

## Curriculum Vitae

Yael Nemirowsky

Date: Feb 2026

### Personal Data:

Date and place of birth: July 21, 1944, Haifa, Israel  
Citizenship: Israeli  
Family Status: Married, three children  
Address: Department of Electrical Engineering  
Technion—Israel Institute of Technology, Haifa 32000, Israel.  
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**Present Position:** Professor Emeritus, Department of Electrical Engineering,  
Technion—Israel Institute of Technology, Haifa 32000, Israel.

### Academic Degrees:

D.Sc. 1971 Chemistry, Technion—Israel Institute of Technology.  
B.Sc. 1966 Chemistry, Technion—Israel Institute of Technology.

### Academic Appointments:

2013 Professor Emeritus, Dept. of EE, Technion—Israel Institute of Technology.  
2012-2015 Dept. Head, Electrical Engineering, Kinneret Academic College.  
2011-2012 Full Professor, Department of Electrical Engineering,  
Technion—Israel Institute of Technology.  
1985-2011 Associate Professor, Department of Electrical Engineering,  
Technion—Israel Institute of Technology.  
1980-1985 Senior Lecturer, Department of Electrical Engineering,  
Technion—Israel Institute of Technology.  
1996 (July-October) Sabbatical: Ecole Polytechnique Federale Lausanne, Swiss  
Federal Institute of Technology, Switzerland.  
1990 (July-October) Sabbatical: University of Pretoria, South Africa.  
1973-1975 Adjoint Senior Lecturer, Haifa University.  
1971-1972 Research Associate, Laboratory of Physical Chemistry, Faculty of Chemistry,  
Technion—Israel Institute of Technology.

### Secondary Academic Affiliation:

1980- Solid State Institute, Technion.  
1995- Asher Space Research Institute, Technion.  
1980- Kidron Microelectronics Research Center, Electrical Engineering, Technion.

1990– VLSI Center, Electrical Engineering, Technion.  
1995– Wolfson Center for Interface Studies, Technion.

**Professional Experience:**

2015- Board of Directors, TODOS Technologies Ltd.; Co-Founded by Technion  
2014- Chief Scientist, TODOS Technologies Ltd.; Co-Founded by Technion  
2001–2002 Sabbatical: Founder and President (CEO) of BlueBird Optical MEMS Inc. (a company that developed and produced MEMS components for the telecommunication market).  
2002–2005 Chief scientist of BlueBird Optical MEMS  
1975–1980 Research Scientist (Rafael, Ministry of Defense):  
i. electro-optical properties of narrow bandgap semiconductors (HgCdTe);  
ii. quantum semiconductor devices, mainly photo-conductive and photo-voltaic HgCdTe infrared detectors, as well as MOS devices;  
iii. surface properties of narrow bandgap semiconductors;  
iv. integrated circuits technology.  
1972–1975 Research Scientist, Rafael, Ministry of Defense. Research and development of thin-film microwave integrated circuits, surface acoustic wave devices for signal processing.

**Consulting:**

2025-2026 NVIDIA, Circuit Research Group, Israel  
2010-2012 Elbit: Lectures on MEMS sensors and CMOS Image Sensors  
2009- 2011 IBM Haifa Labs  
2008 Lectures on MEMS in Elbit; Lectures on microelectronics technology in KLA  
2006-2007 A series of lectures on Sensors in EIOp  
2006-2007 Ophir Optronics solutions (for Spiricon Inc, Salt Lake City, USA)  
1997–1998 Consulting to Rafael in the evaluation of an IR system.  
1997–1998 Consulting to Kulick&Soffa on the design of a PZT microactuator.  
1997–1998 Consulting to Shellcase on contacts to VLSI chips.  
1991–1997 Consulting to Oramir (a subsidiary of Fairchild and Gal Ram) in a project to develop a photoresist stripper based on excimer laser.  
1994–1995 Consulting to Spire, Patriot Park, Boston, USA.  
1985–1988 Consulting to Quick (a subsidiary of Elron) in projects related to the technology of custom integrated circuits.

**Research Interests:**

1. II-VI compound semiconductor devices: from physical properties of semiconductors, crystal growth of epilayers and heterostructures by MOCVD, interface studies, passivation

- technologies, to novel devices, infrared sensors as well as CdZnTe gamma-ray spectrometers. Including, statistical modeling of the spectral performance of CdZnTe gamma-ray spectrometers.
2. Integrated Microsystems (Focal Plane Arrays), combining II-VI detectors with unique CMOS VLSI silicon signal processing chips, operating in cryogenic temperatures (in IRFPAs-Infra Red Focal Plane Arrays) and exhibiting very low noise (for X/Gamma ray FPAs). Prototypes of complete IRFPAs subsystems were developed, tested and transferred to Israeli industry where they are currently produced. Prototypes of arrays of gamma-ray CdZnTe spectrometers and their silicon signal processors (CdZnTe focal plane arrays) for medical imaging were also developed.
  3. Micromachining technology and Micro-Nano-Opto-Electro-Mechanical Systems (MEMS/NEMS): the research focuses on CMOS compatible micromachined microsystems, pursuing either monolithic systems 3D die bonding to integrate CMOS chips with silicon bulk micromachined chips; in particular combining CMOS-SOI-MEMS/NEMS ("CMOST"), System on Chip (SOC), vertical integration and packaging; The research is directed towards several types of generic MEMS, including: Inertial sensors-accelerometers and gyroscopes, Micromachined thermal and uncooled IR Sensors, Electrostatic and Magnetic Actuators, RF MEMS, Ion Selective Field Effect Transistors, Biosensors as well as CMOS VLSI Analog Design for MEMS.
  4. CMOS Image Sensors: design and characterization of CMOS and CMOS-SOI dies. Study of in-pixel signal processing and noise mechanisms. CMOS Single Photon Avalanche photodiode (SPAD) imagers.
  5. RF MEMS and RF CMOS: Inductors, Varactors, Switches, VCOs, Phase shifter, Power CMOS.
  6. CMOS-SOI-MEMS/NEMS Focal Plane Arrays for uncooled IR (TMOS) and Terahertz imaging (TeraMOS) based on CMOST Technology developed by my group.
  7. GMOS gas sensors
  8. Nanometric temperature and thermal sensors based on CMOS-SOI-MEMS
  9. CMOS SPAD-Single Photon Avalanche Diodes and Imagers
  10. CMOS Si Photomultipliers for photon counting and timing (Time of Flight measurements)

### **Teaching Experience:**

#### Undergraduate

04126 Semiconductor Devices  
04105 Introduction to Electrical Engineering  
04231 Electron Devices 1 (MOS)

#### Graduate and Undergraduate

04234 Electron Devices 2 (Bipolar), also 046234  
04773\* Opto-electronic Semiconductor Devices for sensing, also 046773  
04772\* Interfaces and Charge Coupled Devices  
048932\* Infrared Systems  
048743 Microelectronics Laboratory (1)  
048915 Microelectronics Laboratory (2)  
048923\* Seminar in Microelectronics (Advanced MOS Structures).  
049016\* Design and Modeling of Micro-Electro-Mechanical Systems (MEMS)  
046968\* Micromachining and Micro-Electro-Mechanical-Systems (MEMS)  
048903 Advanced Topics for graduate students: CMOS Image Sensors, device and Design Perspective, (in collaboration with Dr. Amos Feningstein, TowerJazz)

#### **\*: courses developed by me**

#### External Studies\*

\*MEMS/NEMS Microsystems: mechanical, chemical, optical.  
\*VLSI Technology (at industry).

