CURRICULUM VITAE
DROR FIXLER

Personal Details

Name:	Dror Fixler
Date and place of birth:	October 14, 1969, Israel
Regular military service:	1988-1992
Address:	Faculty of Engineering, Bar-Ilan University, Ramat-Gan, 5290002, Israel,
Home Address:	Ein Shemesh 29, Gany-Tikva, Israel
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Education

B.Sc.	1993-1995	Bar - Ilan University Dept. of Physics Dept. of Computer Science Graduated with 'Excellence'
M.Sc.	1995-1998	Bar - Ilan University Dept. of Physics Dept. of Computer Science Dept. of Life Science Specializing in tracing physical properties in muscle, killer and target cells in different physiological phases by means of fluorescence polarization.
Ph.D.	1999-2003	Bar - Ilan University Dept. of Physics Advisor: Prof. Deutsch, Mordechai Subject: Investigation of the heterogeneous emission of fluorescence probes in individual cells, and its dependence on the cellular physiological state.

Employment History

2020-present Academic position as Full Professor with tenure

Faculty of Engineering, Bar-Ilan University.

Research Interests :

- Nanophotonics;
- Light-Tissues interaction;
- Biomedical imaging based on nanoparticles;
- Fluorescence lifetime and anisotropy decay;

Teaching:

- Electromagnetic fields;
- Advance fluorescence microscopy methods.

12/2017-present Director of the Institute for Nanotechnology and Advanced Materials (BINA), Bar-Ilan University.

2015-2019 Academic position as Associate Professor with tenure

Faculty of Engineering, Bar-Ilan University.

Research Interests :

- Fluorescence lifetime imaging (FLIM);
- Biological imaging based on fluorescence parameters.

Teaching:

- Quantum computing.

2015-2016 Visiting Professor

Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry (TIPC), Chinese Academy of Sciences (CAS), Beijing.

2014-2015 Academic position as Senior Lecture with tenure

Faculty of Engineering, Bar-Ilan University.

Research Interests :

- Super resolution.

Teaching:

- Introduction to Lasers.

2014 Academic position as Visiting Researcher

Physics department, King's Collage London.

2009-2013 Academic position as Lecture

Engineering School, Bar-Ilan University.

Research Interests :

- Biological imaging based on fluorescence parameters;
- Methods of microscopy;
- Wireless communications - Core network and protocols.

Teaching:

- Electro-optics detectors;

2005– 2009 A.G.I CO

Israel China

CTO and member of company management.

Management all aspects of R&D department including development plan and budget estimation, budget control, development methodology and control of project management and the activities in front of customer (SOW, Specification, Testing).

2006 Visiting Professor

Biomedical Engineering Department

South China Normal University, Guangzhou 510631 China.

Working at Prof. Da Xing laboratory. Prof. Xing is the director and of SCNU Laser Institute

Research in the area of Microscopy and Fluorescence Life Time, 3-D Super resolution.

2005 Postdoctoral Researcher

Optic Department University of Valencia Spain

Working at Prof. Javier Garcia Monreal laboratory in dealing with Optical Super resolution systems.

Applying super resolution methods over biological microscope.

Measuring fluorescence intensity of individual cell in different biological states, using super resolution methods.

1995 – 2004 Researcher at the Jerome Schottenstein Cellscan Center for Early Detection of Cancer, Physics Department.

1995 – 2004 Lecturer at Bar - Ilan University

Optics and Lasers,

Communication systems,
Electricity,
Linear Algebra,
Differential Equations.

2000–2005 Septier communication

Director of R&D and member of company management.

- Participate on Suggestion and characterize of new company products and entrance to new technology.
- Build GSM MAP protocol stack, for monitor and intrusive systems.
- Marketing support on entrance to new market segments and reply for tender proposal.
- Participate on analysis and implementation of various technical and commercial partnerships.
- Management all aspects of R&D department including development plan and budget estimation, budget control, development methodology and control of project management and the activities in front of customer (SOW, Specification, Testing).

1995 – 2000 ECI Telesystems, ECTel

Project manager and software team's manager.

- Development of telecommunication systems that combine hardware and real time multi tasking embedded software subsystem's (i960, i486, M68360) and IT and Network Management system.
- Development leader of various telecommunication system and projects to variety of communication provider's including: Fraud management system, SS#7 network management and monitoring system, callback blocking system, billing verification and inter exchange billing system.
- Build GSM A-interface stack, for monitor and intrusive systems.
- Management and control of all department projects covering all project issues including hardware software and system design and responsibility for transfer product from development to manufacturing.

Graduate Students

Current:

Post-Doctorate	1. Dr. Shweta Vinod Pawar, Implementing logic gates based on gold nanoparticles. Start: Feb 2020.
PhD	1. Gilad Yahav, r-FLIM experimental system. Start: June 2016. 2. Marianna Beiderman, Development of a Miniaturized Bio-Barcode Sensor Array for Detection of Biological Events Towards Personalized medicine, Start: October 2017. 3. Pavitra SR, start November 2018. 4. Ariel Ashkenazy. Start: October 2020.
Msc	1. Channa Shapira, Start: October 2019. 2. Alon Tzroya, Start October 2021.

