amount: $60,000. Total period covered: 06/01/15–05/30/16.

2012-2016 NSF-CBET, *Multispectral plasmonic interferometry: a new tool for high-throughput, real-time detection of cytokines.*
PI: Domenico Pacifici. Co-PI: G. Tayhas R. Palmore.
Award amount: $593,999. Total period covered: 03/01/12–03/01/16.

2012-2016 NSF-DMR, *Germanium nanostructures for efficient silicon-compatible optoelectronics.*
PI: Domenico Pacifici. Co-PI: Alexander Zaslavsky.
Award amount: $400,000. Total period covered: 06/01/12–06/01/16.

2013-2015 JDRF (Juvenile Diabetes Research Foundation), *Plasmonic Interferometry: A New Tool for Real-Time Detection of Insulin.*
Co-PI: Domenico Pacifici. PI: G. Tayhas R. Palmore.
Award amount: $1,000,000. Total period covered: 06/01/13–05/31/15.

2014-2016 Seed Award, *Multispectral Photoplethysmography for 3D Imaging and Quantitative Assessment of Blood Flow and Oxygen Content in Bone.*
PI: Domenico Pacifici. Co-PI: Roy Aaron.
Award amount: $80,000. Total period covered: 06/01/14–05/30/16.

2013-2015 Seed Award, *Solar Power By Optical Frequency Rectification With Plasmonic Concentrators Coupled to Junctions of Doped Mott Insulators.*
Co-PI: Domenico Pacifici, Gang Xiao, Vladan Mlinar. PI: Brad Marston.
Award amount: $80,000. Total period covered: 07/01/13–06/30/15.

2012-2012 ONR, *2012 Lester Eastman Conference (LEC) on High Performance Devices held at Brown University 7 – 9 August 2012*
PI: Domenico Pacifici.
Award amount: $19,999.90. Total period covered: 07/15/12–21/06/13.

2011 FOUNDATION BLANCEFLOR BONCOMPAGNI-LUDOVISI AWARD, Stockholm, Sweden.
PI: Salvatore Cosentino (Visiting Student in Pacifici's Group).
Award amount: SEK75,000 (~$10,000). Total period covered: 09/01/11–04/30/12.

2011-2012 DORIS M. AND NORMAN T. HALPIN PRIZE FOR INTERDISCIPLINARY SENIOR CAPSTONE PROJECTS
Co-PI: Domenico Pacifici. PI: Christian Franck. Award recipient: Anastassia Astafieva
Award amount: $750 student prize; $2,500 research fund. Total period covered: 10/14/11–5/01/12.

2010 SALOMON AWARD, Brown University**,** *High-throughput, polychromatic, compact interferometric sensor array for label-free detection of chemical and biological analytes*.
PI: Domenico Pacifici.
Award amount: $15,000. Total period covered: 01/19/10–06/30/11.

C. PROPOSALS SUBMITTED

2023-2026 NSF-DMR, *Collaborative Research: CMOS+X: Hybrid Integration of Ge Quantum Dot Broadband Photodetectors with Low-Power Mixed-Mode CMOS SoC.*
PI: Domenico Pacifici. Co-PIs: A. Zaslavsky (Brown University), M. Donato (Tuft University).
Award amount: $970k [$508,546 (Brown U.) + $461,663 (Tuft U.)]. Total period covered: 06/01/23–05/31/26.

2017-2021 NSF-EFRI NewLAW Preproposal, *Broken Reciprocity and Rectification in Topological materials wiht Strong Spin Orbit Coupling and in Plasmonic Metamaterials.*
Co-PI: Domenico Pacifici. PI: V. Mitrovic (Physics). Co-PIs: Brad Marston, Gang Xiao (Physics).
Award amount: $1,980,129. Total period covered: 09/01/17–08/31/21.

2017-2021 NSF-CBET, *Tunable-Coherence Plasmonic Interferometry for High-Sensitivity Optical Biosensing.*
PI: Domenico Pacifici.
Award amount: $299,998. Total period covered: 09/01/18–08/31/21.