\*MOS Devices (at industry).

\*CMOS Image Sensors and applications (at industry and Kinneret College).

\*: **courses developed by me**

**Editorial Boards:**

1999– Member of the Editorial Board of the Journal of Infrared and Millimeter Waves (JIRMW).

2003– Member of the Editorial Board of the Sensors Letters  
November 2010– Member of the Editorial Board of the launched TowerJazz Technical Journal - (TJ)<sup>2</sup>

November 2015– Member of the Editorial Board of the Sensors

November 2019– Member of the Editorial Board of Micromachines

January 2021-2024 Member of the Editorial Board of Journal of Radiation

**Reviewer of the following scientific journals:**

Applied Physics Letters

Journal of Applied Physics

Sensors and Actuators

Sensors Letters (IEEE)

Journal of Micro Electro Mechanical Systems (JMEMS)

Journal of micromachining and Microengineering (JMM)

Journal of Electronic Materials

Solid State Electronics

IEEE transactions on Electron Devices

Electron Device Letters

Quantum Electronics

IEEE Microwave and Wireless Components

**Membership in Professional Societies:**

IEEE—Institute of Electrical and Electronic Engineers

URSI—Israel National Committee for Radio Science.

Israeli Association for Crystal Growth.

Israeli Vacuum Society.

Israeli MEMS Society.

IEE – Institution of Electrical Engineers.

OSA- Optical Society of America.

SPIE- The International Society for Optics and Photonics.

**Honors:**

1999– Elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE), with the citation: “For contributions to compound semiconductor devices and technology.

1999– Elected Fellow of the Institution of Electrical Engineers, United Kingdom (IEE).

1993 Kidro Kidron Foundation award for "Innovative Applied Research"

1996–2003 Distinguished Lecturer, IEEE Electron Device Society.

1980 “Best Teacher” award.

- 1978 “David Ben Aharon” award for “Novel Applied Research”.
- 1978 “The Security of Israel award” , Ministry of Defense.
- 2000- Chartered Engineer (CEng), Registrant Number 520580, Engineering Council, United Kingdom.
- 2001 Winner, 2001 R&D100 Award recognizing the top 100 new inventions and products of the year. Award recognizes development of a novel technique to grow cadmium zinc telluride crystals for X-ray and gamma detection and imaging applications.
- 2004 Intel Award.
- 2008 IBM Faculty Award.
- 2012 IBM Faculty Award.
- 2024 Named among the top 2% most-cited scientists worldwide by Elsevier, the prestigious scientific publisher.

**Summary: H index-48**

**Orcid #: <https://orcid.org/0000-0002-0274-472X>**

**Yael ‘s professional life is also described in Wikipedia:  
[https://en.wikipedia.org/wiki/Yael\\_Nemirovsky](https://en.wikipedia.org/wiki/Yael_Nemirovsky)**

**Technion Activities:**

- 1983 Member of the Academic Disciplinary Tribunal.
- 1987–1988 Head of Microelectronics Research Center, Department of Electrical Engineering, Technion.
- 1993–2000 Advisor for candidates to the Department of Electrical Engineering.
- 2004–2006 The Senate's Degrees Review Committee.
- 2004 Member of the Joint Steering Committee for collaboration between Italian  
(November)- Universities and Technion in areas such as material science, nanotechnology and  
2007 microsystem, computer science, telecommunication.

**Department Activities:**

- October 82– Head of Microelectronics Research Center, Department of Electrical Engineering,  
April 83 Technion.
- 1983–1986 Assistant to the Dean for students in undergraduate studies, Department of Electrical Engineering, Technion.
- 1993–1999 Member of the Admission Committee of the Department of Electrical Engineering.
- 1993– Academic responsibility for the Microelectronics Lab. (on a semester base).
- 1996–2000 Member of the Safety Committee of the Department of Electrical Engineering.
- 1997–1999 Academic responsibility for the VLSI Lab.
- 1998–2000 Advisor for student exchange and study abroad.
- 1999–2000 Chairperson of the Colloquium Committee of the Department of Electrical Engineering.
- 2004 -2009 Member of the EE faculty committee for teaching curriculum.
- 2006-2010 Chairperson of the EE faculty colloquium committee.
- 2007- Member of the EE faculty committee for selecting excellent employee.

2018-2020 Responsible for the promotion of women in the faculty

**International Public Professional Activities:**

2003- European network of excellence "System on Chip".  
2004- Member of the international committee of IEEE Women in Engineering Awards.  
2005- PhD Opponent, Dept. of Microelectronics and Information Technology, Royal Institute of Technology, Stockholm, Sweden, December 2005.  
2008–2010 Member of the Advisory Board, TechFab, Turino, Italy.  
2014- Board of Directors, TODOS Sensors LTD.

**National Public Professional Activities:**

1983–1984 Member of the Steering Committee of the Microelectronics Activity at Rafael (appointed by the director of Rafael).  
1986–1990 Chairperson of the Israeli IEEE Chapter for Microelectronics.  
1991–1998 Member of the Executive Committee of the Vortman Foundation for the promotion of excellence and technological leadership of high school students.  
1993–2000 Member of the Board of the Israeli Association for Crystal Growth.  
1995–1999 Chairperson of the Israeli Association for Crystal Growth.  
1995–1999 Member of the Board of the Israeli Vacuum Society.  
1996– Chairperson of Section D (Electronics and Photonics – Microelectronics, Electron Devices, VLSI, Electro-Optical Devices), URSI—Israel National Committee for Radio Science.  
1997–1998 Member of the “Ort 2000” Committee to encourage more women into high-tech industry.  
1990–1997 Member of a National Committee for Admission Policy to Israeli Universities.  
2000 Higher Education Council Accreditation Committee for B.Sc. degree program proposed by the Holon Academic Institute of Technology.  
2002–2007 One of the three Technion Founders of the Optical MEMS Consortium, Ministry of Industry & Commerce, with a total budget of ~300,000 million shekels.  
2002–2007 Member of the Managing Committee of the Optical Packaging Consortium, Ministry of Industry & Commerce.  
2002– Member of the board of the Israeli MEMS society.  
2008– Chairperson of the Israeli IEEE WIE chapter.  
2009- Co-founder of a national consortium "HySP-Hyper sensitive Photonics", with leading Israel industry (Elbit and SCD as co-founders). Expected budget: of the order of 100,000 million shekels. 3 EE faculty members receive research grants from this consortium.  
2010 Member of the Ministry of Science committee for Eshkol Scholarships for PhDs.  
2010- (Nov.) Member of the Scientific committee of "HySP-Hyper sensitive Photonics".  
2011 Research Committee of “Pearls of Wisdom”.  
2013-2015 Chairperson of the technical committee of the HYSP consorotium.  
2015- Chairperson of the committee appointed by MALAG (the Israeli higher education council) to consider the permission to grant MSc degree to a college.  
2016- Member of MALAG review committee of the call for “digital learning”  
2020- Chairperson of the scientific committee of “Smart Imaging” consortium

