HIT - HOLON INSTITUTE OF TECHNOLOGY

Date: 9th April 2025

Name **GILAD** **KATZ** Ph.D. 24813040

(first) (last) (acad. degree) **No. id. Card**

Faculty Electric & Electronics Engineering ***Department***

Home Address Moshav Shdema, Hzorim 70, POB 143 ***Phone No.*** **054-4735012**

(home) (work) (mobile)

Date/place of birth 23/2/1970 Israel ***Date of arrival in Israel*** -

(date) (country)

ZAHAL, (Israeli) Military Service 29/8/1988 **-** 29/8/1992

dates (enlisted) **(discharged)**

Marital Status Married ***No. of children*** three

Email: giladk2370@gmail.com

A. EDUCATION

Period of Study (dates)	Name of University (including city and country if not in Israel)	Subject	Degree or Professional Licence	Date of Award
1994-1998	Ben Gurion University of the Negev	Electrical Engineering	B.Sc.	15/6/1998
1998-2001	Ben Gurion University of the Negev	Electrical Engineering	M.Sc.	30/5/2001
2003-2007	Ben Gurion University of the Negev	Electrical Engineering	Ph.D.	2/12/2007

Title of Master's Thesis: Post detection signal processing for optical fiber communication impairments

Name of Supervisors: Prof. Dan Sadot

Title of Doctoral Dissertation: Atmospheric effects on imaging and remote-sensing systems: Atmospheric modulation transfer function

Names of Supervisors: Prof. Dan Sadot

B. FURTHER STUDIES

Period of Study (dates)	Name of University (including city and country if not in Israel)	Subject	Degree or Professional Licence	Date of Award
NONE				

C. ACADEMIC AND PROFESSIONAL EXPERIENCE

ACADEMIC:

Period (dates)	Name of Institution (city, country)	Department	Rank/Function
2002-2006	Ben-Gurion University of the Negev, Beer Sheba, Israel	Communication Laboratory	Instructor for undergraduate electrical engineering students
1/7/2006-30/6/2010	**HIT – Holon Institute of Technology, Holon, Israel**	**Electric & Electronics Engineering**	**Rank:**
	7/2006-6/2010		Adjunct Lecturer – DSP for communi-cation course
	1/10/2016-present		**Lecturer**

PROFESSIONAL:

Period (dates)	Name of Institution (city, country)	Department	Rank/Function
2000-2004	Celerica❶, Petach Tikva, Israel		System Engineer❷
2006-2012	Multiphy❸, Ness Ziona, Israel		System Leader❹

Tools Experience: Matlab, Orcad Allegro, VPIphotonics

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❶ Celerica used free space optics in order to extend the connection between a wireless radio base station and its antennas

❷ Research and development in cellular signals over free space optics:
- Electro-optics and RF board design
  - Laser, APDs, photodiode, optical repeater, RF amplifer
- Lab measurements
  - Spectrum analyzer, noises, linearity, smith chart
- Link budget analysis, optical and RF consideration

❸ MultiPhy is a fabless semiconductor company providing next generation ICs at 100G speeds for fiber optic networks. MultiPhy licenses technology which was developed at Ben Gurion University as part of Dr. Katz's doctoral thesis.

❹ Leading the development and post silicon activities of System on Chip for optical communications system at 100G.
Main responsibilities: **IC Pre-silicon R&D**
- System requirement and product features definition
  - Definition of analog and RF blocks, specifying requirements and evaluate performance
  - Performance evaluation and analysis using Matlab based simulation
- Digital receiver (DSP) algorithm design and research
  - Impairments mitigation research of low cost components
  - Electrical equalizers performance analysis and design for optical communication system at high bit/sample rate
- Evaluation board design, high-speed (up to 28 GHz) signal integrity
- Package design, signal integrity analysis, power supplies consideration
- High speed optics/RF Lab bringup

Post-silicon
- Post silicon chip bringup, characterization and validation
- Product integration at customers' systems
- Intensive customer on-site support

C. ACADEMIC AND PROFESSIONAL EXPERIENCE, contd.

PROFESSIONAL:

Period (dates)	Name of Institution (city, country)	Department	Rank/Function
2012-2018	Multiphy, Ness Ziona, Israel		Chief Engineer❺
2018-2019	Moslitek, Israel		Algorithm Consultant❻
2019-present	Elbit (Elisra), Holon, Israel		Algorithm Consultant❼

❺
- Research on one sample per symbol receiver of coherent optical communication at 100 Gb/s
- Development of novel modulation schemes and DSP implementation for 100 Gb/s transmission over a single optical channel
- Publishing papers in scientific journal, presentations for investors, and demonstrations at customers' sites

❻ Moslitek develops Algorithmic for Communication Networks including: Next Generation air interfaces, protocols and capacity increase algorithms for multiple access communication networks, wireless communication including ultra-wideband (UWB) technologies, 4G/5G mobile systems.