2017-2021 NSF-DMR, *Germanium Quantum Dots for High-Speed, High-Gain Visible and Near-Infrared Photodetection.*
PI: Domenico Pacifici. Co-PI: A. Zaslavsky.
Award amount: $382,048. Total period covered: 09/01/18–08/31/21.

6. SERVICE

A. TO THE UNIVERSITY

- Director, Brown University Nanofabrication Central Facility (2016–present).
- Brown Space Engineering, Co-Advisor, Experimental characterization of nanosatellite solar panels.
- Freshman (~7 students/year) and Sophomore (~7 students/year) Student Advisor.
- Seed Grant Reviewer.
- Committee Member, Search for new EMSTL Program Director (2018).
- Committee Member, Development of New Website for the School of Engineering, Brown University (2009-2011)
- Committee Member, Proposal for a new Institute for Energy Science, Brown University, Proposal Co-author (2009-2011)
- Proposal reviewer, School of Engineering, Brown University (2010).
- Instructor, Nanoscale Fabrication and Characterization Workshops, Brown University Microelectronics and Electron Microscopy Facilities, March-April 2010, Providence, RI (Organizer: Prof. R. Zia, Instructors: Prof. D. Pacifici, Prof. R. Zia, Eng. M. Jibitsky, Eng. A. McCormick)
- Graduate Research Application Screening, Brown University, School of Engineering.
- Organizer, "Electronic and Photonics" seminar series, Brown University, School of Engineering (2009-2011)
- Graduate Students Preliminary Examination, Participant. (2009-present)
- Developed a new course, "The Physics of Solar Cells," at the undergraduate and graduate levels.
- Developed a new course, based on the concepts of "flipped teaching" and "learning by teachinh", titled "Coherence of Light in Nano-Optics and Plasmonics," at the undergraduate and graduate levels.

- Revamped a junior-level course "Design and Fabrication of Semiconductor Devices" with focus on semiconductor solar cell fabrication.
- Revamped a graduate-level course "Solid State Quantum and Optoelectronics" with focus on non-linear and quantum optics.
- Member and contributor, "Science Friday" meetings, STEM faculty group co-sponsored by the Sheridan Center for Teaching and Learning and the Science Center at Brown University.
- Run for the Faculty Executive Committee (FEC), junior faculty slate (2010)
- Participated to an innovative Technology Venture Office panel titled "A TVO Panel on Positioning an Entrepreneur for Success!" Played the role of an inventor discussing patenting/licensing /commercialization issues with a lawyer, an entrepreneur, and an investor. (Panel organized by Prof. Jason Harry and Heidi Meisenkothen).
- Honors Thesis Reader.

B. TO THE PROFESSION

- Organizing Committee Member, e-MRS Conference, Symposium P, entitled "Dielectric nanocomposites for energy, environment and health: from fundamental to devices," Strasbourg (France), May 27-31, 2019.
- Organizing Committee Member, e-MRS Conference, Symposium R, entitled "Nanoparticles in dielectric matrix: from synthesis to device applications for photonics, electronics and bio sensing," Strasbourg (France), May 22-26, 2017.
- Organizing Committee Member, Joint Fall Meeting of the New England Sections of the APS and the AAPT, Nanobiophysics in the 21st Century, October 2010, Brown University.
- Program Committee Member, Photonics and Phononic Crystal Materials and Devices, OPTO SPIE Photonics West, January 2009, 2010, 2011, 2012.
- International Program Committee Member, IASTED International Conference on Solar Energy (SOE 2010, 2011), Banff, Alberta, Canada (2010, 2011).
- Local Arrangements Chair, IEEE Biennial Lester Eastman Conference on High Performance Devices, to be held at Brown University in August 2012.
- Reviewer, Pilot Funding for New Research (Pfund) (2009).
- Reviewer, Science Center programs of the U.S. Department of State, U.S. Civilian Research and Development Foundation (CRDF) (2010).
- Reviewer, NSF panel evaluating photonic proposals submitted to the ECCS Division (2011-2012).
- Reviewer, NSF panel evaluating proposals submitted to the DMR Division (2012).
- Reviewer, DOE Office of Science Graduate Fellowship (SCGF) Program's 2012.
- Peer Reviewer for the following journals: Reviews of Modern Physics, Nano Letters, Nature Communications, ACS Applied Materials & Interfaces, Physical Review B, Optics Express, Applied Physics Letters, Optics Letters, ACS Photonics, Physical Review Applied, Nature Photonics, Physical Review Letters, Applied Optics, Journal of the Optical Society of America, Solid State Electronics, Journal of Applied Physics, Light: Science & Applications.
- External reviewer for NIST, Washington Editorial Review Board (WERB).
- External reviewer for Science Foundation Ireland (SFI) President of Ireland Future Research Leaders programme.
- Organized hands-on workshops in the broader field of Nanoscale Fabrication and Characterization Methods.