Former:

Post-Doctorate	1. Hamootal Duadi, Numerical study of light tissue interactions within irradiated tissue. 5/2011-4/2012. 2. Anat Lipovsky, A Possible Mechanism for Visible Light-induced Wound Healing. 2013-2015. 3. Rinat Ankri-Sela, Arteriosclerotic Vascular Disease Detection and Therapy Using Gold Nanorods. 2013-2017. 4. Dr. Manoop Chenchiliyan, Anisotropy decay of GNR-CD. 2017-2019. 5. Dr. Ruchira Chakraborty, using Gold Nanorods for macrophage subtypes analysis by Flow Cytometery. 2016-2020.
PhD	1. Lior Turgeman, FLIM systems. 10/2009-6/2013. 2. Rinat Ankri, Investigation of radiation transport in heterogeneous tissues. 10/2008-9/2012. 3. Aviram Gur, Extracting Sub Lambda by SR Imaging Methods using Optical Microscope System. 10/2009-10/2011. 4. Said Abu-Ghosh, Photonics and nano-biotechnology: Increasing microalgae production. 10/2012-9/2016. 5. Eran Barnoy, Enzymatic activity tracing based on GNP-fluorophore conjugation. 10/2014-10/2019. 6. Inbar Yariv, Optical characterization of organic nanoparticles in live tissue using iterative method. 10/2014-5/2021. 7. Idit Feder, Time and Frequency Multiplexing as a New Optical Technique for Investigating Tissue Depths Information by Full Scattering Profile Start: 12/2015-8/2021.
Msc	1. Lifang Liang, Single Cell Analysis of PKC Activation During Proliferation and Apoptosis Induced by Laser Irradiation. 10/2005-12/2006.

2. Yaniv Namer, Fluorescence Anisotrophy Decay and Related Parameters of Cellular Fluorescent Probes along the Cell Cycle. 10/2004-12/2005.
3. Shimon.Bezalel, Investigation of Handover process at GSM network. 10/2000-9/2002.
4. Inbar Yariv, Optical characterization of organic nanoparticles in live tissue using iterative method. 10/2012-9/2014.
5. Yair Frnak, A Comparison of the Halachik Principles and the Empiric Reality Regarding Absorption and Emission in Utensils, 10/2012-9/2014.
6. David Ben Yaakov, New method for determination of visibility of stars based on photometric measurement with comparison to human observation, 10/2000-12/2014.
7. Amir Perlman, The Relationship between the Act of Hearing with Regard to Halacha and the Physical Process of an Audio Signal, 4/2012-5/2015.
8. David Matas, Scientific Definition of "Kol Havara", 10/2013-10/2015.
9. Inbar Yariv, Optical characterization of organic nanoparticles in live tissue using iterative method. 10/2012-10/2014.
10. Gilad Yahav, Characterization of Pathological States in the Cellular Level by Fluorescence Lifetime Imaging Microscopy. 10/2013-5/2016.
11. Idit Feder, Linear Dependency of Full Scattering Profile Isobaric Point on Tissue Diameter. 10/2013-11/2014.
12. Tsviya Nayhoz, Development of multi-modal imaging by combining Fluorescence Lifetime Imaging Microscopy (FLIM) and Diffusion Reflection (DR) methods. 10/2013-10/2016.
13. Chen Tzur. Machine learning design for metal enhanced fluorescent nanostructures 10/2015-11/17.
14. Shiran Sudri (D.M.D). Nanophotonics for *in vivo* detection of oral cancer. 10/2017-2/2020.
15. Florin Altman, Optimal gold nanorods (GNRs) syntheses and coating for enhanced diagnosis of oral cancer, 2/2018-3/2020.
16. Ariel Ashkenazy. Characterization of Nanostructures to be used for Entangled-Photon-Pair Interaction 10/2018-9/2020.

Awards

- 1994 - Award of excellence of the Physics Department, Bar - Ilan University (B.Sc. Studies).
- 1996 - Award of excellence of the Dean of the Faculty of Natural Sciences & Mathematics, Bar - Ilan University (M.Sc. Studies).

- 1996 - Award of Otto Schwartz Scholarship Fund, Ministry of Finance, State of Israel for 1996 year (M.Sc. Studies).
- 1997 - Award of excellence of the Physics Department, Bar - Ilan University (Ms.C. Studies).
- 1998 - Award of excellent worker of E.C.I, Petach - Tikva Israel.
- 1999 - Award of Eshkol Scholarships for strategic research, Ministry of Science, State of Israel for Ph.D. studies.
- 2000 - Finalist at the ISAC President's Award for Excellence, USA.
- 2000 - Award of Wolf Foundation to promote science and art for the benefit of mankind, for Ph.D. studies.
- 2000 - Award of Israel Physical Society (IPS) for Ph.D. studies in physics.
- 2001 - Award of Dr. Michael Landau, lottery fund, Israel.
- 2002 - Shoff scholarship for Ph.D. student, Bar-Ilan University president award.
- 2014 - The Academy of Medical Science in England, Lord Turnberg Fellowship.
- 2015 – European Science Foundation (ESF) for PLASMON-BIONANOSENSE award.
- 2015 – President‘s International Fellowship Initiative (PIFI2015VTB041), Chinese Academy of Sciences, Beijing.
- 2016 – Special prize from Bar-Ilan University Rector for outstanding achievements in research for 2015.
- 2017 – President‘s International Fellowship Initiative (PIFI2017VMB0019), Chinese Academy of Sciences, Beijing.
- 2019 – SPIE Fellow.