**Organization of International Conferences:**

- 1997-8 Organizing Committee of the International Crystal Growth Conference (ICGC12) and the International Crystal Vapor Phase Epitaxial Growth (ICVPEG10), Jerusalem, July (1998).
- 1998 Session Chairperson, "Electron Devices", Melecon'98, 9<sup>th</sup> Mediterranean Electrotechnical (May) - Conference, May 18–20 (1998), Tel-Aviv, Israel.
- 2000 - IEEE/Lasers and Electro-Optics Society, International Conference on Optical MEMS 2000, 21–24 August, Hawaii: Technical Program Committee.
- 2001- Organization & Technical Committee of Optical MEMS, 2001, Okinawa, Japan (IEEE/LEOS).
- 2001- Councilor of ICCG–13/ICVGE–11, the 13<sup>th</sup> International Conference of Crystal Growth in Conjunction with the 11th International Conference of Vapor Phase and Epitaxy, 2001, Kyoto, Japan.
- 2002- Organizing & Programme Committee of the IEEE Africon 2002 Conference, Fancourt Hotel, George, South Africa from 1 to 5 October, 2002.
- 2002- Organization & Technical Committee of Optical MEMS, 2002, Lugano, Switzerland (IEEE/LEOS).
- 2003– Member of the technical committee of Optical MEMS 2003 in Hawaii, USA (IEEE and LEOS).
- 2003 Chairperson of the session on MEMS modeling in Transducers 2003, Boston, USA.
- 2003-4 Program committee for the MEMS, MOEMS, and Micromachining Conf., which will be part of the first Photonics Europe Symp., Strasbourg-France, April 2004.
- 2004 Session Chairperson of the RF MEMS, "MEMS, MOEMS, and Micromachining Conference", which is part of the first Photonics Europe Symposium, Strasbourg-France in April 2004.
- 2003-4 Program committee for the APCOT MNT '04, the Second Asia-Pacific Conf. of Transducers and Micro-Nano Technology, which will be held in July 2004, Sapporo, Japan.
- 2004 Member of the technical committee of Optical MEMS 2004 in Japan, (IEEE and LEOS).
- 2004 Session Chairperson (CMOS Image Sensors), IEEE International Conference on Components and Systems (ICECS 2004), Tel Aviv, December 2004.
- 2005 Member of the Technical Program Committee of ICMAT: Nano-optics and Microsystem, July, Singapore.
- 2005 Member of the Programme Committee of the IFIP International Conference on Very Large Scale Integration VLSI-SOC 2005, which will be held October 17-19, 2005, at Burswood Resort, Perth, Western Australia.
- 2005 Optical MEMS 2005, Finland - Technical Program Committee
- 2005-6 Program committee for the MEMS, MOEMS, and Micromachining Conference, which will be part of the SPIE Photonics Europe Symp., Strasbourg, France. 3-7 April, 2006.
- 2006 Optical MEMS 2006, Montana, USA - Technical Program Committee, Aug. 21-24, 2006.
- 2006 Session Chairperson, "Nanophotonics", Optical MEMS 2006, Montana, Aug. 21-24, 2006
- 2007 Optical MEMS 2007 and Microphotonics, Taiwan-Technical Program Committee.
- 2008 Optical MEMS 2008 and Microphotonics, Germany-Technical Program Committee.
- 2008 Technical Program Committee- SPIE Photonics Europe 2008: MEMS, MOEMS, and Micromachining Conf., 7-11 April 2008, Strasbourg, France.
- 2008 Session Chairperson, SPIE Photonics Europe 2008: MEMS, MOEMS, and Micromachining conference, 7-11 April 2008, Strasbourg, France.

- 2009 Electrofluidics Symposium, MRS Spring '09 Conference in San Francisco. Symposium Organizers: Prof. Andrew Steckl, Prof. Yael Nemirovsky Dr. Bruno Berge, Prof. Jason Heikenfel.
- 2009 Co-chairing Symposium U: Electrofluidic Materials and Applications—Micro/Biofluidics, Electrowetting, and Electrospinning, MRS Spring '09 Conference in San Francisco.
- 2009 Technical Program Committee- Design, Automation and Test in Europe (IEEE)-20-24 April, Nice, France.
- 2009 Session Chair: RF MEMS devices and sensors; IEEE COMCAS 2009-The international IEEE conference on Microwaves, Communications, Antennas and Electronic Systems.
- 2011 Program Committee member for IEEE Optical MEMS and Nanophotonics, Istanbul.
- 2012 Organizing and hoisting IEEE “THz Sensors, Optics and Applications”, February 8, 2012 (Technion- Israel Institute of Technology).
- 2013 Session Co- Chair: sensors; IEEE COMCAS 2013-The international IEEE conference on Microwaves, Communications, Antennas and Electronic Systems.

**Organization of National Conferences:**

- 1986 - Chairperson of an annual meeting of the Israeli IEEE Chapter for Microelectronics, Technion, March.
- 1993- Session Chairperson, “Semiconductor Devices”, Meeting of the Israeli Vacuum Society, February, Tel-Aviv University.
- 1994- Co-chairperson of a Workshop on Microsystems and Micromachinary (with Prof. Senturia from MIT), Technion, June 25–30.
- 1994- Chairperson of the Organization of the Annual Meeting of the Israeli Association for Crystal Growth, Hebrew University, November 18, Jerusalem.
- 1995 Session Chairperson, “Electronic Devices”. The 18<sup>th</sup> Convention of IEEE in Israel, Tel-Aviv, March 7–8, 1995.
- 1995- Chairperson of an annual meeting of the Israeli Association for Crystal Growth, November 29, Hebrew University, Jerusalem.
- 1996- Co-chairperson of the 1<sup>st</sup> Technion—EPFL workshop on “Microsystems and Nanoelectronics”, February 14–16, Technion.
- 1996- Session Chairperson, “Microelectronics and Chemistry”. The 32<sup>nd</sup> Conference of the Israel Institute of Chemical Engineering, April 8, Dan Panorama, Tel-Aviv.
- 1996- Session Chairperson, “Electronic Devices”. The 19<sup>th</sup> Convention of IEEE in Israel, Jerusalem, 5–6 November, 1996.
- 1996- Session Chairperson, “Micromachining and Microsystems”, The 1<sup>st</sup> Conference of URSI—International Union for Radio Science, Tel Aviv, December 12, 1996.
- 1997- Organizing Committee and Session Chairperson of the 17<sup>th</sup> Israeli Vacuum Society Conference joint with the Israeli Association for Crystal Growth and the Israel IEEE-Electron Device Society, December 4, 1997, Tel Aviv University.
- 1998- Organizing Committee and Session Chairperson, Israel Materials Union--AGIL, November (1998), Ramat Gan.
- 1998- Session Chairperson, “Biochips and Biosensors”, URSI, December, Technion.

