September, 2017

Dvir Yelin

Curriculum Vitae

Faculty of Biomedical Engineering
Technion – Israel Institute of Technology
Date of Birth: July 11, 1969
Place of Birth: Israel
Full name: Dvir Yelin

ACADEMIC DEGREES:

1997-2002: **Ph.D. in Physics**
Department of Physics of Complex Systems, Weizmann Institute of Science, Israel.

1995-1997: **M.Sc. in Physics**
Department of Physics of Complex Systems, Weizmann Institute of Science, Israel.

1992-1995: **B.Sc. in Physics**
The Hebrew University, Jerusalem, Israel.

ACADEMIC APPOINTMENTS:

2012-Present: Associate Professor, Faculty of Biomedical Engineering, Technion – Israel Institute of Technology, Haifa, Israel

2007-2012: Assistant Professor, Faculty of Biomedical Engineering, Technion – Israel Institute of Technology, Haifa, Israel

2004-2007: Instructor, Wellman Center for Photomedicine, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA

2002-2004: Post-Doctoral Research Fellow, Wellman Center for Photomedicine, Massachusetts General Hospital, Harvard Medical School, Boston, MA, USA

RESEARCH INTERESTS

My research interests in biomedical optics include (1) the study of new approaches for medical endoscopy, (2) the development of noninvasive microscopy of blood cells, (3) the study of a system for noninvasive Doppler imaging of tissue vibrations, and (4) the development of novel therapeutic approaches for plasmonic targeting of cancer cells using femtosecond pulses.

TEACHING EXPERIENCE

1. Fundamentals of Biomedical Optics and Photonics, undergraduate level, mandatory, 3 points (2009)
2. Applications of Biomedical Optics, undergraduate and graduate level, 2.5 credit points (2008)
3. Methods in Biomedical Optical Microscopy, graduate level, 2 credit points (2010)

TECHNION ACTIVITIES

Laboratory set-up: 2007-2008

Established a state-of-the-art Biomedical Optics research laboratory in the Faculty of Biomedical Engineering. The laboratory is equipped with high-intensity amplified femtosecond laser system (two titanium sapphire oscillators, a regenerative amplifier, and an optical parametric amplifier), supercontinuum light sources, four optical tables, a Zeiss LSM710 confocal microscope, a two-photon microscope, an automatic time-lapse microscope with stage incubator, several spectrometers, function generators, oscilloscopes, power supplies, optical power meters, motorized translation stages, and a variety of optical and optomechanical components. Cell and tissue culture facilities include chemical and biological safety hoods, water purification system, a centrifuge, incubator, freezer and electrophoresis modules for proteins and RNA analysis.

Curriculum Development: 2008-2010

1. Developed three new courses for the undergraduate curriculum in Biomedical Engineering: Fundamentals of Biomedical Optics and Photonics, Application of Biomedical Optics, Methods in Optical Microscopy.
2. Developed new research module for the undergraduate laboratories: Optical Imaging of the Skin.

Committees

2016-present: Technion Academic Council for Extracurricular Studies
2017: Technion excellence program committee member
2017: Technion Russell Berrie Nanotechnology Institute prize committee member

DEPARTMENTAL ACTIVITIES

2009-2011: Technion Biomedical Engineering Graduate Studies Committee
2015-2016: Technion Biomedical Engineering Undergraduate Studies Committee

PUBLIC PROFESSIONAL ACTIVITIES

Editorial duties

2017- Associate Editor, Biomedical Optics Express (The Optical Society of America)

Ad-hoc reviewer

Nature Photonics, Scientific Reports, Optics Letters, Optics Express, Biomedical Optics Express, Applied Optics, Journal of Optical Society of America B, Journal of Biomedical Optics, Israel Science Foundation, US-Israel Binational Science Foundation, Chief Scientist Office – Israel Ministry of Health.

Conference duties

2017 Program Committee member - International Laser Applications in Life Sciences (LALS) 2018, Bar Ilan University, Israel.
2016 Program Committee member - Optical Coherence Imaging Techniques and imaging in scattering media, Conference EB-106, ECBO
2016 Program Committee member - Frontiers in Ultrafast Optics: Biomedical, Scientific, and Industrial Applications XVI, Photonics West, BIOS

2016 Session Chair – Israel Society for Microscopy ISM2016, Session LS5, Haifa, Israel
2015 Session Chair – Optical Coherence Imaging Techniques in Microscopy, ECBO, Conference 9541, Munich, Germany
2014 Session Chair – Spectral Encoding, Photonics West, BIOS, Conference 8927A, San Francisco CA, USA
2014 Session Chair – Mechanism of plasmon-mediated manipulation of cells, Photonics West, LASE, Conference 8972, San Francisco CA, USA
2014 Session Chair – Medical imaging I, 1st Global Conference on Biomedical Engineering, Tainan, Taiwan
2013 Session Chair – Advance in SEE Technology, Photonics West, BIOS, Conference 8757, San Francisco CA, USA
2013 Session Chair – Optical Imaging, ICBME 3013, Session A7, Singapore
2012 Session Chair – Spectral Encoding, Photonics West, BIOS, Conference 8217, San Francisco CA, USA