Grants

- 2010-2011 – Ministry of Science, State of Israel: The Visibility of Stars and the moon during twilight. Grant # 3-6933.
- 2013-2015 – Kamin, Magnet, State of Israel: Deep Light Penetration for Tumor Detection Using Gold Nanorods, Grant # 49546.
- 2014 – Rabin medical centre: Gold nanoparticles and diffusion reflection as a novel technique, Grant #292833.

- 2015 – Gassner Fund for Medical Research: New method for cancer cells detection based on FLIM system, Grant #BIU20-15.
- 2015 – SCR: Detecting concentrations of Lactose in milk by an iterative optical technique, Grant #Moni0115.
- 2015 - Israel Cancer Aossociation: Diffusion reflection, a novel nanophotonic method for early detection of oral cancer, Grant #20150012.
- 2015 - D-CURE: Diabetes Research Grant, Clinical, histological, optical and molecular characteristics of retinal vessels in type II diabetic mice as compared to type I. with Prof. Nitza Goldenberg-Cohen.
- 2015-2016 - Kamin, Magnet, State of Israel: Arteriosclerotic Vascular Disease Detection and Therapy Using Gold Nanorods, Grant #55279.
- 2015-2018 - Israel Science Foundation (ISF): ISF-NSFC program, Developing new multimodal contrast agents based on gold-carbon dots nanohybrids, Grant #2205/15.
- 2016-2017 – Magneton Ministry of Science and Technology, Israel: Novel milk-sensor design by integration of mechanical, optical and mathematical tools, for in-line lactose determination that will serve as a complimentary offering to SCR's milk-meter, Grant #55426.
- 2016-2017 – Pope Project, Proposal for optical detection of lactose amount in milk, Grant #204055.
- 2016-2021 - Nano Photonics- Summer Program, council for higher education (Malag), Grant #45056.
- 2016-2019 – HERON- Next generation cellular networks, MAGNET, Ministry of Science and Technology, Israel.
- 2016-2019 - Israel Science Foundation (ISF) with Prof. Avi Hirshberg: Diffusion reflection, a novel non-invasive nanophotonic method for early *in vivo* detection of oral cancer, TAU #3265.
- 2016-2017 – Industry Grant, Determination of Hyaluronic acid penetration depth in tissues, Zingboim LTD.
- 2017 – Gassner Fund for Medical Research: Theranostics of unstable plaque by HDL coating Gold nanoparticles, collaboration with Prof. Eli Lev from Rabin medical Center, Grant #RABIN12-17.

- 2018 – Ihel foundation: A New Fluorescence Lifetime Imaging Based Non-Invasive Method for Oocyte Selection, Gtant #ihel109.
- 2018-2020 – Mafat grant: Remote sensing of fishing nets in sea using phase retrieval algorithm under opaque conditions.
- 2018-2020 – Kamin, Magnet, State of Israel: Personalized device for accurately diagnosing of physiological condition based on IPL point.
- 2018-2022 – Israel Science Foundation (ISF): Time and frequency multiplexing as a new optical technique for investigating tissue depths information by full scattering profile.
- 2018-2019 – the 1st NSC and BINA collaboration project: Development of Nanoparticles Facilitating Sensitive Fluorescent Measurements in Cellular Vesicles.
- 2020-2023 – WIN- Wireless intelligent networks, MAGNET, Ministry of Science and Technology, Israel (coordinator).
- 2019-2023 – NANOSCALE- Nanopatterned Attachment for Nanometric Optical Standardization, Calibration and Length Estimation, Horizon 2020 Eurostar.
- 2020-2022 - Implementing nano logic gates *in vivo* based on GNP, Israel-Russia Ministry of Science.
- 2020-2022 – Mafat grant: Building a system for a remote sensing of fishing nets in sea.
- 2020-2022- 5G cellular networks, Nofar, Ministry of Science and Technology, Israel.
- 2021 – World Bank (WBG) grant: The global CYBERSECURITY capacity program II.
- 2021-2022 – Mafat grant: Secure 5G Network Slicing.
- 2022 - Ihel foundation: Remote sensing in turbid water of fishing nets using a phase recovery algorithm, Gtant #ihe2205.
- 2021-2024 - **I**srael **G**eneric **B**io**C**hip **T**echnology **C**onsortium, MAGNET, Ministry of Science and Technology, Israel.
- 2022 – INL-BINA glue grant, Sustainable sensor portfolio for wearable application.
- 2023 - Industry Grant, GNPs for cosmetics, Zingboim LTD.

- 2023-2026 – Israel Science Foundation (ISF): A new optical technique for investigating tissue depths information by full scattering profile.

