

Curriculum vitae

PERSONAL INFORMATION

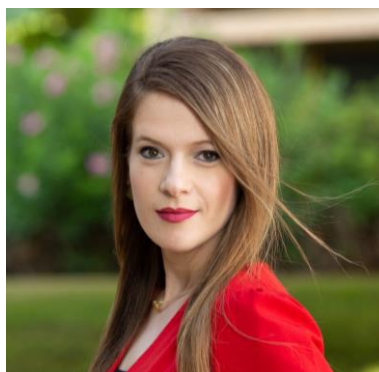
Family name, First name: Ilovitsh, Tali

ORCID: 0000-0001-6215-0299

Date of birth: October 23rd 1988

Nationality: Israel

URL for web site: <https://ilovitsh-lab.com/>



• EDUCATION

2012-2016 **Ph.D. Electrical Engineering**

Department of Electrical Engineering, Faculty of Engineering, Bar Ilan University, Israel.

Thesis topic: Optical Image Processing and Super Resolved Imaging Concepts.

Supervisor: Prof. Zeev Zalevsky

2010-2012 **M.Sc. Electrical Engineering***

Department of Electrical Engineering, Faculty of Engineering, Bar Ilan University, Israel.

Thesis topic: Hybrid Silicon / Lithium Niobate Modulators: Design and Wafer Bonding.

Supervisor: Prof. Avinoam Zadok

* M.Sc. studies in a direct course where the first year of studies was parallel to the 4th year of B.Sc. studies.

2007-2011 **B.Sc. Electrical Engineering** (*magna cum laude*)

Department of Electrical Engineering, Faculty of Engineering, Bar Ilan University, Israel.

• CURRENT POSITION

07/2019 – Senior Lecturer (*Assistant Professor equivalent*).

Department of Biomedical Engineering, Faculty of Engineering, Tel Aviv University, Tel Aviv, Israel.

Dual affiliation to the Sagol School of Neuroscience, Tel Aviv University, Tel Aviv, Israel

• PREVIOUS POSITIONS

06/2018 – 06/2019 **Postdoctoral Fellow**, Stanford University, USA

Department of Radiology, School of Medicine, Stanford University, Stanford, California, USA

Supervisor: Prof. Katherine Ferrara

11/2016 – 06/2018 **Postdoctoral Fellow**, University of California at Davis, USA

Department of Biomedical Engineering, Faculty of Engineering, University of California at Davis, Davis, California, USA

Supervisor: Prof. Katherine Ferrara

• FELLOWSHIPS AND AWARDS

2021 Dean's award for Excellence in Teaching. Faculty of Engineering, Tel Aviv University.

2019 Selected by Forbes Israel as one of the most promising Israelis under 30 ("30 under 30").

2016 The Bar-Ilan nanotechnology institute fellowship for excellence in studies.

2015 The Idelson Foundation Fellowships program excellence award for women doctoral students in the Engineering Sciences.

2015 The Bar Ilan University Rector's award for outstanding Ph.D. students.

2014 The Bar-Ilan nanotechnology institute prize award for publications.

2012-2016 The Bar-Ilan president fellowship for Ph.D. students.

2011-2012 The Bar Ilan faculty of engineering fellowship for M.Sc. students.

2011 The Bar Ilan University Dean award for excellence in studies.

2010-2014 The Bar-Ilan nanotechnology institute fellowship for excellence in studies.

2006-2007 The Bar Ilan faculty of engineering fellowship for excellence in studies.

Over the years, I received over 10 awards for publications and best posters in various international conferences.

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2019 - Mike Bismuth, PhD student (Tel Aviv University, Israel)
2019-2021 Keren Tchelet Karlinsky, MSc student (Tel Aviv University, Israel)
2020-2022 Sharon Katz, MSc student (Tel Aviv University, Israel)
2020-2022 Michal Eck, MSc student (Tel Aviv University, Israel)
2020-2022 Raphael Abiteboul, MSc student (Tel Aviv University, Israel)
2020 - Bar Glickstein, PhD student (Tel Aviv University, Israel)
2021-2022 Dror Shein, MSc student (Tel Aviv University, Israel)
2021 - Hila Shinar, MSc student (Tel Aviv University, Israel)
2021 - Tamar Mano, MSc student (Tel Aviv University, Israel)
2021 - Tal Grutman, MSc student (Tel Aviv University, Israel)
2022 - Lea Peko, Postdoctoral fellow (Tel Aviv University, Israel)
2022 - Roni gattegno, PhD student (Tel Aviv University, Israel)
2022 - Maya Elbaz, MSc student (Tel Aviv University, Israel)

- **UNDERGRADUATE STUDENTS**

Currently I mentor 5 undergraduate students.