❼ Elisra Group is an Israeli manufacturer of high-tech electronic devices, mainly, but not exclusively, for military use. It makes equipment for electronic communication and surveillance, missile tracking and controlling systems, radar and lidar equipment.

D. PROFESSIONAL AND PUBLIC ACTIVITIES

Period (dates)	Name of Institution/Conference/ Journal/Exhibitions/Projects (city, country)	Occasion
NONE		

E. ACADEMIC AND PROFESSIONAL AWARDS (prizes, fellowships, scholarships, etc.)

Year	Name of Institution (city, country)	Occasion
NONE		

E1. RESEARCH GRANTS

Year	Name of Institution (city, country)	Occasion/Amount
NONE		

F. MEMBERSHIP IN PROFESSIONAL SOCIETIES

Year	Society (country)
NONE	

G. STUDENTS SUPERVISED BY CANDIDATE

HIT – Holon Institute of Technology does not currently have an accreditation for granting research theses (M.Sc.) or Dissertation (Ph.D.) degrees

G1. DOCTORAL STUDENTS

Year	Name of Student	Title of Thesis	Name of Academic Institution
NONE			

G2. M.A./M.Sc. STUDENTS *(please indicate if degree is with "thesis" or "final project")*

Year	Name of Student	Title of Thesis/Final Project	Name of Academic Institution
NONE			

PUBLICATIONS

Dr. Gilad Katz has an h-index of 10 (Google scholar)

C. REFEREED ARTICLES (ranked by either WoS or SCImago)

*1. D. Arie, **G. Katz** (2022)
Electrical equalization analysis of PAM-4 transmission in short reach optical systems
Applied Sciences-Basel, 12(4), (2255)
Special Issue: Optics in Information and Communication Technologies
WoS: Q2, IF: 2.838, JCR citation: 1
SCImago: Q2, h-index: 75, Scopus citation: 1
[Google scholar citations: 3]

*2. E. Granot, **G. Katz** (2021)
PAM-*N* – Fundamental limits in chromatic dispersive-uncompensated channels
Applied Sciences-Basel, 11(6), (2542)
Special Issue: New trends in high-capacity optical communication
https://doi.org/10.3390/app11062542
WoS: Q2, IF: 2.838, JCR citation: 1
SCImago: Q2, h-index: 75, Scopus citation: 1
[Google scholar citation: 1]

*3. **G. Katz**, R. Romano, T. Zortea (2019)
Digital background calibration of ultra-high-speed time-interleaved of PAM4 2-bit DACs
AEU - Int'l. J. of Electronics and Communications, 107, (83-88)
WoS: Q2, IF: 3.169, JCR citation: 1
SCImago: Q2, h-index: 65, Scopus citations: 2
[Google scholar citations: 3]

*4. E. Sonkin, D. Sadot, **G. Katz** (2019)
MZM optimization of PAM-4 transmission in data center interconnect
Applied Sciences-Basel, 9(4), (637)
https://doi.org/10.3390/app9040637
WoS: Q2, IF: 2.838, JCR citations: 4
SCImago: Q2, h-index: 75, Scopus citations: 6
[Google scholar citations: 5]

*5. **G. Katz**, E. Sonkin (2019)
Level optimization of PAM-4 transmission with signal-dependent noise
IEEE Photonics Journal, 11(1), (6 pages)
[DOI: 10.1109/JPHOT.2018.2887112]
WoS: Q3, IF: 2.250, JCR citations: 7
SCImago: Q2, h-index: 79, Scopus citations: 6
[Google scholar citations: 8]

*Since last promotion

C. Refereed Articles (ranked by either WoS or SCImago), contd.

*6. D. Malka, **G. Katz** (2018)
An eight-channel C-band Demux based on multicore photonic crystal fiber
Nanomaterials, 8(10), (845)
[https://doi.org/10.3390/nano8100845]
IF = 5.076; Q1 (35/160) in Physics, Applied; Q2 (55/178) in Chemistry, Multidisciplinary;
WoS: Q1, IF: 5.719, JCR citations: 37
SCImago: Q1, h-index: 80, Scopus citations: 39
[Google scholar citations: 41]