Scientific Publications

In Journals

1. Shweta Pawar, Hamootal Duadi and **Dror Fixler**, Recent Advances in the Spintronic Application of Carbon-Based Nanomaterials, Nanomaterials 13(3), 598 (2023).
2. T. Azrad-Leibovich, A. Zahavi, M. Fridman, S. Michowiz, **Dror Fixler**, Nitza Goldenberg-Cohen, Characterization of Diabetic Retinopathy in Two Mouse Models and Response to a Single Injection of Anti-Vascular Ednothelial Growth Factor, International Journal of Molecular Sciences 24, 324 (2023).
3. P. S. Rudraiah, S. Nandi, H. Duadi and **Dror Fixler**, Deep Tattoo Ink Depth Profiling in Ex Vivo Porcine Skin Using Diffuse Reflectance Spectroscopy, IEEE Journal of Selected Topics in Quantum Electronics, 29,4: Biophotonics 1-6 (2022).
4. O. Girshevitz, N. Cohen-Sinai, A. Zahavi, **Dror Fixler** and N. Goldenberg-Cohen, Trace Elements in Tears: Comparison of Rural and Urban Populations Using Particle Induced X-ray Emission, J. Pers. Med. 12 (10), 1633 (2022).
5. Channa Shapira, Daniel Itshak, Hamootal Duadi, Y. Harel, A. Atkins, A. Lipovsky, R. Lavi, Jean Paul Lellouche, and **Dror Fixler**, Non-invasive nanodiamonds skin permeation profiling using a phase analysis method: *ex vivo* experiments, ACS Nano (2022).
6. Ariel Ashkenazy, R. Ron, T. Zar, H. Aharon, A. Salomon, **Dror Fixler** and Eliahu Cohen, Measurement of the Second-Order Polarizability of Silver Nanoparticles with Reference-Free Hyper-Rayleigh Scattering for Entangled Photon Pair Interaction, IEEE Photonics journal 14(4) 1-8 (2022).
7. Shweta Pawar, Hamootal Duadi, Yafit Fleger and **Dror Fixler**, The design and use of gold nanoparticle-carbon dots hybrid for FLIM based IMPLICATION nano logic gate, ACS Omega 26, 22818–22824 (2022).
8. Rachel Lubart, Inbar Yariv, **Dror Fixler** and Anat Lipovsky, A Novel Facial Cream Based on Skin-penetrable Fibrillar Collagen Microparticles, The Journal of Clinical and Aesthetic Dermatology (JCAD) 15(5):59–64 (2022).

9. H.K. Sadhanala, M. Beiderman, **Dror Fixler** and Aharon Gedanken, Boron-doped Carbon Dots with Surface Oxygen Functional Groups as a Highly Sensitive and Label-free Photoluminescence Probe for the Enhanced Detection of Mg^{2+} Ions, ChemistrySelect 7:22 e202201261 (2022).
10. Dudchenko, N.; Pawar, S.; Perelshtein, I. and **D. Fixler**, Magnetite Nanoparticles: Synthesis and Applications in Optics and Nanophotonics. Materials 15, 2601 (2022).
11. R. Ankri, D. Leshem-Lev, H. Duadi, E. Harari, M. Motiei, E. Hochhauser, E.I. Lev and **D. Fixler**, Simultaneous Noninvasive Detection and Therapy of Atherosclerosis Using HDL Coated Gold Nanorods, Diagnostics, 12, 577 (2022).
12. G. Yahav, Y. Weber, H. Duadi, S. Pawar and **D. Fixler**, Classification of Fluorescent Anisotropy Decay Based on the Distance Approach in the Frequency Domain, Optics Express 30(4), 6176-6192 (2022).
13. P.S. Rudraiah, H. Duadi, **D. Fixler**, Diffused reflectance measurements to detect tattoo ink location in skin using the crossover point, J. Biophotonics 15(4), e202200003 (2022).
14. M. Szczerska, M. Kosowska, P. Listewnik, M. Rycewicz, M. Bechelany, Y. Fleger, **D. Fixler** and P. Jakóbczyk, Diamond protection for reusable ZnO coated fiber-optic measurement head in optoelectrochemical investigation of bisphenol A, Measurement 189, 110495 (2022).
15. P.S. Rudraiah, H. Duadi and **D. Fixler**, Bottom layer absorption coefficients extraction from two-layer phantoms based on crossover point in diffuse reflectance, Journal of Biomedical Optics 26 (11), 117001 (2021).
16. M. Beiderman, A. Ashkenazy, E. Segal, M. Motiei, A. Salomon, T. Sadan, **D. Fixler**, R. Popovtzer, Optimization of Gold Nanorod Features for the Enhanced Performance of Plasmonic Nanocavity Arrays. ACS Omega 6 (43), 29071-29077 (2021).
17. I. Feder, H. Duadi and **D. Fixler**, Effect of Spatial Modulated Light on Position of Self-Calibration Point, IEEE Photonics Journal 13(4),1-5 (2021).
18. H. Feldman, M.A. Iron, **D. Fixler**, S. Moshkov, N. Zurgil, and M. Deutsch, Fluorophore Spectroscopy in Aqueous Glycerol Solution: The Non-Innocence of Glycerol and Its Interactions with the Fluorophore, Photochemical & Photobiological Sciences, (2021).