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Optical Society of America
SPIE - The International Society for Optical Engineering

FELLOWSHIPS, AWARDS AND HONORS

2012 Hershel Rich Technion Innovation Award
2011 The JULUDAN Research Prize Fund
2006 Career Development Award from the Center for Integration of Medicine and Innovative Technology (CIMIT)
1998 Excellence prize for M.Sc. thesis from the Feinberg graduate school of the Weizmann Institute

GRADUATE STUDENTS

Completed Ph.D. theses

1. Adel Zeidan, PhD. Thesis title: Miniature spectrally encoded endoscopy. Graduation year: 2016
2. Gili Bisker, PhD. Thesis title: Nano-manipulations of bio-molecular targets using femtosecond pulses mediated by nanoparticles. Graduation year: 2014
3. Lior Golan, PhD. Thesis title: Imaging of flowing cells using spectrally encoded confocal microscopy. Graduation year: 2012

Ph.D. theses in progress

4. Ariel Wiegler, Student since 2016, Thesis title: Measuring hematocrit levels in blood by spectrally encoded flow cytometry. Expected graduation: 2020

Completed M.Sc. theses

1. Michal Merman, M.Sc. Thesis title: Vibration Measurements using Spectrally-Encoded Endoscopic Doppler Imaging. Graduation year: 2011
2. Alexander Fertman, M.Sc. Thesis title: Image transmission through a multimode optical fiber using numerical phase retrieval. Graduation year: 2013

3. Avi Abramov, M.Sc. Thesis title: Miniature Multiple Channel Spectrally Encoded Endoscopy. Graduation year: 2011
4. Omri Warshavski, MSc. Thesis title: Ultrashort pulse - nanoparticle interactions in biological medium. Graduation year: 2011
5. Guy Engel, M.Sc. Thesis title: Miniature Probes for Spectrally Encoded Endoscopy. Graduation year: 2012
6. Ovadia Ilgayev, M.Sc. Thesis title: Imaging vocal folds vibrations using spectrally encoded interferometry. Graduation year: 2013
7. Tal Elhanan, M.Sc. Thesis title: Spectrally encoded flow cytometry in vivo imaging. Graduation year: 2014
8. Yair Bar-Ilan, M.Sc. Thesis title: Spectral imaging using spatial spectral encoding Graduation year: 2014
9. Kfir Akons, Student since 2015, Thesis title: Measurement of Oxygen Saturation Level in Blood by Spectrally Encoded Flow Cytometry. Graduation year: 2017

M.Sc. theses in progress

10. Svetlana Gerchin, Student since 2015, Thesis title: Imaging acoustic vibrations in tissue using spectrally encoded interferometry. Expected graduation: 2017
11. Matan Weiner, Student since 2015, Thesis title: Mobile system and probe for spectrally encoded flow cytometry in patients. Expected graduation: 2017
12. Inna Kviatkovsky, Student since 2015, Thesis title: Effect of femtosecond pulses on cancer cells conjugated by gold nanoparticles. Expected graduation: 2017
13. Julia Belansky, Student since 2016, Thesis title: Plasmonic cell manipulations using femtosecond pulses. Expected graduation: 2018
14. Matan Hamra, Student since 2017, Thesis title: Imaging acoustic vibrations in the tympanic membrane using spectrally encoded interferometry. Expected graduation: 2019

RESEARCH GRANTS

1. Title: Imaging tissue micro-mechanical environment. Funding agency: US-Israel Binational Science Foundation, Role: PI. Awarded budget $210,000 for 4 years (2014-2018).
2. Title: Noninvasive blood microscopy for patient diagnosis. Funding agency: Israel Science Foundation, Role: PI. Awarded budget $350,000 for 5 years (2014-2019).
3. Title: Spectrally encoded flow cytometry. Funding agency: Gurwin Foundation. Role: PI. Awarded budget $100,000 for 1 year (2013).
4. Title: From Nose to Brain: Functional Neuroimaging and Brain Stimulation Using Miniature and Ultra-Long Endoscopes. Funding agency: Adelis Foundation. Role: PI. Co-PI: Prof. Noam Sobel. Awarded budget (total) $100,000 for 1 year (2012).
5. Title: Spectrally encoded flow cytometry. Funding agency: European Reseach Council – Proof of Concept Grant. Role: PI. Awarded budget $200,000 for 1.5 years (2012).
6. Title: Quantitative study of nanoparticles targeted to cancer cells using reflectance confocal microscopy *in vivo*. Funding agency: Bar-Ilan University - Technion "Nevet". Role: PI. Co-PI: Prof. Rachela Popovtzer. Awarded budget (total) $40,000 for 1 year (2011).