- 2000- Session Chairperson, “MEMS and Solid State Devices for Light Processing”, URSI, The 4<sup>th</sup> Annual Conference, The Israel National Committee for Radio Science, February, Tel-Aviv University.
- 2000 - Session Chairperson, “Electron Devices”, The 21<sup>st</sup> Annual Meeting of IEEE, Israel, April, Tel-Aviv.
- 2000- Member of the Panel, “Women in Workplace”, Technoda, March.
- 2000- Session Chairperson, Workshop on Micro-Electro-Mechanical-Systems (MEMS), May 22–24, Technion.
- 2000- Chairperson of the Annual Meeting of the Israeli Crystal Growth Association, December 20, the Weizmann Institute of Science.
- 2001- Organizing Committee, MEMS day in Israel, November 15, 2001, Mosad Neeman, Technion.
- 2002- Chairperson, ISRAMEMS’02, October 21<sup>st</sup>, 2002, Mosad Neheman.  
The 1<sup>st</sup> annual meeting of the Israeli MEMS Society (associated with IEEE and ASME)
- 2002 Session Chairperson, The 22<sup>nd</sup> IEEE Meeting, 1.12.2002, Tel-Aviv.
- 2003 Member of the organization committee and the technical committee of the 2<sup>nd</sup> meeting of the Israeli MEMS society, Tel Aviv University, October 2003.
- 2003 Session Chairperson, 2<sup>nd</sup> meeting of the Israeli MEMS society, Tel Aviv University, October 2003
- 2005 Chairperson, ISRAMEMS’05, June 14, Technion. The 3<sup>rd</sup> annual meeting of the Israeli MEMS Society (associated with IEEE and ASME).
- 2006 Chairperson of the joint Israel-Serbia Workshop on Micro/Nano Science and Technology, June 19-20, Israel.
- 2006 Chairperson of the workshop on Micro Electro Fluidic Systems (MEFS), June 14, Israel.
- 2006 Member of the organization committee and the technical committee of the annual meeting of the Israeli MEMS Society, Tel Aviv University, December 2006
- 2006 Session Chairperson, The annual meeting of the Israeli MEMS society, Tel Aviv University, Dec.2006.
- 2012 Member of the technical committee, the 27 IEEE Israeli Chapter meeting; Eilat – summarizing 50 years of activity.
- 2013 Chairperson of the Technion 2<sup>nd</sup> Workshop on THz sensors and THz imaging, March 4, 2013.
- 2014 Scientific Committee, 2014 IEEE 28-th Convention of Electrical and Electronics Engineers in Israel, Dec. 3-5, 2014, Eilat.
  
- 2020 Oreganizing committee of “Smart Imaging” annual meeting

## Patents

1. Y. Nemirovsky, Inventor, “Single Layer Planar HgCdTe Photovoltaic Infrared Detector with Heterostructure Passivation and P-ON-N Homojunction”, US Patent No. 5,608,208 issued March 4, 1997.
2. S. Kaldor, Y. Nemirovsky, D. Seter, O. Degani, E. Socher and E. Netzer, “Micro-Electro-Opto-Mechanical Inertial Sensor”, IL122947, WO99/36788, U.S.Patent 6,350,983, February, 2002.
3. Y. Nemirovsky, S. Stolyarova and B. Brosilow, “Method and apparatus for removing native oxide layers from silicon wafers”, US Patent 6,395,192, 2002.
4. Y. Nemirovsky, S. Stolyarova and B. Brosilow, “Apparatus for removing native oxide layers from silicon wafers”, US Pat. 10115666 - Filed Apr 4, 2002 - STEAG CVD Systems Ltd.
5. Y. Nemirovsky and N. E. Chayen, “Nucleation-Inducing Material, World Patent WO 02/088435 A1, issued November 7, 2002.

6. D. Starosvetsky, M. Kobler, Y. Yahalom and Y. Nemirovsky, "Semiconductor Etching Process and Apparatus", US Patent 6,521,118, issued 2003.
7. Y. Nemirovsky, R. Weil, R. Beserman, Y. Shamir, S. Stolyarova, and A. Peiser, "Gamma-Ray Detector", US Patent 6,645,787, issued November 2003. USA Patent, 6,645, 787, 2003.
8. Y. Nemirovsky, "Method for the metallization of optical fibers", US Patent, No 6.847,752, issued September 2004.
9. Y. Nemirovsky, "Integrated Actuator for Optical Switch Mirror", US Patent, No 6.847,752, issued January 2005.
10. Y. Nemirovsky, O. Degani, E. Socher, D. Setter, "Method and Apparatus for micromachined sensors using enhanced modulated integrative differential optical sensing", USA Patent 7,091,715 B2, 2006.
11. O. Degani, D. Elata, E. Socher and Y. Nemirovsky, "An efficient method of extracting the Pull-in parameters of an electrostatically activated MEMS device for the purpose of designing the device", US Patent application No. 20030028360, February 2003.
12. O. Degani, E. Socher and Y. Nemirovsky, "Apparatus and Method for Micro-Machined Sensors Using Enhanced Modulated Integrative Differential Optical Sensing", US Patent Application No 20040060355, issued 2004.
13. E. Socher, O. Degani and Y. Nemirovsky, "TMOS- Infrared uncooled sensor and focal plane array", Pending Patent, PCT IL 2004/000142, Priority Day, 20.02.03. US Utility Patent Application 10/545,892. USA Patent 7,489,024 B2, 2009.
14. A. Morgenshtein, U. Dinar and Y. Nemirovsky, "Method for ISFET measurements without readout circuitry and application to combined pH-image sensor", US Patent 7,544,979, (approved 2008).
15. S. Stolyarova, Y. Sinai, M. Weinstein, A. Shai, Y. Nemirovsky, "Cd<sub>1-x</sub>Zn<sub>x</sub>S high performance TCR material for uncooled microbolometers used in infrad sensors and method of making same", US Patent Application, 11/294,677 Filed December 6, 2005, USA Patent 7,527,999, 2009.
16. Y. Nemirovsky, L. Salem, "A Millimeter Wave Pixel Composed of Sub-Pixels and Focal Plane Array Imaging Sensors Thereof", PCT/il, 2005/001062.
17. D. Elata, O. Bochobza-Degani and Y. Nemirovsky, "Device and Method for Stacked Multi-Level Uncoupled Electrostatic Actuators", US Patent 7,423,794 B2, issued September 8, 2008.
18. Y. Nemirovsky, "TERAMOS-Terahertz thermal sensor and Focal Plane Array", US Patent application, October 2009.
19. Y. Nemirovsky, D. Corcos, M. Dolgin, S. Katz and A. Svetzlina, "CMOS-SOI- MEMS Thermal Antennas for Uncooled Thermal Imaging", (Technion US provisional Patent Application 2010).
20. Igor Brouk, Lior Gal and Yael Nemirovsky, "Differential, Calibration-free and Reference-electrode-free CMOS ISFET with Remote Sensing Antennas for Ions and pH Measurements".
21. Y. Nemirovsky, D. Corcos, G. Peled, A. Svetliza, and S. Bar-Lev, "Blackbody as a THz emitter and a THz measurement and characterization set-up based on blackbody and THz filters", provisional submitted on 4/4/2011, # 61/471,366.
22. A. Morgenshtein, U. Dinar and Y. Nemirovsky, "Ion concentration transistor and dual-mode sensors", US patent No. 7,799,205 (issued on 21.9.10).
23. Y. Nemirovsky et al; Device having an avalanche photodiode and a method for sensing photons", provisional submitted on 18/9/2011, # 61/471,366. Full patent submitted 2012.
24. Y. Nemirovsky, T. Merhav, V. Savuskan, A. Nemirovsky, "Gun Muzzle flash detection using a CMOS single photon avalanche diode", Technion US patent,application, applied April 2014.
25. Y. Nemirovsky and Y. Shoham, "Sensor array with self-aligned optical cavities", applied 2014