- **TEACHING ACTIVITIES**

2020 - **Lecturer**, Course: Introduction to Ultrasound Imaging and Therapy, Tel Aviv University, Israel
2020 - **Lecturer**, Course: Radiation and Imaging in Medicine, Tel Aviv University, Israel
2012-2016 **Lab Instructor**, Advanced laboratory in Electro-Optics, Bar Ilan University, Israel
2012-2016 **Teaching Assistant**, Introduction to electrical engineering, Bar Ilan University, Israel
2012-2016 **Teaching Assistant**, Digital logic systems, Bar Ilan University, Israel
2012-2016 **Teaching Assistant**, Linear electronic circuits, Bar Ilan University, Israel
2012-2016 **Teaching Assistant**, General electronics, Bar Ilan University, Israel

- **INSTITUTIONAL RESPONSIBILITIES**

2019 - **Faculty member**, Department of Biomedical Engineering, Tel Aviv University, Israel
2019 - **Member**, Sagol School of Neuroscience, Tel Aviv, Israel.
2019-2021 **Committee Head**, Department volunteering activities
2021 - **Head**, Dual degree of Biomedical Engineering and Sagol School of Neuroscience
2022 - **Committee Member**, Faculty of Engineering MSc program

- **REVIEWING ACTIVITIES**

2020 – **Grant reviewer**, Chan Zuckerberg Deep Tissue Imaging Grant
2021-2022 **Guest Editor**, MDPI Micromachines, Special Issue "Microbubbles for Ultrasound Therapy".
2012 – **Reviewer**, (Nature Communications, IEEE TUFFC, IEEE transactions on Medical Imaging, Physics in Medicine and Biology, Ultrasound in Medicine and Biology, Scientific Reports, MDPI sensors, Biomedical Optics Express)

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

2015 – 2017 **Student member**, IEEE
2020 – **Member**, The Israel Society for Medical and Biological Engineering
2021 – **Member**, American Physical Society
2022 – **Member**, IEEE

- **PUBLICATIONS**

28 publications in peer-reviewed journals. Four additional currently under review

- 1) I. Bakish, V. Artel, **T. Ilovitsh**, M. Shubely, Y. Ben-Ezra, A. Zadok and C. N. Sukenik. Self-assembled monolayer assisted bonding of Si and InP. Optical Materials Express. 2, 1141-1148, (2012).
- 2) **T. Ilovitsh**, A. Meiri, C.J. Ebeling, R. Menon, J.M. Gerton, E.M. Jorgensen and Z. Zalevsky. Improved localization accuracy in stochastic super-resolution fluorescence microscopy by K-factor image deshadowing. Biomedical optics express. 5, 244-258, (2014).