C. TO THE COMMUNITY

- Speaker, Engineers Week 2010, Brown University, Talk on "Engineering of Photography" (February 2010). Showcased photographs and personal point of view in photography.

- Teaching outreach: Presented talks on "The Power of The Sun" (with solar cell demonstrations) at the Martin Luther King (MLK) and Vartan Gregorian Elementary Science Conferences, organized within the GK-12 program at Brown University. Served as judge for the Science fair at MLK.
- Organizer of guided tours and solar cell demos for elementary school students.
- Lab Tour Training for Staff Members of the School of Engineering (2013).

7. ACADEMIC HONORS & AWARDS

SIGMA-XI, THE SCIENTIFIC RESEARCH HONOR SOCIETY
Full Membership 2020
In recognition of his scholarly achievements and contributions to the advancement of knowledge in his research field.

BROWN UNIVERSITY
Research Seed Funding 2014
Created to help faculty compete more successfully for large-scale, interdisciplinary, multi-investigator grants.

BROWN UNIVERSITY
Henry Merritt Wriston Fellowship 2013
"For his contributions to excellence in teaching and for the devotion to the intellectual development of both graduate and undergraduate students."

BROWN UNIVERSITY
Research Seed Funding 2013
Created to help faculty compete more successfully for large-scale, interdisciplinary, multi-investigator grants.

BROWN UNIVERSITY 'S SCHOOL OF ENGINEERING AND TAU BETA PI
Dedicated Faculty Award 2012
"For enriching the undergraduate education experience. Selected for demonstrating superior teaching, dedication, and involvement both in and out of the classroom."

BROWN UNIVERSITY
Richard B. Salomon Faculty Research Award 2010
Established to support excellence in scholarly work by providing funding for selected faculty research projects deemed to be of exceptional merit.

STMICROELECTRONICS, Catania, Italy
Best Ph.D. Thesis Award 2004
Award for the best Ph.D. thesis performed in collaboration with industry. STMicroelectronics is a global leader in developing and delivering system-on-chip and semiconductor solutions across the spectrum of microelectronics.

ACCADEMIA GIOENIA, Catania, Italy
Best Master of Science Thesis Award 2001
The Accademia Gioenia is a research society founded in 1824 that includes Italian scientists, like Nobel laureate Rita Levi Montalcini, as honorary members. The academy promotes the studies of natural phenomena in order to contribute to the progress of science.