7. A. Gorshtein, D. Sadot, N. Sheffi, E. Sonkin, Y. Shachaf, D. Becker, O. Levy, **G. Katz** (2015)
Low cost 112 G direct detection metro transmission system with reduced bandwidth (10 G) components and MLSE compensation
Optics Communications, 338, (438-446)
WoS: Q3, IF: 2.335
SCImago: Q2, h-index: 139, Scopus citations: 3
[Google scholar citations: 3]

8. A. Gorshtein, O. Levy, **G. Katz**, D. Sadot (2013)
Blind channel estimation for MLSE receiver in high speed optical communications: Theory and ASIC implementation
Optics Express, 21(19), (21766-21789)
WoS: Q2, IF: 3.833
SCImago: Q1, h-index: 281, Scopus citations: 13
[Google scholar citations: 12]

9. A. Gorshtein, O. Levy, **G. Katz**, D. Sadot (2010)
Coherent compensation for 100G DP-QPSK with one sample per symbol based on antialiasing filtering and blind equalization MLSE
IEEE Photonics Technology Letters, 22(16), (1208-2010)
WoS: Q3, IF: 2.414
SCImago: Q1, h-index: 161, Scopus citations: 12
[Google scholar citations: 16]

10. O. Levy, A. Alfandary, Y. Maroz, **G. Katz**, D. Sadot (2009)
Implementation of a novel OCDMA PON based on self-heterodyne filtering
J. of Lightwave Technology, 27(14), (2809-2816)
WoS: Q1, IF: 4.439
SCImago: Q1, h-index: 205

11. **G. Katz**, D. Sadot (2009)
Wiener solution of electrical equalizer coefficients in lightwave systems
IEEE Trans. on Communications, 57(2), (361-364)
WoS: Q1, IF: 6.166
SCImago: Q1, h-index: 216, Scopus citations: 5
[Google scholar citations: 5]

12. **G. Katz**, T. Cohen, D. Sadot (2008)
Optimal criterion of decision feedback equalizer coefficients in optical communication system
IET Optoelectronics, 2(2), (96-103)
WoS: Q3, IF: 1.691
SCImago: Q3, h-index: 44
[Google scholar citation: 1]

*Since last promotion

C. Refereed Articles (ranked by either WoS or SCImago), contd.

13. **G. Katz**, D. Sadot (2008)
A nonlinear electrical equalizer with decision feedback for
OOK optical communication systems
IEEE Trans. on Communications, 56(12), (2002-2006)
WoS: Q1, IF: 6.166
SCImago: Q1, h-index: 216
[Google scholar citations: 13]

14. **G. Katz**, D. Sadot, U. Mahlab, A. Levy (2008)
Channel estimators for maximum-likelihood sequence estimation in
direct-detection optical communications
Optical Engineering, 47(4), 2008 (045003)
WoS: Q4, IF: 1.352
SCImago: Q2, h-index: 109
[Google scholar citations: 5]

15. **G. Katz**, D. Sadot (2007)
Nonlinear electrical dispersion compensation in optical communication system
ECTI Trans. on Electrical Engineering, Electronics, and Communications, 5(2), (32-35)
SCImago: Q4, h-index: 8

16. **G. Katz**, D. Sadot (2007)
Time-division multilevel multiplexing communication method
IEEE Photonics Technology Letters, 19(20), (1619-1621)
WoS: Q3, IF: 2.414
SCImago: Q1, h-index: 161
[Google scholar citations: 3]

17. **G. Katz**, D. Sadot (2007)
Radial basis function network equalizer for optical communication OOK system
J. of Lightwave Technology, 25(9), (2631-2637)
WoS: Q1, IF: 4.439
SCImago: Q1, h-index: 205
[Google scholar citations: 19]

18. **G. Katz**, D. Sadot (2006)
Minimum BER criterion for electrical equalizer in optical communication systems
J. of Lightwave Technology, 24(7), (2844-2850)
WoS: Q1, IF: 4.439
SCImago: Q1, h-index: 205, Scopus citations: 9
[Google scholar citations: 12]

19. **G. Katz**, D. Sadot, J. Tabrikian (2006)
Electrical dispersion compensation equalizers in optical direct- and
coherent-detection systems
IEEE Trans. on Communications, 54(11), (2045-2050)
WoS: Q1, IF: 6.166
SCImago: Q1, h-index: 216, Scopus citations: 14
[Google scholar citations: 24]