7. Title: Reflectance confocal microscopy for muscle imaging in situ. Funding agency: NRF-Technion Seed Grant. Role: PI. Co-PI: Prof Chen Nanguang. Awarded budget (total) $200,000 for 1 year (2010).
8. Title: Multiphoton Ionization Nano-Therapy. Funding agency: European Research Council Starting Grant. Role: PI. Awarded budget: $2,500,000 for 5 years (2009-2014).
9. Title: Systems and probes for spectrally encoded endoscopy. Funding agency: Israel Science Foundation, Role: PI. Awarded budget: $200,000 for 4 years (2009-2013).
10. Funding agency: Converging Technology Grant from the Planning and Budgeting Committee, Council for Higher Education. Role: PI. Awarded budget: $750,000 (2007).
11. Startup grant. Funding agency: Lorey Lokey center for Life Sciences and Engineering. Role: PI. Awarded budget: $1,350,000 (2007).

PUBLICATIONS

Theses

1. Third-Harmonic Generation Microscopy, Ph.D. Thesis.
2. Adaptive femtosecond pulse compression and shaping, M.Sc. Thesis

Refereed papers in professional journals

1. "Adaptive Ultrashort Pulse Compression and Shaping", D. Meshulach, D. Yelin and Y. Silberberg, ***Opt. Communications*** 138, 345 (1997).
2. "Real-Time Spatial-Spectral Interference Measurements of Ultrashort Optical Pulses", D. Meshulach, D. Yelin and Y. Silberberg, ***J. Opt. Soc. Am. B.*** 14, 2095 (1997).
3. "White Light Dispersion Measurements by One and Two-Dimensional Spectral Interference", D. Meshulach, D. Yelin and Y. Silberberg, ***IEEE J. Quant. Elec.*** 33, 1969 (1997).
4. "Adaptive Femtosecond Pulse Compression", D. Yelin, D. Meshulach and Y. Silberberg, ***Opt. Lett.*** 22, 1793 (1997).
5. "Adaptive Real-Time Femtosecond Pulse Shaping", D. Meshulach, D. Yelin and Y. Silberberg, ***J. Opt. Soc. Am. B.*** 15, 1615 (1998).
6. "Phase-Matched Third-Harmonic Generation in a Nematic Liquid Crystal Cell", D. Yelin, Y. Barad, J. S. Patel and Y. Silberberg, ***Phys. Rev. Lett.*** 82, 3046 (1999).
7. "Depth-Resolved Imaging of Nematic Liquid Crystals by Third Harmonic Microscopy", D. Yelin, Y. Barad, J. S. Patel and Y. Silberberg, ***Appl. Phys. Lett.*** 74, 3107 (1999).
8. "Laser Scanning Third-Harmonic-Generation Microscopy in Biology", D. Yelin and Y. Silberberg, ***Opt. Express*** 5, 169 (1999).
9. "Laser Scanning Third-Harmonic Generation Microscopy in Biology", D. Yelin and Y. Silberberg, ***Nonlinear Optics*** 24, 267 (2000).
10. "Third-Harmonic Microscopy with a Titanium-Sapphire Laser", D. Yelin, D. Oron, E. Korkotian, M. Segal and Y. Silberberg, ***Appl. Phys. B.*** DOI 10.1007/s00340-002-0884-x (2002).
11. "Quantum Control of Coherent Anti-Stokes Raman Processes", D. Oron, N. Dudovich, D. Yelin and Y. Silberberg, ***Phys. Rev. A.*** 65, 043408 (2002).
12. "Narrow Band coherent Anti-Stokes Raman Signals from Broadband Pulses", D. Oron, N. Dudovich, D. Yelin and Y. Silberberg, ***Phys. Rev. Lett.*** 88, 063004 (2002).

