ORI KATZ

The Institute of Applied Physics, The Hebrew University of Jerusalem, Jerusalem, Israel

Google Scholar profile: https://scholar.google.co.il/citations?user=jf9V6UUAAAAJ&hl=en
URL for web site: https://scholars.huji.ac.il/orikatz

EDUCATION AND TRAINING

Hebrew University of Jerusalem	Physics and Mathematics (*Talpiot* Excellence Program)	BSc	1999
Hebrew University of Jerusalem	Applied Physics	MSc	2005
Imperial College (London, UK)	Physics	Visiting researcher	2009
Weizmann Institute of Science, (Rehovot, Israel)	Physics (Prof. Yaron Silberberg)	PhD	2011
ESPCI ParisTech, École Normale Supérieure Paris	Physics (Prof. Mathias Fink, Prof. Sylvain Gigan)	Postdoc	2012-2015

ACADAMIC POSITIONS

Postdoctoral Fellow	ESPCI ParisTech & École Normale Supérieure, Paris	2012—2015
Senior Lecturer	Hebrew University of Jerusalem, Jerusalem, Israel	2015—2020
Associate Professor (Tenured)	Hebrew University of Jerusalem, Jerusalem, Israel	2020—2023
Professor	Hebrew University of Jerusalem, Jerusalem, Israel	2023

RESEARCH FOCUS

My research lies at the interface between physics and engineering, combining novel physical insights with emerging computational tools. It spans diverse applicative fields of research that employ optics, acoustics, and their combination to discover new capabilities. In particular, my research group has focused on developing novel imaging and sensing techniques that allow to see deep inside complex samples such as biological tissues and fog, with a resolution and depth beyond the reach of conventional techniques. Our works have allowed imaging around corners, through visually-opaque layers, and exploited blood flow to improve the resolution of photo-acoustic tomography. Recently, I expanded my research interest to non-Hermitian photonics, demonstrating a novel concept of a time-reversed laser (Slobodkin et al. Science, 2022). In addition to these main fields of study, I have also studied quantum coherent control, and quantum inspired imaging. My works have received coverage by national and international media, such as BBC News, and Le monde, among others.

HONORS AND AWARDS

ERC Consolidator Grant (2021)
Krill Prize, Wolf Foundation (2019)
Azrieli Faculty Fellowship, The Azrieli Foundation (2015)
ERC Starting Grant (2015)
Best contributed paper award, The Rank Prize Funds, U.K. (2014)
Marie Curie Intra-European Post-doctoral Fellowship (IEF), European Commission (2013)
Rothschild Post-doctoral Fellowship, Yad Hanadiv (2012)
John F. Kennedy Award for outstanding doctoral thesis, Weizmann Institute of Science, Israel (2012)
Israeli Physical Society Prize of Excellence for a Single Graduate Student in Experimental Physics. (2011)

Best lecture award, Optics & Photonics conference 2011, Ben-Gurion University, Israel (2011)
Best poster award, OASIS 2011 conference, Israel (2011)
Emil Wolf outstanding student paper competition, winner, Optical Society of America (2010)
Otto Schwartz excellence scholarship, Weizmann Institute of Science (2010)
Incubic/Milton Chang Travel Award, Optical Society of America, USA (2010)
Emil Wolf outstanding student paper competition, finalist, Optical Society of America (2009)
Levi Eshkol excellence scholarship, the Israeli Ministry of Science & Technology (2009)
M.Sc Excellence scholarship, School of applied physics, Hebrew University Jerusalem (2002)
Exemplary graduate of the 'Talpiot' academic excellence program, graduating year of 1999. (1999)
The Rector's Excellence Prize for outstanding academic achievements, Faculty of Natural Sciences, Hebrew University, Jerusalem (1998)
Dean's list, Faculty of Natural Sciences, Hebrew University, Jerusalem (1998)
Dean's list, Faculty of Natural Sciences, Hebrew University, Jerusalem (1998)

SCIENTIFIC LEADERSHIP

Academic Head of Electrical-Engineering and Applied-Physics undergraduate program 2023 - …
Academic Head of *Talpiot* Excellence Program, Hebrew University of Jerusalem 2018 - 2023
Talpiot is Israel's most selective academic excellence program, accepting each year 50 individuals out of thousands of applicants for undergraduate/MSc studies in Mathematics, Physics, and Computer Science.