20. **G. Katz**, S. Arnon, P. Goldgeier, Y. Hauptman, N. Atias (2006)
Cellular over optical wireless networks
IEE Proceedings – Optoelectronics, 153(4), (195-198)
WoS: Q3, IF: 0.404 (2008)
[Google scholar citations: 41]

C. Refereed Articles (ranked by either WoS or SCImago), contd.

21. **G. Kats**, S. Arnon (2004)
Analysis of optical coherence multiplexing networks for satellite communication
IEEE Trans. on Wireless Communications, 3(5), (1444-1451)
WoS: Q1, IF: 8.346
SCImago: Q1, h-index: 224, Scopus citations: 10
[Google scholar citations: 20]

22. **G. Katz**, D. Sadot (2002)
Inclusive bit error rate analysis for coherent optical code-division multiple-access system
Optical Engineering, 41(6), (1227-1231)
WoS: Q4, IF: 1.352
SCImago: Q2, h-index: 109
[Google scholar citation: 1]

23. **G. Katz**, D. Sadot (2001)
ASE noise-reduced optical received based on MZI diversity scheme
Fiber and Integrated Optics, 20(6), (547-551)
[published online: 10 November 2010]
https://doi.org/10.1080/014680301317080981
WoS: Q4, IF: 0.976
SCImago: Q4, h-index: 28
[Google scholar citations: 2]

E. PAPERS PRESENTED AT SCIENTIFIC CONFERENCES PUBLISHED IN PROCEEDINGS

*1. **G. Katz**, S. Zlotsky, I. Vinitzky, A. Babecovand, B. Wolftson, E. Sonkin (2024)
Performance analysis of 100 Gbps PAM-4 at SerDes using digital equalizers
2024 Asian Conf. on Communication and Networks (ASIANComNet)
Bangkok, Thailand, 24-27 October 2024 (1-4) [hybrid]
https://doi.org/10.1109/ASIANComNet63184.2024.10811094

*2. G. Abert, G. Dekel, S. Kurland, M. Ran, D. Malka, **G. Katz** (2019)
Which LiFi's apps may fit mostly to 5G and beyond-5G Technology?
2019 Global LIFI Congress (GLC)
Paris, France, 1-13 June 2019 (1-5)
Scopus citations: 2
[Google scholar citations: 7]

*3. **G. Katz** (2018)
Weiner solution in optical communication systems
The 8th Int'l. Conf. on Electronics, Communications and Networks (CECNet2018) in conjunction with
The 4th Int'l. Conf. on Fuzzy System and Data Mining (FSDM2018)
Bangkok, Thailand, 16-19 November 2018

*4. G. Katz, D. Sadot (2018)
Analytical commutation of electrical equalizer in on-off-keying
optical communication systems
American J. of Computer Science and Information Technology, 6
ISSN: 2349-3917 (page 34)
(presented at Laser Optics & Photonics and Atomic & Plasma Science
Prague, Czech Republic, 16-17 July 2018)

*Since last promotion

E. Papers presented at scientific conferences published in proceedings, contd.

5. A. Gorshtein, D. Sadot, **G. Kats**, O. Levy (2010)
Coherent equalization for 111Gbps DP-QPSK with one sample per symbol
based on anti-aliasing filtering and MLSE
Proc. Advanced Photonics & Renewable Energy
OSA Technical Digest (Optical Society of America, 2010)
Signal Processing in Photonic Communications
Karlsruhe, Germany, June 2010 (paper SPWC4)

6. A. Gorshtein, D. Sadot, **G. Kats**, O. Levy (2010)
Coherent CD equalization for 111Gbps DP-QPSK with one sample per symbol
based on anti-aliasing filtering and MLSE
2010 Conf. on Optical Fiber Communication (OFC/NFOEC),
collocated National Fiber Optic Engineers Conf.
San Diego, CA, USA, 21-25 March 2010 (paper OThT2)
Scopus citations: 12
[Google scholar citations: 15]

7. O. Rozen, D. Sadot, **G. Katz**, A. Levy, U. Mahlab (2008)
Dispersion compensation of self phase modulation impairment in
optical channel using MLSE
10th Anniversary Int'l. Conf. on Transparent Optical Networks (ICTON 2008)
Athens, Greece, 22-26 June 2008 **[invited]** (178-181)
Scopus citations: 3
[Google scholar citations: 7]