RESEARCH DISTINCTIONS

- Article featured as "Cover story" in NanoPhotonics, vol. 3 (2014).
- Article selected as "Editor's Pick", Applied Physics Letters (2018); press coverage https://aip.scitation.org/doi/10.1063/1.5078621.
- Research featured in Nature Photonics, "Research Highlights," vol. 3, pp. 4-5 (2009).
- Research featured in Nature Photonics, "News & Views," vol. 1, p. 368 (2007).
- Research featured in Nature Physics, "Research Highlights," vol. 3, p. 443 (2007).
- Article selected by Nature Photonics for the "First Year (2007) Highlights," (2007).
- Article featured as "Cover story" in Nature Photonics, vol. 1, N. 2 (2007).
- Research featured in Phys.Org, "Research demonstrates method to alter coherence of light" (18/10/2017).
- Research featured in Phys.Org, "Researchers make better sense of incoherent light" (16/9/2016).
- Research featured in Phys.Org, "Advance could aid development of nanoscale biosensors" (16/2/2016).
- Research featured in Phys.Org, "Glucose monitoring for diabetes made easy with a blood-less method" (16/6/2014).
- Research featured in Phys.Org, "Progress on detecting glucose levels in saliva" (3/6/2014).
- Research featured in Phys.Org, "Biochip measures glucose in saliva, not blood" (23/1/2012).
- In a team effort with two Professors at the Rhode Island School of Design (RISD), i.e. Prof. Laura Briggs and Prof. Jonathan Knowles, Prof. Pacifici proposed developing, manufacturing, and marketing Solar Sail, an affordable, easily replicable, textile photovoltaic system. The Brown-RISD team was among five finalists to be recognized by the 2013 Rhode Island Foundation Innovation Fellows selection committee for the projects' merit and commercialization potential.
- Honorable Mention for Tech Innovation from the National Collegiate Inventors and Innovators Alliance (NCIIA) for the SPIT'nIT technology (Surface Plasmon Interterferometric Technology for non-Invasive Testing of glucose in saliva), May 2012.
- Research featured in Nature Photonics, "Research Highlights," vol. 6, p. 139 (2012).
- Research featured in "News" ISSNAF website (Italian Scientists and Scholars of North America Foundation), 2012. Title: "Test for diabetics."
- Paper selected for the March 28, 2011 issue of Virtual Journal of Nanoscale Science & Technology - "Plasmonic concentrators for enhanced light absorption in ultrathin film organic photovoltaics," published in Applied Physics Letters 98, 113112 (2011).

- Media coverage: The Brown Daily Herald (8/11/2017), Innovation (25/1/2012), Yahoo!News IANS (4/6/2014), theEngineer (23/1/2012), ScienceNews Fisher Scientific (2/2/2012), LabMedica (18/6/2014), Science&Research (3/2/2012), BioanalysisZone Journal (2012), Qmed (2012), articolo "Blutzucker" su Wikipedia, Press Review for the Consulate General of Italy (Boston, 27/2/2012), School of Engineering News (3/6/2014), IEEE Spectrum (5/6/2014), IEEE Spectrum (7/3/2012), Laser Focus World (27/1/2012), medGadget (20/6/2014), BioOpticsWorld (17/6/2014), NSF Multimedia Gallery (2012), Photonics.com (3/2012), Consultant360 (18/7/2014), iMedicalApps (27/1/2012), cnet (20/1/2012), The Smithsonian/NASA database (2012), NanoWiki (25/1/2012), Corriere.it (27/2/2012), Human Saliva Research (1/2012), netdoctor (4/6/2014), ScienceDaily (16/6/2014), ChemistryViews (28/6/2014), ScienceDaily (23/1/2012), The Indian Express (4/6/2014), gizmag (18/6/2014), nanowerk (3/6/2014), Boston Business Journal (6/2/2012), Photonics.com (24/1/2012), News from Brown (20/1/2012), Today's Medical Developments (9/3/2012), robaid (26/1/2012), International Business Times (28/1/2012), Associazione Giovani e Adulti con Diabete (29/2/2012), Pour Femme (29/2/2012), Quotidiano Sanità (24/1/2012), Reader's Digest (2/2012), Phys.Org (16/6/2014), Diabetes-kids.de (24/1/2012), ISSNAF (16/6/2014).
- Wikipedia articles: "Plasmonic circuitry", "Plasmonic metamaterial", "Plasmonic solar cell", "Plasmonische Solarzelle", "Blutzucker".

8. TEACHING

Table Summary:

#	Course Name	Level	Code	A.Y.
1	Introduction to Engineering	Undergrad	ENGN 0030	2022/2023 2021/2022 2020/2021 2019/2020 2018/2019
2	Design and Fabrication of Semiconductor Devices	Undergrad	ENGN 1680	2016/2017 2014/2015 2012/2013 2010/2011
3	Photovoltaics Engineering	Undergrad	ENGN 1931A	2015/2016
4	Electricity and Magnetism	Undergrad	ENGN 0510	2012/2013 2011/2012 2010/2011 2009/2010
5	The Physics of Solar Cells	Undergrad	ENGN 1931A	2011/2012 2009/2010
6	Solid State Quantum and Opto-electronics	Grad	ENGN 2620	2021/2022 2018/2019 2016/2017
7	Coherence of Light in Nano-Optics and Plasmonics	Grad	ENGN 2912Q	2022/2023 2019/2020 2015/2016

Detailed Description:

ENGN 2912Q: Coherence of Light in Nano-Optics and Plasmonics Spring 2023
Enrollment: 4 Students.