19. C. Shapira, I. Yariv, R. Ankri, H. Duadi and **Dror Fixler**, The effect of optical magnification on the detection of the reduced scattering coefficient in the blue regime: theory and experiments, Optics Express 29(14), 22228-22239 (2021).
20. I. Yariv, S. Kannan, Y. Harel, E. Levy, H. Duadi, J.P. Lellouche, S. Michaeli, and **Dror Fixler**, Iterative optical technique for detecting anti-leishmania nanoparticles in mouse lesion, Biomedical Optics Express 12(7), 4496-4509 (2021).
21. **D. Fixler** and Z. Zalevsky, Comment on "Rapid Image Reconstruction of Structured Illumination Microscopy Directly in the Spatial Domain" and more about Point Spread Function Shaping for Enhanced Imaging Resolution, IEEE Photonics Journal, 13(2) 9600204 (2021).
22. S. Sudri, H. Duadi, F. Altman, I. Allon, A. Ashkenazy, R. Chakraborty, I. Novikov, A. Hirshberg and **Dror Fixler**, Diffusion reflection detecting oral squamous cell carcinoma specifically targeted by circulating gold-nanorods bio-conjugated to anti-epidermal growth factor receptor, International Journal of Nanomedicine 11, 5237—5244 (2021).
23. P. Sokke rudraiah, H. Duadi, and **Dror Fixler**, Extraction of optical properties from a turbid medium using fiber probe for spectral and spatial diffuse reflectance measurement, OSA Continuum 4(2), 762-773 (2021).
24. H. Duadi, I. Feder and **Dror Fixler**, Influence of detector size and positioning on near-infrared measurements and iso-pathlength point of turbid materials, invited paper in Frontiers in Physics Section Optics and Photonics, 9:647281 (2021).
25. Shweta Pawar, Hamootal Duadi, Yafit Fleger and **Dror Fixler**, Carbon dots based logic gates, Nanomaterials as part of Carbon-Based Nanocomposites for Biosensing Approaches special issue 11,232 (2021).
26. S.V. Zar'kov, Yu.A. Avetisyan, A.N. Yakunin, I.G. Meerovich, **Dror Fixler**, A.P. Savitsky, V.V. Tuchin, Interaction of laser radiation and complexes of gold nanoparticles lined to proteins, Quantum Electronics 51(12), 52–63 (2021).
27. R. Chakraborty, D. Leshem-Lev, R. Kornowski, **Dror Fixler**, The Scattering of Gold Nanorods Combined with Differential Uptake, Paving a New Detection Method for Macrophage Subtypes Using Flow Cytometery, Nano Letters, 20(11), 8360-8368 (2020).

28. M. Kosowska, P. Listewnik, D. Majchrowicz, M. Rycewicz, M. Bechelany, Y. Fleger, **Dror Fixler**, M. Szczerska, Microscale diamond protection for a ZnO coated fiber optic sensor, Scientific Reports (Nature publications), 10:19141 (2020).
29. Idit Feder, Hamootal Duadi, **Dror Fixler**, Single wavelength measurements of absorption coefficient based on iso-pathlength point, Biomedical optics express, 11(10) 5760-5771 (2020).
30. Inbar Yariv, Hamootal Duadi, and **Dror Fixler**, Depth scattering characterization of multi-layer turbid media based on iterative multi-plane reflectance measurements, IEEE Photonics Journal, 12(5) 3700713 (2020).
31. M. Beiderman, A. Ashkenazy, M. Motiei, T. Sadan, A. Salomon, S. Rahimipour, R. Popovtzer and **D. Fixler**, Gold Nanorod-Based Bio-Barcode Sensor Array for Enzymatic Detection in Biomedical Applications, ACS Appl. Nano Mater., 3(8) 8414-8423 (2020).
32. Eran A. Barnoy, Rachela Popovtzer and **Dror Fixler**, Fluorescence for biological logic gates, Journal of biophotonics, https://doi.org/10.1002/jbio.202000158 (2020).
33. Andreas Walter, Perrine Paul-Gilloteaux, Birgit Plochberger, Ludek Sefc, Paul Verkade, Julia Mannheim, Paul Slezak, Angelika Unterhuber, Martina Marchetti-Deschmann, Manfred Ogris, Katja Bühler, **Dror Fixler**, Stefan Geyer, Wolfgang Weninger, Martin Glösmann, Stephan Handschuh, Thomas Wanek, Correlated Multimodal Imaging in Life Sciences: Expanding the Biomedical Horizon, Frontiers in Physics, 8 Article 47 (2020).
34. Asaf Olshinka, Dean Ad-El, Elena Didkovski, Ela Kaganovsky, Rinat Ankri, Nitza Goldenberg-Cohen and **Dror Fixler**, Diffusion Reflection Measurements of Antibodies Conjugated to Gold Nanoparticles as a Method to Identify Cutaneous Squamous Cell Carcinoma Borders, Materials 13(2), 447 (2020).
35. Monika Kosowka, Daria Majchrowicz, Mateusz Ficek, Yafit Fleger, **Dror Fixler**, Małgorzata Jędrzejewska-Szczerska, Nanocrystalline diamond sheets as protective coatings for fiber-optic measurement heads, Carbon 156 104-109 (2019).
36. Inbar Yariv, Channa Shapira, Hamootal Duadi, **Dror Fixler**, Media characterization under scattering conditions by nano-photonics iterative multi-plane spectroscopy measurements, ACS Omega 4(10) 14301-14306 (2019).
37. Eran A. Barnoy, Menachem Motiei, Chen Tzror, Shai Rahimipour, Rachela Popovtzer, **Dror Fixler**, Biological Logic Gate Using Gold Nanoparticles and

Fluorescence Lifetime Imaging Microscopy, ACS Applied Nano Materials 2, 6527−6536 (2019). ACS Cover 10.1021/acsanm.9b01457.