26. Y. Nemirovsky, "Sensing Device Having a Bicmos Transistor and a Method for Sensing Electromagnetic Radiation", Technion Patent Application, Jan.2014.
27. Y. Nemirovsky, "Gas Sensing Device and a Method for Sensing Gas", TODOS-Technion Patent Application, May, 2014.
28. Y. Nemirovsky, A. Nemirovsky and S. Melman, "Optical Gas Sensing Device and a Method for Sensing Gas", TODOS -Technion Patent Application, May, 2015
29. Y. Nemirovsky, A. Nemirovsky and S. Melman, " Gas Sensing Device Having a Long Optical Path and a Method for Sensing Gas", US Provisional patent, March 2016
30. Y. Nemirovsky, "CMOS Silicon Light Emitting Diode Array Integrated with CMOS SPAD sensors Array: SiliconLightSense™", US Provisional patent, February 2016
31. Y. Nemirovsky, "Robust Sensor", US provisional patent, 2017
32. Y. Nemirovsky, " Compact array + manufacturing process", US provisional patent, 2017
33. A. Eshkoli and Y. Nemirovsky, "Digitally configurable on-the-fly SiPM gating and sensing methods for high resolution light detection and range finder based on ToF", April 2018.
34. A. Eshkoli, A. Katz and Y. Nemirovsky, "2D and 3D CMOS super imaging based on Staring Si Photomultiplier", April 2018.
35. A. Katz and Y. Nemirovsky, "CMOS SPAD Active Sensing", US provisional patent, 2019
36. Y. Nemirovsky, I. Brouk and S. Bar-Lev, "TMOS differential voltage readout", provisional Patent, 2020,
37. Y. Nemirovsky, CMOS-SOI-NEMS IR Imager (TMOS Imager) and Method of preparation", Provisional patent, 2020
38. Y. Nemirovsky. Pressure level sensing device and a method for sensing pressure. US Patent, 2020
39. Y. Nemirovsky, A. Nemirovsky, S. Melman. Gas sensing device having distributed gas sensing elements and a method for sensing gas. US Patent, 2020
40. Y. Nemirovsky, A. Nemirovsky. Multi layered thermal sensor. US Patent, 2020
41. Y. Nemirovsky. Robust GMOs. US Patent, 2021
42. A. Katz, Y. Nemirovsky. Sensing device comprising electrical components of high voltage domain and low voltage domain to perform quenching of a single photon avalanche diode. US Patent, 2021
43. Y. Nemirovsky, S. Bar-Lev Shefi, I. Brouk. Differential mode detection circuit. US Patent, 2023
44. A. Eshkoli, Y. Nemirovsky. Device and method for generating image and distance information. US Patent, 2023
45. A. Nemirovsky, M. Avraham and Y. Nemirovsky "Passive wearable non-invasive glucose measuring system based on new technology and methodology", US provisional patent, 2024

**Research Grants\* (1990- )**

\* **Research Grants (1982–1990):** Principal Investigator in funded research programs with an annual budget of approximately 1.5 million US Dollars.

\*\* **Unless stated otherwise, Y. Nemirovsky is the sole PI**

1 Ministry of Industry & Commerce, “Infrared and X-Ray Sensors for Medical Measurements”, \$50,000 (1990–1992). (Technion Budget No. 051–702).

2 Ministry of Science, “Wide Band Gap HgCdTe”, \$80,000 (1990–1993). (Technion Budget No. 051–691).

3 Semiconductor Devices (SCD) Ltd., “Growth and Characterization of Bulk and Epitaxial CdZnTe”, \$85,000 (1991–1995). (Technion Budget No. 051–755).

4 Galram (Rafael), “Photoconductive Arrays with Focal Plane Signal Processing”, \$50,000 (1990–1991). (Technion Budget No. 051–705).

5 Galram (Rafael), “1/f Noise and Electrical Properties of Si MOS Transistors Operating at 77K”, \$16,000 (1990–1991). (Technion Budget No. 051–709).

6 Ministry of Energy, “CdTe Solar Cells for Satellites”, (1992–1996), 1st year: \$75,000. 2nd year: \$45,000. 3rd year: \$65,000. (Technion Budget No. 050–768).

7 The Alexander Goldenberg Foundation, “New X-ray Detectors for Computerized Tomography”, \$4,000 (1992). (Technion Budget No. 051–766).

8 The Asher Peled Foundation, “Superstrates for Infra Red Focal Plane Arrays”, \$6,000 (1992). (Technion Budget No. 051–782).

9 The Kidron Foundation, “Innovative X-ray Focal Plane Arrays for Medical Imaging”, \$100,000 (1993). (Technion Budget No. 051–791).

10 Intel, “A Study of CMOS Compatible Temperature Measurement Techniques for On-Chip Thermal Management”, \$10,000 (1994). (Technion Budget No. 051–845).

11 MCS Ltd., “Study of CMOS Microelectromechanical Systems for Sensors and the Realization of a Pressure Sensor”, \$30,000 (1994). (Technion Budget No. 051–824).

12 Rafael, “Study and Development of a Microelectromechanical Resonator Using CMOS and Micromachining Technologies”, 1st year: \$70,000. 2nd year: \$88,000 (1995). (Technion Budget No. 051–842).

13 Ministry of Industry & Commerce, “MOCVD CdZnTe Superstrates”, \$80,000. (November 1995–1996). (Technion Budget No. 051–877).

14 Ministry of Science & Arts, “Micromechanisms and Microsystems: Micromechanic Flexures and Vibratory Systems”, \$235,000 per year. (November 1995–). (Technion Budget No. 051–904).

15 Ministry of Science & Arts, “Rapid Thermal Processing of Metallization for CdZnTe”, \$35,000. (December 1995–1998). (Technion Budget No. 095–288).

16 Ministry of Industry & Commerce, “Si Micro-Optical Bench”, Consortium for Wide Band Communication, (1995–), \$12,000 per year.