13. "Multiphoton Plasmon-Resonance Microscopy", D. Yelin, D. Oron, S. Thiberge, E. Moses and Y. Silberberg, ***Opt. Express*** 11, 1385 (2003).
14. "Depth-Resolved Structural Imaging by Third-Harmonic Generation Microscopy", D. Oron, D. Yelin, E. Tal, S. Raz, R. Fachima and Y. Silberberg, ***J. Struct. Biol.*** 147, 3 (2004).
15. "Three-Dimensional Spectrally Encoded Imaging", D. Yelin, B. E. Bouma, N. Iftimia, and G. J. Tearney, ***Opt. Lett.*** 28, 2321 (2003).
16. "Generating an Adjustable Three-dimensional Dark Focus", D. Yelin, B. E. Bouma, and G. J. Tearney, ***Opt. Lett.*** 29, 661 (2004).
17. "Double-clad fiber for endoscopy", D. Yelin, B. E. Bouma, S. H. Yun, and G. J. Tearney, ***Opt. Lett.*** 29, 2408 (2004).
18. "Three-dimensional imaging using spectral encoding heterodyne interferometry", D. Yelin, S. H. Yun, B. E. Bouma, and G. J. Tearney, ***Opt. Lett.*** 30, 1794 (2005).
19. "Spectral- and frequency-encoded fluorescence imaging", J. T. Motz, D. Yelin, B. J. Vakoc, B. E. Bouma, and G. J. Tearney, ***Opt. Lett.*** 30, 2760 (2005).
20. "Early molecular effects of ethanol during vertebrate embryogenesis", R. Yelin, H. Kot, D. Yelin, and A. Fainsod, ***Differentiation*** 75, 393 (2007).
21. "Three-dimensional miniature endoscopy", D. Yelin, I. Rizvi, W. M. White, J. T. Motz, T. Hasan, B. E. Bouma, and G. J. Tearney, ***Nature*** 443, 765 (2006).
22. "Large area confocal microscopy", D. Yelin, C. Boudoux, B. E. Bouma, and G. J. Tearney, ***Opt. Lett.*** 32, 1102 (2007).
23. "Spectral-domain spectrally-encoded endoscopy", D. Yelin, W. M. White, Seok. H. Yun, J. T. Motz, B. E. Bouma, and G. J. Tearney, ***Opt. Express*** 15, 2432 (2007).
24. "Laser speckle imaging using optical fiber bundles: Implications for the intravascular characterization of atherosclerotic plaque", S. K. Nadkarni, D. Yelin, B. E. Bouma, and G. J. Tearney, ***Am. J. Cardiol.*** 100, 138L (2007).
25. "Multimodality optical imaging of embryonic heart microstructure", R. Yelin, D. Yelin, W. Y. Oh, S. H. Yun, C. Boudoux, B. J. Vakoc,B. E. Bouma, and G. J. Tearney, ***J. Biomed. Opt.*** 12, 064021 (2007).
26. "Laser speckle imaging of atherosclerotic plaques through optical fiber bundles", S. N. Nadkarni, B. E. Bouma, D. Yelin, A. Gulati, and G. J. Tearney, ***J. Biomed. Opt.*** 13, 054016 (2008).
27. "Volumetric sub-surface imaging using spectrally encoded endoscopy", D. Yelin, B. E. Bouma, and G. J. Tearney, ***Opt. Express*** 16, 1748 (2008).
28. "Doppler imaging using spectrally-encoded endoscopy", D. Yelin, B. E. Bouma, J. J. Rosowsky, and G. J. Tearney, ***Opt. Express*** 16, 14836 (2008).
29. "Spectrally-encoded color imaging", D. Kang, D. Yelin, B. E. Bouma, and G. J. Tearney, ***Opt. Express*** 17, 15239 (2009).
30. "Theoretical analysis of spectrally encoded endoscopy", M. Merman, A. Abramov, and D. Yelin, ***Opt. Express*** 17, 24045 (2009).
31. "Multiple-channel spectrally encoded imaging", A. Abramov, L. Minai, and D. Yelin, ***Opt. Express*** 18, 14745 (2010).
32. "Flow cytometry using spectrally encoded confocal microscopy", L. Golan and D. Yelin, ***Opt. Lett.*** 35, 2218 (2010).
33. "Effect of single femtosecond pulses on gold nanoparticles", O. Warshavski, L. Minai, G. Bisker, and D. Yelin, ***J. Phys. Chem. C.*** 115, 3910 (2011).
34. "Dispersion management for controlling image plane in Fourier-domain spectrally encoded endoscopy", M. Merman and D. Yelin, ***Opt. Express*** 19, 4777 (2011).