ENGN 0030: Introduction to Engineering Fall 2022
Enrollment: 163 Students.

ENGN 2620: Solid State Quantum and Optoelectronics Spring 2022
Enrollment: 3 Students + 1 Auditor (faculty member).

ENGN 0030: Introduction to Engineering Fall 2021
Enrollment: 143 Students.

ENGN 0030: Introduction to Engineering Spring 2021
Enrollment: 109 Students.

ENGN 2912Q: Coherence of Light in Nano-Optics and Plasmonics Spring 2020
Enrollment: 6 Students.

ENGN 0030: Introduction to Engineering Fall 2019
Enrollment: 193 Students.

ENGN 0030: Introduction to Engineering Fall 2018
Enrollment: 160 Students.

ENGN 2620: Solid State Quantum and Optoelectronics Fall 2018
Enrollment: 6 Students + 4 Auditors.

ENGN 1680: Design and Fabrication of Semiconductor Devices Spring 2017
Enrollment: 6 Students + 2 Auditors.

ENGN 2620: Solid State Quantum and Optoelectronics Fall 2016
Enrollment: 6 Students + 5 Auditors.

ENGN 1931A: Photovoltaics Engineering Spring 2016
Enrollment: 13 Students.

ENGN 2912Q: Coherence of Light in Nano-Optics and Plasmonics Fall 2015
Enrollment: 6 Students.

ENGN 2980: Special Projects, Reading, Research and Design Fall 2015
Enrollment: 2 Graduate Students (Jing Feng, Stylianos Siontas),
1 Undergraduate Student (Lila V. Rodgers).

ENGN 1680: Design and Fabrication of Semiconductor Devices Spring 2015
Enrollment: 6 Students.

ENGN 2980: Special Projects, Reading, Research and Design Spring 2014
Enrollment: 2 Graduate/1 Master Students (Jing Feng, Patrick Flanigan, Tianyi Shen).

ENGN 1970: Independent Studies in Engineering Fall 2014
Enrollment: 1 Undergraduate Student (Oussama Fadil).

ENGN 2980: Special Projects, Reading, Research and Design Fall 2014
Enrollment: 2 Graduate Students (Jing Feng, Patrick Flanigan).

PHYS 2980: Research in Physics Fall 2014
Enrollment: 1 Graduate Student (Pei Liu).

ENGN 2980: Special Projects, Reading, Research and Design Spring 2014
Enrollment: 2 Graduate Students (Jing Feng, Patrick Flanigan).

PHYS 2981: Research in Physics Spring 2014
Enrollment: 1 Graduate Student (Pei Liu).

ENGN 2980: Special Projects, Reading, Research and Design Fall 2013
Enrollment: 2 Graduate (Jing Feng, Patrick Flanigan).

PHYS 2980: Research in Physics Fall 2013
Enrollment: 1 Graduate Student (Pei Liu).

Graduate Student Level Seminars on "The Physics of Solar Cells" Fall 2013
Developed with the support of the Wriston Fellowship. Enrollment: 10 Students.

ENGN 1680: Design and Fabrication of Semiconductor Devices Spring 2013
Enrollment: 9 Students.

ENGN 2980: Special Projects, Reading, Research and Design Spring 2013
Enrollment: 2 Graduate Students (Jing Feng, Patrick Flanigan).

PHYS 2981: Research in Physics Spring 2013
Enrollment: 1 Graduate Student (Pei Liu).

ENGN 0510: Electricity and Magnetism Fall 2012
Enrollment: 115 Students.

ENGN 2980: Special Projects, Reading, Research and Design Fall 2012
Enrollment: 2 Graduate Students (Jing Feng, Patrick Flanigan).

PHYS 2980: Research in Physics Fall 2012
Enrollment: 1 Graduate Student (Pei Liu).