- 3) **T. Ilovitsh**, A. Ilovitsh, J. Sheridan and Z. Zalevsky. Optical realization of the Radon transform. *Optics express*. 22, 32301-32307, (2014);
- 4) **T. Ilovitsh**, Y. Danan, R. Meir, A. Meiri and Z. Zalevsky. Cellular imaging using temporally flickering nanoparticles. *Scientific reports*, 5, 1-6, (2015).
- 5) **T. Ilovitsh**, Y. Danan, A. Ilovitsh, A. Meiri, R. Meir and Z. Zalevsky. Superresolved labeling nanoscopy based on temporally flickering nanoparticles and the K-factor image deshadowing. *Biomedical optics express*, 6, 1262-1272, (2015).
- 6) A. Ilovitsh, **T. Ilovitsh**, E. Preter, N. Levanon and Z. Zalevsky. Super resolution using Barker-based array projected via spatial light modulator. *Optics Letters*. 40, 1802-1805, (2015).
- 7) **T. Ilovitsh**, Y. Danan, R. Meir, A. Meiri and Z. Zalevsky. Cellular superresolved imaging of multiple markers using temporally flickering nanoparticles. *Scientific Reports*, 5, 1-8, (2015).
- 8) **T. Ilovitsh**, A. Weiss, A. Meiri, C. G. Ebeling, A. Amiel, H. Katz, B.M. Green and Z. Zalevsky. K-factor image deshadowing for three-dimensional fluorescence microscopy. *Scientific Reports*, 5, 137241- 1372410, (2015).
- 9) **T. Ilovitsh**, A. Ilovitsh, A. Weiss, R. Meir and Z. Zalevsky. Three dimensional imaging of gold-nanoparticles tagged samples using phase retrieval with two focus planes. *Scientific Reports*. 5, 154731-154739, (2015).
- 10) Y. Danan, **T. Ilovitsh**, Y. Ramon, D. Malka, D.P Liu and Z. Zalevsky. Silicon-coated gold nanoparticles nanoscopy. *Journal of Nanophotonics*. 10, 360151-360159, (2016).
- 11) **T. Ilovitsh**, B. Jalali, M.H. Asghari and Z. Zalevsky. Phase stretch transform for super-resolution localization microscopy. *Biomedical Optics Express*. 7, 4198-4209, (2016).
- 12) **T. Ilovitsh**, A. Ilovitsh, O. Wagner and Z. Zalevsky. Superresolved nanoscopy using Brownian motion of fluorescently labeled gold nanoparticles. *Applied Optics*. 56, 1365-1369, (2017).
- 13) J. Foiret, H. Zhang, **T. Ilovitsh**, L. Mahakian, S. Tam and K.W. Ferrara. Ultrasound localization microscopy to image and assess microvasculature in a rat kidney. *Scientific Reports*. 7, 1-12, (2017).
- 14) **T. Ilovitsh**, A. Ilovitsh, J. Foiret, B.Z. Fite and K.W. Ferrara. Acoustical structured illumination for super-resolution ultrasound imaging. *Communications Biology*, 1, 1-11, (2018).
- 15) **T. Ilovitsh**, A. Ilovitsh, J. Foiret and K.W. Ferrara. Imaging beyond ultrasonically-impenetrable objects. *Scientific Reports*, 8, 1-11, (2018).
- 16) **T. Ilovitsh**, A. Ilovitsh, J. Foiret, C.F. Caskey, J. Kusunose, B.Z. Fite, H. Zhang, L.M. Mahakian, S. Tam, K. Butts-Pauly, S. Qin, and K.W. Ferrara. Enhanced microbubble contrast agent oscillation following 250 kHz insonation. *Scientific Reports*, 8, 1-7, (2018).
- 17) A. Ilovitsh, **T. Ilovitsh**, J. Foiret, D.N. Stephens and K.W. Ferrara. Simultaneous Axial Multifocal Imaging Using a Single Acoustical Transmission: A Practical Implementation. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 66, 273-284, (2019).
- 18) Q. Zhong, B.C. Yoon, M. Aryal, J.B. Wang, **T. Ilovitsh**, M.A. Baikoghli, N. Nassab, A. Karthik, H.R. Cheng, K.W. Ferrara, R.D. Airan. Polymeric perfluorocarbon nanoemulsions are ultrasound-activated wireless drug infusion catheters. *Biomaterials*. 206, 73-86, (2019).
- 19) A. Ilovitsh, B.Z. Fite, **T. Ilovitsh**, K.W. Ferrara. Acoustic radiation force imaging using a single-shot spiral readout. *Physics in Medicine & Biology*, 64, 125004 (2019).
- 20) A. Ilovitsh, **T. Ilovitsh**, K.W. Ferrara. Multiplexed ultrasound beam summation for side lobe reduction. *Scientific reports*, 9, 1-8 (2019).
- 21) **T. Ilovitsh**, E.S Ingham, H. Zhang, A. Ilovitsh, Y. Feng, J. Foiret, A. Kheirrolomoom, S.K Tumbale, B.Z Fite, B. Wu, M. Chavez, G. Pelled, D. Gazit, O. Vermesh, I. Steinberg, S.S Gambhir and K.W Ferrara. Low frequency ultrasound-mediated cytokine transfection enhances T cell recruitment at local and distant tumor sites. *Proceedings of the National Academy of Sciences (PNAS)*, 117, 12674-12685 (2020).