35. "Spectrally encoded spectral imaging", A. Abramov, L. Minai, and D. Yelin, ***Opt. Express*** 19, 6913 (2011).
36. "Optical nano-manipulations of malignant cells: controlled cell damage and fusion", L. Minai, D. Yeheskely-Hayon, L. Golan, G. Bisker, E. J. Dann, and D. Yelin, ***Small*** DOI: 10.1002/smll.201102304 (2012).
37. "Controlled fabrication of gold nanoparticles and fluorescent proteins conjugates", G. Bisker, L. Minai, and D. Yelin, ***Plasmonics*** DOI 10.1007/s11468-012-9349-1 (2012).
38. "Noble metal nanoparticles and short pulses for nano-manipulations – theoretical analysis", G. Bisker and D. Yelin", ***J. Opt. Soc. B.*** 29 1383 (2012).
39. "Noninvasive imaging of flowing blood cells using label-free spectrally encoded flow cytometry", L. Golan, D. Y. Hayon, L. Minai, E. J. Dann and D. Yelin", ***Biomed. Opt. Express*** 3, 1455 (2012).
40. "Controlled release of Rituximab from gold nanoparticles for phototherapy of malignant cells", G. Bisker, D. Yeheskely-Hayon, L. Minai and D. Yelin, **J. Controlled Release** 162, 303 (2012).
41. "Dual-channel spectrally encoded endoscopic probe", G. Engel, H. Genish, M. Rosenbluh, and D. Yelin", ***Biomed. Opt. Express*** 3, 1855 (2012).
42. "High-speed interferometric spectrally encoded flow cytometry", L. Golan, D. Yeheskely-Hayon, L. Minai and D. Yelin, ***Opt. Lett.*** 37, 5154 (2012).
43. "Image transmission through an optical fiber using real-time modal phase restoration", A. Fertman and D. Yelin, ***J. Opt. Soc. Am. A.*** 30, 149 (2013).
44. "Optically induced cell fusion using bispecific nanoparticles", D. Yeheskely-Hayon, L. Minai, L. Golan, E. J. Dann, and D. Yelin, ***Small*** 10.1002, 201300696 (2013).
45. "High levels of reactive oxygen species in gold nanoparticle-targeted cancer cells following femtosecond pulse irradiation", L. Minai, D. Yeheskely-Hayon, and D. Yelin, ***Scientific Reports*** 10.1038, srep02146 (2013).
46. "Phase-sensitive imaging of tissue acoustic vibrations using spectrally encoded interferometry", O. Ilgayev, and D. Yelin, ***Opt. Express*** 21, 19681 (2013).
47. "Measuring blood velocity using correlative spectrally encoded flow cytometry", T. Elhanan and D. Yelin, ***Opt. Lett.*** 39, 4424 (2014).
48. "Miniature forward-viewing spectrally encoded endoscopic probe", A. Zeidan and D. Yelin, Opt. Lett. 39, 4871 (2014).
49. "Spectral imaging using single-axis spectrally dispersed illumination", Y. Bar-Ilan and D. Yelin, ***Opt. Lett.*** 39, 5177 (2014).
50. "In-Situ architectures designed in 3D cell-laden hydrogels using microscopic laser photolithography", I. Mironi-Harpaz, L. Hazanov, G. Engel, D. Yelin, and D. Seliktar, ***Adv. Materials*** DOI: 10.1002/adma.201404185 (2015).
51. "Reflectance confocal microscopy of red blood cells: simulation and experiment", A. Zeidan and D. Yelin, Biomed. ***Opt. Express*** 6, 4335 (2015).
52. "Photo-patterning PEG-based Hydrogels for Neuronal Engineering", Y. Berkovitch, D. Yelin, and D. Seliktar, ***European Polymers Journal*** 72, 473-483 (2015).
53. "Spectral imaging using forward-viewing spectrally encoded endoscopy", A. Zeidan and D. Yelin, Biomed. ***Opt. Express*** 7, 392 (2016).
54. "Experimental proof for the role of nonlinear photoionization in plasmonic phototherapy", L. Minai, A. Zeidan, D. Yeheskely-Hayon, S. Yudovich, I. Kviatkovsky and D. Yelin, ***Nano Letters*** 16, 4601-4607 (2016).
55. "In vitro hematocrit measurement using spectrally encoded flow cytometry", A. Zeidan, L. Golan and D. Yelin, ***Biomed. Opt. Express*** 7, 4327 (2016).

56. "Measuring sickle cell morphology during blood flow", I. Kviatkovsky, A. Zeidan, D. Yeheskely-Hayon, E. L. Shabad, E. J. Dann and D. Yelin, ***Biomed. Opt. Express*** 8, 1996 (2017).
57. "Imaging acoustic vibrations in an ear model using spectrally encoded interferometry", S. Grechin and D. Yelin, ***Opt. Communications,*** in press (2017).

Papers submitted to professional journals

1. "Noninvasive in vivo microscopy of human leucocytes", M. M. Winer, A. Zeidan, D. Yeheskely-Hayon, L. Golan, L. Minai, E. J. Dann, and D. Yelin, in review (2017).
2. "Measuring blood oxygen saturation along a capillary vessel", K. Akons, E. J. Dann and D. Yelin, in review (2017)
3. "Semi-synthetic hydrogel composition and laser micro-patterning to regulate sciatic nerve regeneration", Y. Berkovitch, N. Cohen, E. Peled, R. Schmidhammer, H. Florian, A. Teuschl, S. Wolbank, D. Yelin, H. Redl, and D. Seliktar, in review (2017).

Book Chapters

1. Y. Silberberg, D. Meshulach, D. Yelin (2000) Adaptive Techniques in Ultrafast Optics, Springer, vol. 75, NATO Science Series, Netherlands, PP 155-162.