ENGN 1931A: The Physics of Solar Cells Spring 2012
Enrollment: 20 Students.

ENGN 2980: Special Projects, Reading, Research and Design Spring 2012
Enrollment: 3 Graduate Students (Jing Feng, Patrick Flanigan, Pei Liu).

ENGN 0510: Electricity and Magnetism Fall 2011
Enrollment: 126 Students.

ENGN 1970: Independent Studies in Engineering Fall 2011
Enrollment: 1 Undergraduate Student (Kaan Gunay).

ENGN 2980: Special Projects, Reading, Research and Design Fall 2011
Enrollment: 2 Graduate Students (Jing Feng, Patrick Flanigan).

PHYS 2980: Research in Physics Fall 2011
Enrollment: 2 Graduate Students (Pei Liu, Zhen Ye).

ENGN 1680: Design and Fabrication of Semiconductor Devices Spring 2011
Enrollment: 15 Students.

ENGN 1970: Independent Studies in Engineering Spring 2011
Enrollment: 5 Undergraduate Students (Tim Dingman, Kaan Gunay, Vihang Mehta, Aminy Ostfeld, Natalie Serrino).

ENGN 2980: Special Projects, Reading, Research and Design Spring 2011
Enrollment: 1 Graduate Student (Jing Feng).

PHYS 2980: Research in Physics Spring 2011
Enrollment: 2 Graduate Students (Pei Liu, Zhen Ye).

ENGN 0510: Electricity and Magnetism Fall 2010
Enrollment: 88 Students.

ENGN 2980: Special Projects, Reading, Research and Design Fall 2010
Enrollment: 1 Graduate Student (Jing Feng).

PHYS 2980: Research in Physics Fall 2010
Enrollment: 1 Graduate Student (Pei Liu).

ENGN 1970: Independent Studies in Engineering Fall 2010
Enrollment: 2 Undergraduate Students (Timothy Dingman, Vihang Mehta).

ENGN 1931A: The Physics of Solar Cells Spring 2010
Enrollment: 13 Students.

ENGN 0510: Electricity and Magnetism Fall 2009
Enrollment: 116 Students.

Advising:

The following graduate students have completed their Ph.D. requirements and have graduated:

1. Tianyi Shen, Ph.D. in Engineering (sole advisor, 2015-2020, Graduated in 2020)
2. Stylianos Siontas, Ph.D. in Engineering (primary advisor, 2014-2018, co-advised with Prof. A. Zaslavsky, Graduated in 2018)
3. Jing Feng, Ph.D. in Engineering (sole advisor, 2010-2016, Graduated in 2016)
4. Pei Liu, Ph.D. in Physics (sole advisor, 2010-2015, Graduated in 2015)
5. Patrick Flanigan, Ph.D. in Electrical Engineering (sole advisor, 2011-2015, Graduated in 2015)
6. Vince Siu, Ph.D. in Biomedical Engineering, co-advised with Prof. G. Tayhas R. Palmore (2010-2013, Graduated in 2013)

One student (Jing Feng, sole advisor) was enrolled in the *Open Graduate Education Program* at Brown (graduated in 2016).

Post-Graduate Research Advisor for:

1. Dongfang Li, Brown Ph.D. in Physics (2014-2018)

Graduate Research Advisor for:

1. Ryan Weiss, Ph.D. in Physics (2021-present), co-advised with Prof. A. Zaslavsky.
2. Rachel Odessey, Ph.D. in Engineering (2019-2021)
3. Sue Shi, Ph.D. in Engineering (2020-2021), primary advisor (co-advisor: Prof. A. Zaslavsky)
4. Tianyi Shen, Ph.D. in Engineering (2016-2020)
5. Stylianos Siontas, Ph.D. in Engineering (2014-2018), primary advisor (co-advisor: Prof. A. Zaslavsky)
6. Jing Feng, Ph.D. in Electrical Engineering (2010-2016)
7. Zhen Ye, Ph.D. in Physics (Jan.-Dec. 2011)
8. Peng Zhang, Ph.D. in Physics, co-advised with Prof. Alexander Zaslavsky (2012-2015)
9. Son T. Le, Ph.D. in Physics, co-advised with Prof. Alexander Zaslavsky (2010-2012)
10. Pei Liu, Ph.D. in Physics (2010-2015, Graduated in 2015)
11. Patrick Flanigan, Ph.D. in Electrical Engineering (2011-2015, Graduated in 2015)
12. Vince Siu, Ph.D. in Biomedical Engineering, co-advised with Prof. G. Tayhas R. Palmore (2010-2013, Graduated in 2013)