38. Inbar Yariv, Hamootal Duadi, Ruchira Chakraborty, and **Dror Fixler**, Algorithm for *in vivo* detection of tissue type from multiple scattering light phase images, Biomedical Optics Express 10(6) 2909-2917 (2019).
39. Gabriel Nakache, Gilad Yahav, Goni Hout Siloni, Iris Barshack, Eran Alon, Michael Wolf and **Dror Fixler**, The use of fluorescence lifetime technology in benign and malignant thyroid tissue, The Journal of Laryngology & Otology 133(8) 696-699 (2019).
40. **Dror Fixler**, Chen Tzur and Zeev Zalevsky, Genetic Algorithms Based Design for Metal-Enhanced Fluorescent Nanostructures, Materials as part of Design and Synthesis of Novel Optical Probes special issue 12(11), 1766 (2019).
41. Ariel Ashkenazy, Kai Wang, Manuel Unternährer, André Stefanov and **Dror Fixler**, Estimation of the Rate of Entangled-Photon-Pair Interaction with Metallic Nanoparticles based on Classical-Light Second-Harmonic Generation Measurements, Journal of Physics B: Atomic, Molecular and Optical Physics 52(14) 145401 (2019).
42. Gilad Yahav, Hilel Hagai Diamandi, Eyal Preter, and **Dror Fixler**, The squared distance approach to frequency domain time-resolved fluorescence analysis, Journal of Biophotonics 12(9) e201800485 (2019).
43. Rachel Lubart, Inbar Yariv, **Dror Fixler** and Anat Lipovsky, A Breakthrough Facial Cream Based on Small Sized Hyaluronic Acid with Enhanced Therapeutic Properties, The Journal of Clinical and Aesthetic Dermatology (JCAD) 12(10):39–44 (2019).
44. Hamootal Duadi, Daqing Piao, **Dror Fixler**, The Self Calibration Iso-Pathlength Point in Cylindrical Tissue Geometry: Solution of Steady-State Photon Diffusion Based on the Extrapolated Zero-Boundary, OSA Continuum 2(1), 92-98 (2019).
45. Ruchira Chakraborty, Rinat Ankri, Dorit Leshem-Lev, Edith Hochhauser, Ran Kornowski, Menachem Motiei, Eli I. Lev and **Dror Fixler**, Hyperlipidemic mouse as a model for a real-time *in vivo* detection of atherosclerosis by gold nanorods based diffusion reflection technique, Journal of Biophotonics 12(1) e201800218 (2019).
46. Gal Elhalel, Colin Price, **Dror Fixler**, Asher Shainberg, Cardioprotection from stress conditions by weak magnetic field in the Schumann Resonance band, Scientific Reports (Nature publications) 9:1645 (2019).

47. Manoop Chenchiliyan, Dana Adler, Ruchira Chakraborty, Tal Shahar Ben-Gal, Assaf Deutsch, Eliahu Pewzner, Asher Shainberg, Hamootal Duadi, **Dror Fixler**, Dynamic ratio-metric imaging of cytosolic free Ca^{2+} in skeletal muscle cells using 340/385 nm light emitting diode illuminators, IEEE photonics journal 10(6), 1-10 (2018).
48. Inbar Yariv, Hamootal Duadi, **Dror Fixler**, An optical method to extract the reduced scattering coefficient from tissue: theory and experiments, Optics letters 43(21), 5299-5302 (2018).
49. Niu Yuefang, Ling Guo, Wang Li, Xie Zheng, Eran A. Barnoy, Zhou Shuyun, **Dror Fixler**, Gold Rod-Polyethylene Glycol-Carbon Dots Nanohybrids as Phototheranostic Probes, Nanomaterials 8(9), 706 (2018).
50. Rinat Ankri, Ruchira Chakraborty, Menachem Motiei, and **Dror Fixler**, Three-Dimensional Highly Sensitive Diffusion Reflection-Based Imaging Method for the *In Vivo* Localization of Atherosclerosis Plaques Following Gold Nanorods Accumulation, ACS Omega 3(6) 6134–6142 (2018).
51. Gilad Yahav, Sivan Gershanov, Mali Salmon-Divon, Haim Ben-Zvi, Gabriel Mircus, Nitza Goldenberg-Cohen, and **Dror Fixler**, Pathogen Detection Using Frequency Domain Fluorescent Lifetime Measurements, IEEE Transactions on Biomedical Engineering 65(12) 2731-2741 (2018).
52. Idit Feder, Hamootal Duadi, Ruchira Chakraborty and **Dror Fixler**, Self-Calibration Phenomenon for Near-infrared Clinical Measurements: Theory, Simulation and Experiments, ACS Omega 3(3) 2837–2844 (2018).
53. Eran A. Barnoy, Rachela Popovtzer and **Dror Fixler**, Development of a molecular bio-switch using fluorescence lifetime imaging: incremental activation of fluorescein diacetate, Journal of Biophotonics 11(2) e201700061 (2018).
54. Xiaojing Liu, Luting Liu, Xiujie Hu, Shuyun Zhou, Rinat Ankri, Zheng Xie, **Dror Fixler**, Multimodal Bioimaging based on Gold Nanorods and Carbon Dots Nanohybrids as a novel tool for Atherosclerosis Detection, Nano Research 11 (3), 1262-1273 (2018).
55. Hamootal Duadi, Idit Feder, **Dror Fixler**, Near-infrared human finger measurements based on self-calibration point: simulation and *in vivo* experiments, Journal of Biophotonics 11(4) e201700208 (2018).
56. **Dror Fixler**, James Leary, Xunbin Wei, Nanoscale Imaging and Sensing for Biomedical Applications, editorial, Cytometry Part A 91(8), 758-759 (2017).