- 17 Ministry of Industry & Commerce, “In Situ Reactor/Wafer Vapor Phase Cleaning for Nonelectronics”, Consortium for 0.25  $\mu\text{m}$ , (1996–2001), \$65,000 in 1996 and \$120,000 in 1997, \$75,000 in 1998, \$55,000 in 1999 (Technion Budget No. 71930100).
- 18 Academy of Science, “Ordering and Ferroelectricity in II–VI Semiconductors”, \$108,000, Y. Nemirovsky – Investigator. R. Weill and R. Beserman – Principal Investigators, (1994–1997). (Technion Budget No. 095–263).
- 19 Chutik Foundation, “Multimodality Monitory of Brain Function with Micromachined Integrated Multisensors”, (1996–), \$35,000. (with U. Dinar and M. Feinsod). (Technion Budget No. 181–876).
- 20 Ministry of Defense, “Uncooled IR Thermal Detectors”, (1996–2002), \$330,000. (Technion Budget No. 051–938).
- 21 Ministry of Science, “3D Light Structures: Design, Technology and Applications”, (1996–1999), \$120,000. (Technion Budget No. 050–895) (with Prof. J. Shamir).
- 22 Academy of Science, “Control and Generation of Bandgap Discontinuities by Rapid Thermal Processing”, (1997–2000), \$113,000. (Technion Budget No. 049–001).
- 23 Ministry of Science, “Rapid VLSI Prototyping-Shiram”, (1997–2001), \$300,000. (Technion Budget No. 059–003). (With Prof. R. Ginosar).
- 24 Ministry of Science, “CdZnTe Arrays for Medical Imaging”, (1998–2001), \$180,000. (Technion Budget No. 051–956).
- 25 German-Israel Corporation MATECH, “Pyroelectric Infra Red Micromachined Detector Arrays”, (1998–2002), DM 400,000. (Technion Budget No. 051–983).
- 26 Ministry of Defense, “MEMS Inertial Sensor”, (1999–2000), \$30,000. (Technion Budget No. 051–106).
- 27 Ministry of Science, “CMOS Camera on a Chip”, (1999–2003), \$40,000 in 1999, \$50,000 in 2000, \$50,000 in 2001. (Technion Budget No. 051–003).
- 28 Ministry of Science, “Control of Defects by Ultrasonic Energy”, (1999–2002), (\$100,000 per year). With Prof. Weil, Profs. Shamir and Beserman. (Technion Budget No. 095–324).
- 29 New York Metropolitan Research Fund, “CdZnTe Arrays for Gamma and Positron Annihilation Imaging”, 1999, \$18,000. With Prof. B. Rosner. (Technion Budget 051–029).
- 30 The International Atomic Energy Agency, “CdZnTe Arrays for Hand Held Gamma Spectrometers”, (1998–2000). \$40,000. (Technion Budget 051–969).
- 31 The Israeli Atomic Energy Agency, “VLSI Electronics for Nuclear Detectors”, (2000). \$20,000. Technion Budget 051–969).
- 32 The Ministry of Defense, “Analog and Mixed VLSI CMOS Design”, (2000–2002). \$180,000. (Technion Budget 059–008).
- 33 The Australian Ministry of Education, “A Novel Backside-illuminated Architecture for Vision Focal Plane Arrays”, (2000–2003). \$40,000. (Technion Budget 059–007).
- 34 Rafael, “An Infrastructure Research in MEMS”, (1999–2002). \$350,000. (Technion Budget 051–842).
- 35 German-Israeli Foundation, GIF, “Vapor Phase Grown CdZnTe Gamma-Ray Spectrometers”, (2001–2004). 160,000 Euro. Technion Budget 051–089).
- 36 Ministry of Industry & Commerce, Magnetron, “Silicon-On-Insulator (SOI) CMOS Image Sensor with Backside Illumination”, (2000–02). \$350,000. (Technion Budget No. 059–010).
- 37 Rafael, “MEMS Devices”, (2001–). \$150,000. (Technion Budget 051–104).

- 38 European Community, "Uncooled IR Detectors", (2002–). \$322,500. (Technion Budget 051–097).
- 39 Ministry of Industry & Commerce, Magent Consortium MOEMS, "MEMS Inertial Sensors", (2001–2003). \$160,000. (Technion Budget No. 051–138).
- 40 Ministry of Industry & Commerce, Magent Consortium MOEMS, "Uncooled IR Detectors", (2001–2003). \$150,000. (Technion Budget No. 051–137).
- 41 Technion Foundation for Security, "A new micromachined uncooled IR imager based on CMOS-SOI transistors", (2003), \$25000 and 500,000 shekels, (Technion Budget No. 051–180).
- 42 Australia, "High Speed CMOS photodiodes", AU\$ 80,000. (Technion Budget No. 059–010) (2004-2006).
- 43 Ministry of Defense, "TMOS transistors for uncooled IR sensors", 500,000 shekels, (Technion Budget No. 051–180).
- 44 Mitchel Foundation, "Novel electrostatically actuated liquid micropump and gas microvalve", Mitchell Fund, November 2003.
- 45 Orbotech, "Silicon Thin Film Transistors", (2003–4). \$60,000. Technion Budget No. 051–174).
- 46 ELOP, "Study of Advanced CMOS Design For Applications in Image Sensors", (2003–4). \$ 9,200. (Technion Budget No. 059-015).
- 47 Technion Foundation for Security, "a new micromachined uncooled IR imager", (2003), \$ 25000 and 500,000 shekels, (Technion Budget No. 051–180).
- 48 Australia, Joint research with ECU University, "CMOS SOI Photodiodes", (Technion Budget No. 1005222) 40,000 Australians \$ (2004-5).
- 49 Ministry of Defense, "TMOS transistors for uncooled IR sensors", 800,000 shekels, (Technion Budget No. 051–180) (2003-4).
- 50 Intel, "Charge Detection Circuitry for low noise and high bandwidth", \$ 20,000, (Technion Budget No. 1004796).
- 51 Ministry of Defense, "Hybrid RF MEMS Switch", 400,000 shekels, (Technion Budget No. 1005149) (2004-7).
- 52 Ministry of Defense, "Scattered Sensors", 250,000 shekels, (Technion Budget No. 2004557) (2004).
- 53 Technion Manlam, " Simulation and Dynamic Monitoring of the Musculo-Skeletal System by Novel Miniature and Biocompatible MEMS Acelerometers (with Prof. J. Mizrachi), (Technion Budget No. 1005661) (2005).
- 54 Technion Manlam and space center, "Novel DMOS transistor for space application", 1005699, \$ 7000, 2005.
- 55 Ministry of Science, "network of sensors based on smart dust concept", with Dr. S. Arnon, Ben Gurion University 2005- (400,000 sheksls).
- 56 Magnetron with Rafael, with Dr. Shusser " MEMS based high pressure regulator" ), October 2005-2007 (1st year 460,000 shekels; 2nd year 360,000 shekels).
- 57 Ministry of Science, "MEMS Porous Silicon Cantilevers for Ultrasensitive Biosensing Applications", collaboration with India, 2005-6, \$ 100,000, Technion number 1005729.
- 58 Nato, "Development of a novel sensing technique based on nanomechanics for rapid detection of bioagents", 2006-8, 235,000 Euro (Technion part: 100,000 Euro), Technion number 1006178 (a consortium with several members from Europe. I am the PI).