Refereed papers in conference proceedings

1. "One-Dimensional and Two-Dimensional Spectral Interference Measurements of Ultrashort Optical Pulses", D. Meshulach, D. Yelin and Y. Silberberg, Proceedings of the SPIE, Jerusalem (1997).
2. "Adaptive shaping of femtosecond pulses", D. Meshulach, D. Yelin and Y. Silberberg, CLEO Europe - Technical Digest, San Francisco, CA (1998).
3. "New Methods in Femtosecond Multiphoton Microscopy", Y. Silberberg, D. Yelin, D. Oron, N. Dudovich, S. Thiberge, Proc. SPIE 4963, 209 (2003).
4. "Imaging Acoustic Vibrations Using Spectrally Encoded Interferometry", M. Merman and D. Yelin, 9th International Conference on Vibration Measurement by Laser and non-Contact Techniques; AIP Conf. Proc. Vol. 1253, 45-49 (2010).

Patents

1. Adaptive Pulse Compressor, D. Yelin, Y. Silberberg, and D. Meshulach, US Patent 6,621,613 (September 2003).
2. Method of and system for selective cell destruction, D. Yelin, Y. Silberberg, and D. Oron, International patent 2004/112882, US Patent 7,498,565 (March 2009).
3. Method and apparatus for three-dimensional spectrally encoded imaging, D. Yelin, B. E. Bouma, N. Iftimia, and G. J. Tearney, US Patent 7,551,293 (June 2009).
4. Systems and methods for generating data based on one or more spectrally-encoded endoscopy techniques, D. Yelin, S. H. Yun, B. E. Bouma, and G. J. Tearney, US Patent 7,796,270 (September 2010).
5. Method and apparatus for optical imaging via spectral encoding, D. Yelin, B. E. Bouma, and G. J. Tearney, US Patent 7,847,949 (December 2010).
6. System, method and arrangement which can use spectral encoding heterodyne interferometry techniques for imaging, D. Yelin, S. H. Yun, B. E. Bouma, and G. J. Tearney, US Patent 7,859,679 (December 2010).

7. Arrangements and methods for providing multimodality microscopic imaging of one or more biological structures, D. Yelin, B. E. Bouma, B. J. Vakoc, WY. Oh and G. J. Tearney, US Patent 7,872,759 (January 2011).
8. Arrangements and methods for facilitating photoluminescence imaging, D. Yelin, J. T. Motz , B. J. Vakoc, B. E. Bouma, and G. J. Tearney, US Patent 7,889,348 (February 2011).
9. Apparatus and methods for measuring vibrations using spectrally-encoded endoscopy, D. Yelin, B. E. Bouma, S. Merchant, J. Rosowski and G. J. Tearney, US Patent 8,384,907 (October 2011).
10. Apparatus for obtaining information for a structure using spectrally encoded endoscopy techniques and methods for producing one or more optical arrangements, D. Yelin, M. Shishkov, B. E. Bouma, N. Iftimia, and G. J. Tearney, US Patent 8,145,018 (March 2012).
11. Arrangements and methods for providing multimodality microscopic imaging of one or more biological structures, D. Yelin, B. E. Bouma, B. J. Vakoc, W. Y. Oh, and G. J. Tearney, US Patent 8,289,522 (October 2012).
12. Method and apparatus for optical imaging via spectral encoding, D. Yelin, B. E. Bouma, and G. J. Tearney, US Patent 8,384,907 (February 2013).
13. Imaging system and related techniques, D. Yelin, B. E. Bouma, and G. J. Tearney, US Patent 8,676,013 (March 2014).
14. Apparatus and method for obtaining and providing imaging information associated with at least one portion of a sample, and effecting such portion(s), D. Yelin, B. E. Bouma, and G. J. Tearney, US patent Application 20130066215 (March 2013).
15. Method and system for manipulating a cell, D. Yelin, L. Minai and D. Yeheskely-Hayon, US Patent Application 20120191163 (July 2012).
16. Apparatus and methods for color endoscopy, D. Yelin. D. Kang, B. E. Bouma, and G. J. Tearney, US Patent Application 20110237892 (September 2011).
17. Vessel imaging system and method, D. Yelin, US Patent 8,780,176 (July 2014).
18. System and method for spectrally encoded imaging, D. Yelin and A. Abramov, US Patent Application 20120025099 (February 2012).
19. Method and system of adjusting a field of view of an interferometric imaging device, D. Yelin and M. Merman, US Patent Application 20100315562 (December 2010).
20. Blood velocity measurement using correlative spectrally encoded flow cytometry, D. Yelin and T. Elhanan, US Patent Application 14751313 (June 2015).
21. A method of estimating properties of red blood cells, D. Yelin and A. Zeidan, US Patent Application PCT/IL2016/051034 (September 2015).
22. Blood oximetry from a single vessel, D. Yelin, US Patent Application PCT/IL2016/051286 (November 2016).