Master Student Advisor for:

1. Qiwen Tan (2018-2019)
2. Weishi Yuan (2018-2019)
3. Dingdong Li (2016-2018)
4. Tianyi Shen (2015-2016)

Undergraduate Senior Honors Thesis Advisor for:

1. Alec Roelke, Computer Engineering (2009-2012)
2. Aminy Ostfeld, Electrical Engineering (2009-2011)
3. Tim Dingman, Engineering-Physics (2010-2011)
4. Kaan Gunay, Mechanical Engineering (2011-2013)
5. Drew Morrill (2012-2013) "Leallyn B. Clapp Prize for Outstanding Senior Honors Thesis in Chemical Physics"
6. Lila Rodgers, Electrical Engineering (2015-2016)
7. Andrew Stearns, Engineering/Physics (2016-2017)
8. Sophia Gluskin-Braun, Electrical Engineering (2015-2017)
9. Henry Wyatt Sharpe, Electrical Engineering (2016-2017)
10. Sartaj Aujla, Electrical Engineering (2016-2017)

Undergraduate Research Advisor for:

1. Sartaj Aujla
2. Henry Wyatt Sharpe
3. Andrew Stearns
4. Jessica Cheng
5. Giorgio Savini Zangrandi
6. Lila Rodgers
7. Sophia Gluskin-Braun
8. Ramiro Porras
9. Kevin Argueta
10. Drew Morrill
11. Abigail Plummer
12. Emily Toomey
13. Adam Siegel
14. Oussama Fadil (capstone project)
15. Matthew Breuer
16. Stephen Palazola
17. Tim Dingman
18. Kaan Gunay
19. Alec Roelke
20. Vihang Mehta
21. Natalie Serrino
22. Aminy Ostfeld

Visiting Graduate Student Advisor for:

1. Salvatore Cosentino (University of Catania, Summer 2010, Fall 2011, Spring 2012)

Visiting Undergraduate Student Advisor for:

1. Clayton Inman (Case Western University, Summer 2015)

Undergraduate Teaching and Research Awards (UTRA):

1. Giorgio Savini Zangrandi, 2016 Summer UTRA
2. Sophia Gluskin-Braun, 2015 Fall UTRA, 2016 Summer UTRA
3. Ramiro Porras, 2015 Fall UTRA
4. Kevin Argueta, 2015 Summer UTRA
5. Abigail Plummer, 2012 Summer UTRA
6. Kaan Gunay, 2012 Summer UTRA
7. Alec Roelke, 2011 Summer UTRA
8. Stephen Palazola, 2011 Summer UTRA
9. Aminy Ostfeld, 2010 Summer UTRA
10. Natalie Serrino, 2010 Fall UTRA

Other Undergraduate Awards:

1. Aminy Ostfeld, 2010 Tau Beta Pi Scholarship
2. Anastassia Astafieva, 2011–2012 Doris M. and Norman T. Halpin Prize for Interdisciplinary Senior Capstone Projects
3. Kaan Gunay, recipient of the 2012 Maurice R. Seguin Winter Stipend
4. Drew Morrill, 2012-2013 Leallyn B. Clapp Prize for Outstanding Senior Honors Thesis in Chemical Physics
5. Abigail Plummer, winner of the 2014–2015 Astronaut Scholarship Foundation's Scholarship

Host for Visiting Scientist:

1. Robert J. Walters, Integrated Plasmonics Corporation (2012)

Advisor for the following high school students who performed research in the Pacifici Labs:

1. Michael Zaslavsky (Summer internship, 2012)
2. Clayton Inman (Summer internship, 2012, 2013)
3. Aurora White (Summer internship, 2014)
4. Anjaney Srivastav (Summer internship, 2015)

Academic Advisor for first-year (~7/year) and sophomore (~7/year) students.