- 22) B.Z Fite, J. Wang, A.J Kare, A. Ilovitsh, M. Chavez, **T. Ilovitsh**, N. Zhang, W. Chen, E. Robinson, H. Zhang, A. Kheirloom, M.T Silvestrini, E.S Ingham, L.M Mahakian, S.M Tam, R.R Davis, C.G Tepper, A.D Borowsky and K.W Ferrara. Immune modulation resulting from MR-guided high intensity focused ultrasound in a model of murine breast cancer. *Scientific Reports*, 1, 1-15 (2021).
- 23) M. Bismuth, S. Katz, H. Rosenblatt, M. Twito, R. Aronovich and **T. Ilovitsh**. Acoustically Detonated Microbubbles Coupled with Low Frequency Insonation: Multiparameter Evaluation of Low Energy Mechanical Ablation. *Bioconjugate Chemistry* (2021).
- 24) K. T. Karlinsky and **T. Ilovitsh** Ultrasound Frequency Mixing for Enhanced Contrast Harmonic Imaging of Microbubbles. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 69, no. 8, pp. 2414-2424, (2022).
- 25) B. Glickstein, M. Levron, S. Shitrit, R. Aronovich, Feng, Y., and **T. Ilovitsh**. Nanodroplet-Mediated Low-Energy Mechanical Ultrasound Surgery. *Ultrasound in Medicine & Biology*, 48 (7), 1229-1239 (2022).
- 26) R. Abiteboul, and **T. Ilovitsh**. Optimized Simultaneous Axial Multifocal Imaging via Frequency Multiplexed Focusing. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* 69, 2930-2942 (2022).
- 27) M. Eck, R. Aronovich, and **T. Ilovitsh**. Efficacy optimization of low frequency microbubble-mediated sonoporation as a drug delivery platform to cancer cells. *International journal of pharmaceutics: X* 4 (2022).
- 28) M. Bismuth, S. Katz, T. Mano, R. Aronovich, D. Hershkovitz, A. A. Exner, and **T. Ilovitsh**. Low frequency nanobubble-enhanced ultrasound mechanotherapy for noninvasive cancer surgery. *Nanoscale* 14, 13614-13627 (2022).

CONFERENCES AND TALKS

Year	Name of Meeting, City, Country	Detailed Activity (Poster/Lecture/Organizing etc.)
2012	NanoIsrael 3rd conference, Tel Aviv, Israel	Oral presentation
2013	IEEE 12 th Workshop on Information Optics, Puerto de la Cruz, Spain	Oral presentation
2014	International Congress of Imaging Science, Tel Aviv, Israel	Oral presentation
2015	Oasis 2015, Tel Aviv, Israel	Poster (Best poster award)
2015	Israel Bio Photonics Conference 2 (IBPC 2015), Ramat Gan, Israel	3 oral presentations
2016	SPIE Photonics West 2016, San Francisco, CA, USA	3 oral presentations
2017	SPIE Photonics West 2017, San Francisco, CA, USA	2 oral presentations
2018	International Symposium for Therapeutic Ultrasound, Nashville, TN, USA	Oral presentation
2018	6 th International Symposium on Focused Ultrasound, Reston, VA, USA	Oral presentation
2020	The annual meeting of the Israel Society for Medical and Biological Engineering (ISMBE)	Oral presentation
2020	IEEE international ultrasonic symposium 2020	Poster Presentation

2020	“Medical ultrasound: advanced imaging and targeted therapy”, TAUBiomed, Nov. 2020	Invited talk
2020	Faculty of Materials Engineering, Technion, Israel, Nov. 2020	Invited talk
2021	Meet the new faculty, Sagol School of Neuroscience, TAU, March 2021	Invited talk
2021	ISTU International Society for Therapeutic Ultrasound 2021	2 Oral presentations + poster presentation
2021	APS American Physical Society Meeting	2 Oral presentations
2021	OSA Imaging and Applied Optics Congress	Invited talk
2021	IEEE international ultrasonic symposium 2021	1 Oral presentation
2021	"Gas bubbles combined with ultrasound: innovative tool for therapeutic applications". Department of Marine Biology, Haifa University, Israel.	Invited Talk
2021	TAU-Columbia conference	Invited Talk
2021	UCL-TAU MPBME	Invited Talk
2022	Undergraduate Track Seminar Series, Department of Medicine, Tel Aviv University	Invited Talk
2022	Amigos de Tel Aviv university	Invited Talk
2022	Teva-Biomed Satellite Event	Invited Talk
2022	MIT 2022 conference	Invited Talk
2022	ISTU International Society for Therapeutic Ultrasound 2021	2 Oral presentations
2022	MICR 2022	Invited Talk
2022	Insightec seminar day	Invited Talk
2022	Annual meeting, Israel Society for Physiology and Pharmacology (ISPP)	Invited Talk
2022	IEEE international ultrasonic symposium 2022	2 poster presentations
2022	Biosoft retreat	Invited Talk