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40. A. HIRSHBERG, I. ALON, R. ANKRI, D. FIXLER, DIFFUSION REFLECTION MEASUREMENTS OF GOLD NANORODS BIO-CONJUGATED TO ANTI-EGFR MONOCLONAL ANTIBODY DISCRIMINATE BENIGN FROM MALIGNANT ORAL LESIONS, ORAL AND MAXILLOFACIAL PATHOLOGY 124(3) e217–e218, 2017.
41. A. Emanuelov P. Bouaziz J. Leinonen R. Ankri S. Hoss C. Lotan D. Fixler R. Beeri, The left atrial appendagea -biological band aid for cardiac tissue regeneration, ESC Congress 2017, 26-30 August, Barcelona, Spain, European Heart Journal, 2017.
42. **Six** proceedings at Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XV, Feb. 2018, SPIE.
43. Menashe Haddad, Rachela Popovtzer, Inbar Yariv, Menachem Motiei, Dror Fixler, Concise Nanomedicine Review, Harefuah 157(4) 232-236 2018.
44. Gal Elhalel, Colin Price, Dror Fixler & Asher Shainberg, The influence of weak magnetic fields in the Schumann Resonance first mode frequency on rat cardiomyocyte cultures, BioEM2019, Montpellier, France, Jun 2019.
45. **Eight** proceedings at Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XVI, Feb. 2019, SPIE.
46. Shiran Sudri, A. Hirsberg, Dror Fixler, : Diffusion Reflection, a novel non-invasive nanophotonic method for early in vivo detection of oral cancer, CED-IADR/NOF Madrid, Spain (September 19-21, 2019).
47. More than 60 papers and 4 books in Judaism theology.

Papers in Preparation/ Submitted to Journals:

1. Dorit Leshem-Lev, Rinat Ankri, Emanuel Harari, Menachem Motiei, Ran Kornowski, Edith Hochhauser, Eli I. Lev and **Dror Fixler**, High Density Lipoprotein Coating Gold Nanoparticles: a Novel Drug Delivery Tool for the Simultaneous Detection and Therapy of Atherosclerosis.
2. Haim Feldman, Mark Iron, **Dror Fixler**, Sergei Moshkov, Naomi Zurgil, Mordechai Deutsch, "Fluorophore Spectroscopy in Aqueous Glycerol

Solution: The Non-Innocence of Glycerol and Its Interactions with the Fluorophore, submitted to The Journal of Physical Chemistry.

3. Tamar Azrad-Leibovich, Alon Zahavi, Myles Brookman, Orit Barinfeld, Orkun Muhsinoglu, Shalom Michowiz, **Dror Fixler** and Nitza Goldenberg-Cohen, Effect of a Single Injection of anti-VEGF Agent on Retinal Edema in Non-Obese Diabetic Mice.

Patents:

1. Missed call notifications and recovery system and service for telephony networks. Inventors: Yaron Baratz, Noah Iitzhak, Dror Fixler. Assignee: Septier Communication Ltd. Application No.: 60/331,297 Nov 2001.
2. Method and system of increasing traffic in a telecommunications network. Inventors: Yaron Baratz, Noah Iitzhak, Dror Fixler. Assignee: Septier Communication Ltd. Application No.: 10/166,761 Jun 2002.
3. Hybrid Intelligent Network. Inventors: Yaron Baratz, Uri Savoray, Dror Fixler. Assignee: Septier Communication Ltd. Application No.: 10/981,656 Nov 2003.
4. Campus Location Technique. Inventors: Yaron Baratz, Uri Savoray, Michael Briman, Dror Fixler. Assignee: Septier Communication Ltd. Application No.: 10/1265,234 Feb 2007.
5. Method and system for providing a product or service using a mobile communication device. Inventors: Avish Jacob Weiner, Dror Fixler. Assignee: MoniTel A.N. Technology Ltd. Application No.: 12/048,475 March 2008.
6. System and Method for Identification by Mobile Handset. Inventors: Avish Jacob Weiner, Dror Fixler. Assignee: MoniTel A.N. Technology Ltd. Application No.: P-**71238**-US August 2008.
7. System and Method for providing a product or service by mobile station replying to SMS broadcast. Inventors: Avish Jacob Weiner, Dror Fixler. Assignee: AcCells Technology Ltd. Application No.: Application No.: 263455,334 March 2009.