8. **G. Katz**, D. Sadot (2006)
Minimum BER criteria for DFE in optical communication system
2006 IEEE 24th Convention of Electrical and Electronics Engineers in Israel
Eilat, Israel, 15-17 November 2006 (170-174)
[Google scholar citations: 2]

9. **G. Katz**, D. Sadot (2006)
Nonlinear electrical dispersion compensation in optical communication system
Int'l. Symp. on Communications and Information Technologies
Bangkok, Thailand, 18-20 September 2006 (795-797)
[Google scholar citation: 1]

10. **G. Katz**, D. Sadot (2006)
Analytical solution of optimal electrical equalization coefficients
IEEE Int'l. Conf. on Communications (ICC 2006)
Istanbul, Turkey, 11-15 June 2006

11. **G. Katz**, D. Sadot (2006)
Radial basis function network for non-linear EDC in optical communication OOK system
Optical Fiber Communication Conf. and the National Fiber Optic Engineers Conf.
Anaheim, CA, USA, 5-10 March 2006 (paper OW144)
Scopus citations: 2
[Google scholar citations: 5]

12. D. Sadot, **G. Katz**, U. Mahlab (2006)
Advanced trends in electrical dispersion compensation in optical communications
OOK systems
8th Int'l. Conf. on Transparent Optical Networks (ICTON 2006)
1, 2006 (123-126)
Nottingham, UK, 18-22 June 2006 **[invited]**
[Google scholar citations: 2]

E. Papers presented at scientific conferences published in proceedings, contd.

13. **G. Katz**, D. Sadot, J. Tabrikian (2005)
Electrical dispersion compensation equalizers in optical long-haul coherent-detection system
Proc. 7th Int'l. Conf. on Transparent Optical Networks (ICTON 2005)
Barcelona, Spain, 3-7 July 2005 (paper We.C15) (80-83)
Scopus citations: 7
[Google scholar citations: 10]

14. **G. Kats**, D. Sadot (2000)
ASE noise reduced optical receiver based on MZI diversity scheme
Proc. 13th Annual Meeting IEEE Lasers and Electro-Optics Society (LEOS 2000)
Rio Grande, Puerto Rico, 13-16 November 2000, 2 (411-412)
Scopus citation: 1

15. **G. Kats**, D. Sadot (2000)
New FSK-based method for coherent optical CDMA systems
Proc. IEEE Sixth Int'l. Symp. on Spread Spectrum Techniques and Applications
Parsippany, NJ, USA, 6-8 September 2000 (194-196)
Scopus citations: 2

F. PAPERS PRESENTED AT SCIENTIFIC CONFERENCES (UNPUBLISHED)

2023 3rd International Conference on Applied Science and Engineering, Theme: Technological Developments and Modern Trends in Applied Science and Advanced Engineering, Paris, France, 25-26 September 2023
Oral presentation: *Polar PAM-4 transmission with interferometer and direct detection receiver* (G. Katz)

H. OTHER PUBLICATIONS

H1. PATENTS

*1. O. Levy, **G. Katz**, A. Gorshtein, D. Sadot (2017)
Blind channel estimation method for an MLSE receiver in high speed optical communication channels
Patent No.: US 9,768,914 B2, Date of Patent: 19 September 2017
[Google scholar citations: 10]

*2. N. Sheffi, **G. Katz**, A. Gorshtein, E. Barzilai, D. Sadot (2017)
Hardware efficient implementation of decision feedback phase estimation for an ultra high speed coherent receiver
Patent No. 9,628,193 B2, Date of Patent: 18 April 2017

*3. D. Sadot, **G. Katz**, A. Gorshtein, O. Levi (2017)
Method and system for coherent equalization of chromatic dispersion of optical signals in a fiber
Patent No. US 9,537,578 B2, Date of Patent: 3 January 2017
[Google scholar citations: 8]

4. D. Sadot, **G. Katz** (2013)
Method and apparatus for increasing the capacity of a data communication channel
Patent No. US 8,483,570 B2, Date of Patent: 9 July 2013

*Since last promotion

H. OTHER PUBLICATIONS, contd.

Patent Application Publications:

1. E. Sonkin, **G. Katz**, D. Sadot, O. Vidal (2017)
   Optimization of bit error rate performance of high order modulated optical signals having signal-dependent noise
   Pub. No.: US 2017/0054533 A1, Pub. Date: 23 February 2017
   [Google scholar citations: 4]