Member of organizing committees for international conferences and meetings:

1. International Conference on Computational Photography (ICCP 2021) - Chair
2. Label-free Biomedical Imaging and Sensing (LBIS) Conference, SPIE, San-Francisco, USA, 2019
3. Hebrew University Nanoscience Center annual conference, 2019 (Head of organizing committee)
4. 3rd Workshop on OptoMechanics and Brillouin Scattering (WOMBAT) 2019, Tel-Aviv, Israel
5. Optical Society of America Imaging and Applied Optics Congress - Computational Optical Sensing and Imaging (COSI) – Florida, USA, 2018
6. Hebrew University Nanoscience Center annual conference, 2018

Service as referee for research grants applications:

European Research Council (ERC), Referee for Starting, Consolidator, and Advanced Grants applications, Austrian Science Fund (FWF), Israel Science Foundation (ISF)

Journal referee:

Science, Science Advances, Nature Photonics, Nature Physics, Nature Communications, Scientific Reports, Optica, Optics Express, Optics Letters, Biomedical Optics Express, Physical Review Letters.

SELECTED PUBLICATIONS

1. Y.Slobodkin, G.Weinberg, H.Hörner, K.Pichler, S.Rotter, O.Katz, "Massively degenerate coherent perfect absorber for arbitrary wavefronts", **Science** (2022).
2. N.Badt, O.Katz, "Label-free video-rate micro-endoscopy through flexible fibers via Fiber Bundle Distal Holography (FiDHo)", **Nature Communications** (2022).
3. J.Bertolotti, O.Katz, "Imaging in Complex Media", **Nature Physics** (2022) - *invited review article.*
4. W.Choi, M,Kang, J.H.Hong, O.Katz, Y.Choi, W.Choi, "Flexible-type ultrathin holographic endoscope for microscopic imaging of unstained biological tissues", **Nature Communications** (2022).
5. I.M.Bloch, G.Ronen, R.Shaham, O.Katz, T.Volansky, O.Katz, "New constraints on axion-like dark matter using a Floquet quantum detector", **Science Advances** 8 (5), eabl8919122022 (2022).
6. T.Yeminy and O.Katz. "Guidestar-free image-guided wavefront shaping". **Science Advances** 721, 7, 21, eabf5364 (2021).

7. J. Boger-Lombard, O. Katz, “Non line-of-sight localization by passive optical time-of-flight”, **Nature Communications** 10, 3343 (2019);
8. O. Katz, P. Heidmann, M. Fink, S. Gigan, (2014). “Non-invasive single-shot imaging through scattering layers and around corners via speckle correlations”, **Nature Photonics**, Vol. 8 (10), 784-790.
9. T. Chaigne*, O. Katz*, A.C. Boccara, M. Fink, E. BossI, S. Gigan, (2014). Controlling light in scattering media noninvasively using the photo-acoustic transmission-matrix, **Nature Photonics**, 8, 58–64.
10. M.Nixon, O.Katz, E.Small, Y.Bromber, Y.Silberberg, N.Davidson, (2013). Real-time wavefront-shaping by all-optical feedback, **Nature Photonics**, 7, 919-924.
11. O.Katz, E.Small, Y.Silberberg, (2012). Looking around corners and through thin turbid layers in real time with scattered incoherent light, **Nature Photonics** 6, 549–553.
12. O.Katz, E.Small, Y.Bromberg, Y.Silberberg, (2011). Focusing and compression of ultrashort pulses through scattering media, **Nature Photonics** 5, 372–377.