8. Method and system for detection of cancer, Dror Fixler and Rinat Ankri, U.S. Patent Application 14/149,925, Assignee: Bar-Ilan University.
9. Immuno-targeted plasmonic gold nanoparticles for spectroscopic detection of colon cancer, Inventors: Rinat Ankri, Dror Fixler, Dolev Peretz, Menachem Motiei and Rachela Popovtzer, Assignee: Bar-Ilan University. Application No.: 62/037,134 Aug. 2014.
10. Non-invasive method and system for detection of cancer or arterial vascular disorders using metal nanoparticles, Dror Fixler and Rinat Ankri, U.S. Patent Application 15, Assignee: Bar-Ilan University.
11. A method and a system for a securing communication and information of mobile devices through controlled cellular communication network, Adam Weinberg Achi Krauz, and Dror Fixler, U.S. Patent Application 62333973, 2016, Assignee: FirstPoint mobile guard LTD.
12. Oxygen saturation measurement in a single vein blood, Meir Nitzan and Dror Fixler, U.S. Patent Application 62/337,359, 2016, Assignee: JCT Lev academic center.
13. System and method for securing communication and information of IoT devices through a controlled cellular communication network, Adam Weinberg and **Dror Fixler**, US Patent Application Number: US011399276B2; 2018, Assignee: FirstPoint mobile guard LTD.
14. System and method for securing electronic message, Adam Weinberg Frank Kleinewoerdemann and **Dror Fixler**, US Patent Application Number: 62/935, 176; 2019, Assignee: FirstPoint mobile guard LTD.
15. Optical system and method for detecting light scattered from tissue, Dror Fixler, Hamootal Dudau, Idit Feder, US Patent Application No. 63/013,720; 2020, Assignee: Bar-Ilan University.

Membership in Professional Societies

2000-present Member at the institute of Electrical and Electronics Engineers (IEEE), Inc.

2000-present Associate Member at the European Telecommunications Standards Institute (ETSI).

2000-present Member of Organizational Partner of Third Generation Partnership Project (3GPP).

2000-2014 Member of the International Society for Optical Engineering - SPIE.

2015-2018 Senior Member of the International Society for Optical Engineering - SPIE.

2019- present Fellow of the International Society for Optical Engineering - SPIE.

2004- 2018 Member of the Optical Society of America - OSA.

2019- present Senior member of the Optical Society of America - OSA.

2007-2016 Director at MoniTel A.N. Technology Ltd.

2008-2014 Member in the management board of Tzohar (religious Zionism Rabbis).

2015-2017 Member of the COST Action MP1403 “Nanoscale Quantum Optics”.

2016-2017 Member of the COST Action BM1205 “Skin Cancer Detection using Laser Imaging”.

2017-2018 Member of the COST Action CM1403 “From the Design of Photon-Upconverting Nanomaterials to Biomedical Applications”.

2018-2022 WG co-leader of the COST Action CA17121 “Correlated Multimodal Imaging in the Life Sciences - COMULIS”.

2022-2026 WG co-leader of the COST Action CA21159 “Understanding interaction light - biological surfaces”.

2022-2026 Member of the COST Action CA21121 “European network for the Mechanics of Matter at the Nano-scale”.

2015-2016 Member of the senate, Bar-Ilan University.

2018-presnt Advisor of the Medical Technology, Health Information and Research Directorate, Ministry of Health, Israeli government.

2019 Advisor of the World Bank.

2017- present SPIE Student Chapter Advisor.

2011-present Editor of B.D.D.- Bekhol Derakhekha Daehu (Bar-Ilan University press).

2014- 2016 Regional Editor, Recent Patents on Signal Processing (Bentham Science).

2015- present Member of the Editorial Board of *Journal of Biophotonics*.

2016- present Associate Editor, *Cytometry Part A.*

2016- present Associate Editor, *Journal of Biomedical Photonics & Engineering*.

2018- present Associate Editor, *IEE photonics Journal*.

2019- present Associate Editor, *Materials*.

2020- present Associate Editor, *IEEE Transactions on Nanobioscience*.

2022- present, Members in the Steering Committee of the Israeli Photonics School.

Conference organizer:

- Organizer and Chairman of the 2006' General meeting of Chinese Optical society 3-6/9/2006 Guangzhou China.
- ISM - Israel Society for Microscopy, The 43th and 49th Annual Scientific Meeting of ISM at Bar-Ilan University 6/2009 and 5/2015.
- Scientific board of the International Torah & Science Conference since 2009 (one conference each year).
- Translational Cytomics, Leipziger Workshop, April 2-4 2014.
- Smart City Conference, October 2015, Daniel Hotel Herzliya, Israel.
- The Israeli Biophotonics Conference (IBPC-2), December 2015.
- Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XIII, February 2016, San Francisco, California, USA.
- Biophotonics: Photonic Solutions for Better Health Care, April 2016, Brussels, Belgium.
- IoT security, October 2016, Daniel Hotel Herzliya, Israel.
- Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications, 2017-2022, San Francisco, California, USA.
- Director of the Nano Photonics- Summer Program, 2016-2021.
- International conference on functional nanomaterials and nanodevices, 25-27 SEPTEMBER 2017.
- Laser Applications in Life Sciences (LALS), April 18-20 2018.

Area of Research:

- Fluorescence,
- Fluorescence lifetime,
- Fluorescence anisotropy,
- Fluorescence microscopy,
- Time resolve measurements,

- Light-Tissue interaction,
- Gold nanoparticles as bio-sensors,
- Optics and Lasers,
- Communication systems,
- Advanced Communication protocols,
- Telephony (PSTN, PLMN, Cellular – GSM, GPRS, UMTS, LTE, CDMA, 1X).