- 59 Ministry of Defense, "Sensing with cantilever microstructures", 2006- 2012, \$360,000, Technion number 1006329 (~60,000). 2013- 280,000 shekels.
- 60 Physical Logic, "Tiny MEMS accelerometer for medical applications", 2006-,\$71,400, Technion number 1006432.
- 61 Singapore Technologies (STE), "Broadband RF MEMS radio", 2006- , \$360,000, Technion number 1006696.
- 62 Ministry of Defense: 200,000 \$ for equipment (MEMS measuring system), 2007.
- 63 Rafael, "RF CMOS", 2008-2013 , 1007682, 100,000 shekels per year.
- 64 Rafael, "RF MEMS", 2003-2011, 800,000 shekels, 2010297.
- 65 Ministry of Industry & Commerce, Magenton with Tower, "CMOS-SOI-MEMS Platform for Power Management", (2008–2010). 600,000 shekels per year.
- 66 Tehnofab, Italy, "Study of Future MEMS Directions", 1008112, 2008 (6,000 €).
- 67 Technion center for security, "ultrasensitive sensor for explosives", 65000 shekels, (with Prof. Y. Eichen) 2008 (2011213).
- 68 IBM Foundation, "THz imager", 20,000\$, 2008.
- 69 Technion Gurwin Foundation, "sensor for air quality", (applied, with Prof. Y. Eichen).
- 70 Technion Security Center, "Multi Cantilever Based Continuous Sensing of Chemical Warfare Agents", (applied, with Prof. Y. Eichen); 1008367, 2008.
- 71 Orbotech, "Characterization of CdZnTe crystals and devices", 1008381, 20,000\$, 2009.
- 72 Ministry of industry and commerce, "CMOS ISFETs for medical applications", 1008478, 465,000 shekels, 2009.
- 73 Ministry of industry and commerce, "Arrays of Si Avalanche Photodiodes", 1009478, 2011-270,000 shekels, 2012- 660,000 shekels per year for the following 3 years. Also: 200,000 shekels for lab instruments approved in 2012. 500,000 shekels for 2013.
- 74 Water authority, "Electro-optical multisensor for water", with Prof. Y. Eichen, , 350,000 shekels (2010-2013).
- 75 MEMS collaboration with KAZAN, 1009938, ~65,000\$, 2011.
- 76 Silicon Integrated Solar Cells, SOLCHIP, 1009939, 25,000 shekels, 2011.
- 77 FP7, European Community, "Terahertz Photonic Imager on chip", ICT-2011.3.5: Core and disruptive photonic technologies, total budget: ~2 million Euros, Technion part: 290,000 Euros. 2011-2014. Technion #2015552.
- 78 Magenton with TowerJazz Semiconductors, "DC to DC Converter with integrated inductor",#2015530, 1.1 million shekels, 2011-2013.
- 79 "Real Fire". Submitted to European Community Security Call (to fight large scale fires)- IP project. Technion part: sensors for detecting fires. Technion Requested budget: 210,000 Euro. Submitted November 2011.
- 80 IR Radiation Source, Ministry of Defense, 2011- 2014 (150,000 shekels per year) #2015076.
- 81 "TMOS Feasibility Study", TODOS Technologies; 2012-2015, 4 million shekels, starting April 1, 2012.; 2017: 600,000 shekels
- 81 "CMOS SPAD for the detection of stray firing", MEYMAD, 2013-2014, 450,000 shekels.
- 82 "ThermallyOptimized Paradigm of thermal Management (TOP-M)", DARPA, 300,000\$, August 2015- 2017.

- 83 Magnetron, "CMOS SPAD Electro-Optical System for the detection of gun muzzle flash", Ministry of Economy, 2016-2018, 1.4 million Shekels.
- 84 Nofar-Memad, "CMOS Si Photomultiplier", 2017, 0.55 million Shekels, Innovation Authority
- 85 Magent "smart imaging", 2019-2021, 750,000 Shekels, Innovation Authority
- 86 Mafat, "Muzzle Fire Detection", 2019-2020, 400,000 Shekels
- 87 "Madry Foundation", CMOS SPAD Imager for muzzle gun detection", 1.5 million \$, 2019-20
- 88 "Innovating Sensing Systems", 2020, 2,4 million Shekels, TODOS Technologies

## Graduate Students

### Completed D.Sc. /Ph.D. Theses

1. A. Kornfeld (D.Sc.), “Semiconductor Technology and Focal Plane Signal Processing”, Co-supervisor (1983–1986). (Supervisor: Prof. I. Kidron).
2. R. Adar (D.Sc.), “Junctions and Interfaces in Narrow Bandgap Semiconductors”, co-supervisor (1984–1988). (Supervisor: Prof. I. Kidron).
3. Y. Hait (D.Sc.), “Focal Plane Signal Processing for Staring Infrared Sensors”, (1985–1989).
4. D. Rosenfeld (D.Sc.), “Infrared Detectors – HgCdTe Photo-Diodes of Various Structures”, (1985–1989).
5. I. Bloom (D.Sc.), “Advanced Infrared Sensing Focal Plane Arrays”, (1988–1991). (Cosupervisor: A. Bar-Lev.)
6. L. Goldmintz (D.Sc.) “Focal Plane Arrays Signal Processing for Photoconductive Array”, (1988–1993).
7. A. Ruzin (D.Sc.), “CdTe Sensors for X-Ray Imaging”, (1992–1997).
8. N. Amir (D.Sc.), “Interface Studies of II–VI Epilayers”, (1992–1997).
9. D. Goren (D.Sc.), “II–VI Abrupt and Graded Heterojunctions”, (1992-1997). (Co-supervisors: A. Bar-Lev).
10. G. Asa (D.Sc.), “CdZnTe Nuclear Detector Arrays for Spectroscopy and Imaging”, (1995–1999).
11. M. Kobler (D.Sc.), Co-supervisor (with Prof. Y. Yahalom as supervisor), “Coatings for X-Ray Masks”, (1995–2000).
12. C. Jakobson (D.Sc.), Co-supervisor (with U. Dinar as supervisor), “Noise Behaviour of Generic Ionic MOSFETs”, (1997–2001).
13. A. El-Bahar (Ph.D.), “Contacts and Passivation for Porous Silicon”, (1998–2003).
14. I. Brouk (Ph.D.), “CMOS Image Sensors”, (2000-4).
15. E. Socher (Ph.D.), “CMOS Infrared Imagers”, (1999–2005).
16. O. Degani (Ph.D.), “Integrated Sensing and Actuation for Micro-Electro-Mechano-Optical Systems”, (1999–2004).
17. E. Langzam (Ph.D.), Co-supervisor (Supervisors: J. Mizrahi–Biomedical Eng., Y. Nemirovsky - Electrical Eng.; Advisor: D. Elata – Mechanical Eng.) “Dynamic Monitoring for Application of Electro-Mechanical Devices in the Musculo-Skeletal System”, (7/2002–2007).
18. A. Bransky (Ph.D.), Co-supervisor (with U. Dinar as supervisor), “Laser detection of blood cells flowing in silicon microchannels”, (2003–2007).
19. Oren Aharon (Ph.D.), "Micro-Electro-Mechanical Systems for Communication Applications", (2003-2009).
20. Ariel Shemesh (Ph.D.), Co-supervisor (with Y. Eichen as supervisor), “MEMS based cantilever sensors”, (2008-2013).
21. Vitali Savuskan (Ph.D.), "CMOS in pixel readout for Avalanche Photodiode Arrays the Geiger mode (2010-2015).
22. Alex Svetzlina (Ph.D.), "CMOS-SOI-MEMS Thermal antenna for THz imaging" (2010-2015).
23. Evgeny Pikhay (Ph.D.) “Investigation of radiation influence on nano-scale CMOS”, (2011-2016).
24. Maria Maliz (Ph.D.), "Study of Thermal Effects and Noise in CMOS devices and circuits” (2013-2018)