Research reports and other publications

1. “Adaptive Compression and Shaping of Femtosecond Pulses”, D. Meshulach, D. Yelin and Y. Silberberg, Optics and Photonics News 9, 53 (1998).
2. “Third-Harmonic Microscopy in Biology”, D. Yelin and Y. Silberberg, Microscopy and Analysis, November 2000.
3. “Smaller and more informative medical endoscopy”, D. Yelin, SPIE Newsroom. DOI: 10.1117/2.1200812.1425, December 2008.

CONFERENCES

Invited talks

1. "Third-harmonic microscopy", D. Yelin and Y. Silberberg, WNN2, OSA Annual Meeting, Long Beach, California, USA, October 2001.
2. "New methods in femtosecond multiphoton microscopy", Y. Silberberg, D. Yelin, D. Oron, N. Dudovich, S. Thiberge, Proceedings of the SPIE Photonics West, BIOS, 4963-41, San Jose CA, USA, January 2003.
3. "Three-dimensional miniature endoscopy via spectral encoding", D. Yelin, NATO - Advanced Study Institute in Optical Waveguide Sensing and Imaging, Gatineau, Canada, 2006.
4. "Three-dimensional miniature endoscopy through a single fiber via spectral encoding", D. Yelin, I. Rizvi, M. W. White, J. T. Motz, T. Hasan, B. E. Bouma, G. J. Tearney, Photonics West, BIOS, 6433-26, San Jose CA, USA, January 2007.
5. "Interferometric Spectrally Encoded Endoscopy", D. Yelin, B. E. Bouma, J. J. Rosowski, M. E. Ravicz, and G. J. Tearney, OSA Biomedical Optics (BIOMED), St. Petersburg, Florida, USA, March 2008.
6. "Ultra-Miniature, Functional Endoscopy", D. Yelin, The First Peter Brojde Meeting on Innovations in Engineering and Computer Science, Yad Ha-Shmona, Israel, December 2008.
7. "Functional, single-fiber endoscopy", D. Yelin, 2nd OASIS, S3T3, Tel-Aviv, Israel, March 2009.
8. "Fast and Furious: Single femtosecond pulses and gold nanoparticles for targeting molecules and cells", D. Yelin, 2nd International Nanotechnology Conference, Tel-Aviv, Israel, October 2010.
9. "Spatiotemporal confinement of light for nano-manipulations of cells", D. Yelin, D. Yeheskely-Hayon, L. Minai, L. Golan, G. Bisker, Focus on Microscopy 2012, WE-MO1-PAR-A, Singapore, April 2012.
10. "Release of antibodies from gold nanospheres during short-pulse laser phototherapy", D. Yelin, The 8th Annual Meeting of the Israeli Chapter of the Controlled Release Society, Israel, September 2012.
11. "Blood microscope for patient diagnosis", D. Yelin, ISBME Annual Meeting, Haifa, Israel, February 2013.
12. "Nano-plasmonics for specific cell manipulations", D. Yelin, The first Bilateral Israel-Taiwan Life Science Conference, Taipei, Taiwan, December 2013.
13. "Specific manipulations of cancer cells using gold nanoparticles and femtosecond pulses", D. Yelin, D. Yeheskely-Hayon, L. Minai, Photonics West, LASE, 8972-10, San Francisco CA, USA, February 2014.
14. "Biomedical Optics – new approaches for less invasive, more accurate diagnosis", D. Yelin, 1st Global Conference on Biomedical Engineering, Tainan, Taiwan (2014).
15. "Spectrally encoded imaging for clinical diagnosis", D. Yelin, 5th OASIS, Tel-Aviv, Israel, March 2015.
16. "Plasmonic photo-ionization for nanometric scale radiation therapy", D. Yelin, L. Minai, A. Zeidan, D. Yeheskely-Hayon, G. Bisker, European Conferences on Biomedical Optics, 9542-1, Munich, Germany, June 2015.
17. "In vivo microscopy of blood", D. Yelin, Frontiers and Challenges in Laser-Based Biological Microscopy, Telluride, Colorado, USA, August 2015.
18. "Plasmonic photo-ionization for nanometric scale radiation therapy", D. Yelin, L. Minai, A. Zeidan, D. Yeheskely-Hayon, Inna Kviatkovsky, SPIE, The 2nd Israeli Biophotonics Conference (IBPC-2), Paper T32, Bar Ilan University, Israel, December 2015.

19. "Optical Blood Count", D. Yelin, Gordon Research Conference on Lasers in Medicine and Biology, Mount Snow – West Dover, Vermont, USA, July 2016.
20. "In Vivo Optical Blood Count", D. Yelin, 6th OASIS, Tel-Aviv, Israel, February 2017.
21. "In Vivo Microscopy of Blood", D. Yelin, 8th ILANIT/FISEB Conference, Eilat, Israel, Feb 2017.
22. "Effect of nonlinear plasmonic ionization on cancer cells", D. Yelin, L. Minai, Photonics West, BIOS, Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XV, San Francisco CA, USA, January 2018.