Concentration Advisor for Ofek Weitzman (Independent Concentration, "Renewable Energy Innovation").

Thesis Advisor:

Ph.D. Theses:

1. Jing Feng, Ph.D. in Electrical Engineering (2010-2016)
    a. Title: "*Plasmonic Interferometry: A New Approach toward Highly-Sensitive Multispectral Biochemical Detection*" (2016)

2. Pei Liu, Ph.D. in Physics (2010-2015)
    a. Title: "*Amorphous Germanium Nanostructures: Optical Characterization and Applications for Improved Photodetector Performance*" (2015)
3. Patrick Flanigan, Ph.D. in Electrical Engineering (2011-2015)
    a. Title: "*Plasmonic Interferometry in Systems with Single or Multiple Scatterers: Experiments, Simulations, and Applications*" (2015)
4. Vince Siu, Ph.D. in Biomedical Engineering (2010-2013)
    a. Title: "*Development of Electrochemical, Microbial and Optical Methods at the Nano-Scale for High-Throughput Biochemical Sensing*" (2013)
5. Stylianos Siontas, Ph.D. in Engineering (2014-2018)
    a. Title: "*Silicon/Germanium and Perovskite Optoelectronic Devices for Photodetection and Photovoltaics*" (2018)
6. Tianyi Shen, Ph.D. in Engineering (2015-2020)
    a. Title: "*Plasmonic Nanostructures for Perovskite Photovoltaics, Structural Coloration and Optical Coherence Modulation*" (2020)

Master Theses:

7. Qiwen Tan (2019-2020)
    a. Title: "Plasmonic nanostructure arrays for absorption enhancement in $MAPbI_3$ perovskite solar cells" (2020)
8. Dingdong Li (2016-2018)
    a. Title: "*Human TREM2 Detection based on Functionalized Plasmonic Interferometry Biosensor*" (2018)
9. Tianyi Shen (2015-2016)
    a. Title: "*FDTD Simulations on Plasmonic Enhanced Perovskite Solar Cells and Anodic Aluminum Oxide Physical Coloration*" (2016)

Honors Theses:

10. Alec Roelke, Computer Engineering (2009-2012)
    a. Title: "*High-Throughput, Nanoscale Plasmonic Interferometers for Biochemical Sensing*" (2012).
11. Aminy Ostfeld, Electrical Engineering (2009-2011)
    a. Title: "*Plasmonic Concentrators for High-Efficiency Thin-Film Organic Photovoltaics*" (2011).
12. Tim Dingman, Engineering-Physics (2010-2011)
    a. Title: "*Amorphous Silicon Solar Cell with Plasmonic Backing*" (2011)
13. Kaan Gunay, Mechanical Engineering (2011-2013)
    a. Title: "*Universal Behavior and Polarization Dependence of Light Transmission through Individual Nanoapertures in Metal Films*" (2013)
14. Drew Morrill (2012-2013)
    a. Title: "*Plasmonic Interferometry and the Measurement of Optical Coherence*" (2013)
15. Lila Rodgers, Electrical Engineering (2015-2016)
    a. Title: "*A Fourier–Transform Spectrometer based on Plasmonic Interferometry*" (2016)
16. Andrew Stearns, Engineering/Physics (2016-2017)
    a. Title: "*Controlling the Degree of Spatial Coherence with Plasmonic Nano-Apertures and Hole Arrays*" (2017)
17. Sophia Gluskin-Braun, Electrical Engineering (2015-2017)
    a. Title: "*Nanoimprint Lithography for High Efficiency Perovskite Solar Cells*" (2017)
18. Henry Wyatt Sharpe, Electrical Engineering (2016-2017)

   a. Title: "*Optical and Electrical Simulation of a Double-Polished, Thin-Film Silicon PERC Solar Cell with Front-Surface Silver Nanodisks*" (2017)

19. Sartaj Aujla, Electrical Engineering (2016-2017)
   a. Title: "*Near Infrared Optical and Electrical Characterization of High Efficiency Crystalline Ge-Quantum Dots/SiO2/Si MOS Photodetectors*" (2017)