Conference abstracts: Oral Presentations (refereed)

1. "Laser scanning third-harmonic-generation microscopy in biology", D. Yelin and Y. Silberberg, 11th international meeting on Electro-optics and microelectronics in Israel, Tel-Aviv, Israel, November 1999.
2. "Third-harmonic microscopy in biology", D. Yelin and Y. Silberberg, 2000 International Quantum Electronics Conference, QFB3, Nice, France, September 2000.
3. "Three-dimensional spectrally encoded imaging", D. Yelin, B. E. Bouma, N. Iftimia and G. J. Tearney, Photonics West, BIOS, 5324-27, San Jose CA, USA, January 2004.
4. "Generating an adjustable three-dimensional dark focus", D. Yelin, B. E. Bouma, and G. J. Tearney, Photonics West, BIOS, 5699-18, San Jose CA, USA, January 2005.
5. "Double-clad fiber for endoscopy", D. Yelin, B. E. Bouma, S. H. Yun, and G. J. Tearney, Photonics West, BIOS, 5701-27, San Jose CA, USA, January 2005.
6. "Three-dimensional imaging using spectral encoding heterodyne interferometry", D. Yelin, S. H. Yun, J. T. Motz, B. E. Bouma, and G. J. Tearney, Photonics West, BIOS, 6090-27, San Jose CA, USA, January 2006.
7. "Spectral-domain spectrally encoded endoscopy", D. Yelin, S. H. Yun, R. Yelin, J. T. Motz, B. E. Bouma, and G. J. Tearney, Photonics West, BIOS, 6079-29, San Jose CA, USA, January 2006.
8. "Subsurface and Doppler spectrally encoded endoscopy", D. Yelin, D. Kang, B. E. Bouma, J. J. Rosowski, G. J. Tearney, Photonics West, BIOS, 6847-12, San Jose CA, USA, January 2008.
9. "Imaging characteristics of spectrally encoded endoscopy", D. Yelin, M. Merman, A. Abramov, Photonics West, BIOS, 7172-07, San Jose CA, USA, January 2009.
10. "Functional, ultra-miniature endoscopy", D. Yelin, 2010 ISBME Annual Meeting, Tel Aviv, Israel, April 2010.
11. "Optical nano-manipulations of malignant cells", D. Yelin, L. Minai, D. Yeheskely-Hayon, L. Golan, G. Bisker, Photonics West, BIOS, 8247-04, San Francisco CA, USA, January 2012.
12. "Dual-channel spectrally encoded endoscopic probe", D. Yelin and G. Engel, Photonics West, BIOS, 8575-20, San Francisco CA, USA, February 2013.
13. "Optical nanomanipulation of malignant cells", D. Yelin, 4th OASIS, Session 3, Tel-Aviv, Israel, February 2013.
14. "Ultrafast plasmonics for manipulating malignant cells: specific therapy and cell fusion", D. Yelin, D. Yeheskely-Hayon, L. Minai, G. Bisker, European Conferences on Biomedical Optics, ETu4D.3, Munich, Germany, May 2013.
15. "Optically induced cell fusion using bispecific gold nanoparticles and femtosecond laser pulses", D. Yelin and D. Yeheskely-Hayon, EMBO Workshop on Cell-Cell fusion, Ein-Gedi, Israel, November 2013.
16. "In vivo blood microscope for patient diagnosis", D. Yelin and L. Golan, ICBME 2013- The 15th international Conference on Biomedical Engineering, Singapore, December 2013.

17. “Spectrally dispersed illumination spectral imaging”, D. Yelin, Y. Bar-Ilan, Photonics West, BIOS, 9304-233, San Francisco CA, USA, February 2015.
18. “Blood cell image comparison between in vitro and in vivo spectrally encoded flow cytometry”, D. Yelin, M. Winer, I. Kviatkovsky, A. Zeidan, L. Minai, E. J. Dann, European Conferences on Biomedical Optics, ETu1D.32, Munich, Germany, June 2017.

Conference abstracts: Poster Presentations (refereed)

1. “Phase-Matched Third-Harmonic Generation in a Nematic Liquid Crystal Cell”, D. Yelin, Y. Barad, J. S. Patel, and Y. Silberberg, PD poster session, OSA Annual Meeting, Baltimore, USA, Oct. 1998.
2. “Spectrally-Encoded Imaging”, D. Yelin, N. Iftimia, M. Shishkov, S. H. Yun, B. E. Bouma, and G. J. Tearney, Gordon Research Conference on Lasers in Medicine and Biology, Meriden, New-Hampshire, USA, July 2004.