25. Alex Zviagintsev (Ph.D.), “Uncooled Passive IR sensors and small Arrays based on CMOS-SOI-NEMS Technology” (2014-2018)
26. Alexander Katz (PhD); “Sensors and 2-D imagers based on the CMOS SPAD detectors”, (2016-2019)
27. Ayal Eshkoli (PhD); “Electro-Optical System for Automotive Applications based on CMOS SiPM Sensors for ToF Ranging and Imaging” (2016-2022)

*Completed M.Sc. Theses*

28. R. Goshen (M.Sc.), “Plasma Anodization of Narrow Band-Gap Semiconductors”, (1982–1984).
29. L. Burstein (M.Sc.), “MIS Devices in  $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ ”, (1983–1985).
30. A. Kepten (M.Sc.), “Growth and Electrooptical Properties of  $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$  Epitaxial Layers”, (1984–1986).
31. E. Sand (M.Sc.), “Liquid Phase Epitaxy of  $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ ”, (1984–1986).
32. D. Shulman (M.Sc.), “Electrooptical Devices in Heterostructures in  $\text{CdTe}/\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ ”, (1986–1988).
33. I. Bloom (M.Sc.), “Impedance Spectrum Analysis of MIS Devices in  $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ ”, (1985–1988).
34. Y. Volpert (M.Sc.), “Novel Silicon Focal Plane Signal Processing for  $\text{HgCdTe}$  Diode Arrays”, (1988–1990).
35. N. Amir (M.Sc.), “MOCVD Growth of  $\text{HgCdTe}$  Epitaxial Films for Infrared Detectors”, (1988–1990).
36. M. Meyassed (M.Sc.), “Electrical Characterization of Narrow Bandgap Semiconductors by MIS Devices”, (1988–1991).
37. I. Levy (M.Sc.), “Optimal Design of Thermal System with Parallel Scanning”, (1989–1991).
38. D. Goren (M.Sc.), Heterostructures in the Alloy System  $\text{HgCdTe}$ ”, (1990–1991). (Cosupervisor: A. Bar-Lev.)
39. A. Unikovsky (M.Sc.), “Low Frequency Noise Phenomena in  $\text{HgCdTe}$  Photodiodes”, (1989–1992).
40. A. Ruzin (M.Sc.), “Photo-Assisted MOCVD Growth of  $\text{HgCdTe}$ ”, (1990–1992).
41. L. Djaloshinsky (M.Sc.), “Wide Band Gap  $\text{HgCdTe}$ ”, (1991–1993).
42. G. Asa (M.Sc.), “Metal-Semiconductor Contacts on II-VI Compounds”, (1992–1995).
43. E. Khanin (M.Sc.), “MOCVD Growth and Characterization of  $\text{CdTe}$  Epilayers”, (1992–1995).
44. C. Jakobson, M.Sc., “Noise Phenomena in MOS Devices for Charge Sensitive Preamplifier”, (1993–1996).
45. M. Levy (M.Sc.), Co-supervisor (with Prof. R. Beserman as supervisor), “Ordering in Mixed  $\text{CdZnTe}$ ”, (1994–1997).
46. G. Gordon (M.Sc.), “Characterization of Heterojunctions by Capacitance-Voltage Measurements”, (1994–1998).
47. R. Elbahar, “Micro-Electro-Mechanical System for Pressure Measurement based on CMOS Technology”, (1995–1998).
48. E. Socher (M.Sc.), “Study of Uncooled Micromachined Integrated Thermal Sensors”, (1996–1999).

49. O. Degani (M.Sc.), "Vibrating Micro-Electro-Mechano-Optical Systems with Integrated Optical Sensing", (1996–1999).
50. I. Brouk (M.Sc.), "Study of CMOS Photodiodes and Low Noise Analog Readout for Visible Photon Detection", (1997–2000).
51. A. Peyser (M.Sc.), "X-Ray Detectors for High Rate Applications", (1998–2000).
52. M. Ifraimov (M.Sc.), "Statistical, Electrostatic and Numerical Models of Spectral Performance of 2D-Arrays of Gamma-Ray", (2000–2002)
53. A. Morgenstein (M.Sc.), Co-supervisor (with Prof. Uri Dinnar, Biomedical Engineering Dept., as supervisor), "Design and Methodology of ISFET Microsystems for Bio-Telemetry", (2000–2003).
54. S. Feldman (M.Sc.), "Design Fabrication and Characterization of a MEMS Based Switch", (2001–2005).
55. E. Sidorov (M.Sc.), Co-supervisor (with H. Yarnitzki as supervisor), "Reactive Ion Etching of silicon ", (2000-2004).
56. L. Sudakov-Boreysha (M.Sc.), (with U. Dinar as co-supervisor), "Biocompatible Encapsulation Techniques for ISFETs", (2002–2005).
57. O. Cohen (M.Sc.), "MEMS display for the retina", (2001-2006).
58. L. Gitelman (M.Sc.), "Study of micromachined transistors as uncooled sensors for IR imaging", (2004-2006).
59. R. Khamaisi (M.Sc.), "Co-supervisor (with U. Dinar as supervisor), "Microchannel Flow Device for the Study of Microcirculatory Blood Flow", (2002–2006).
60. T. Nachmias (M.Sc.), Co-supervisor (with H. Yarnitzki as supervisor), "Deep dry etch (DRIE) processes in silicon for 3D microstructures", (2002-2007).
61. Moshe Weinstein (M.Sc.), "Study of micromachined microbolometers as uncooled sensors for IR Imaging", (2005-2008).
62. Omer Lavie (M.Sc.), "MEMS Microwave Filters" (with Dr. A. Saad as co- supervisor), (2007-2009).
63. Eyal David (M.Sc.), "Study and design of RF MEMS tunable capacitor", (2007-2009).
64. Tal Zlotnikov (M.Sc.), "Study and design of RF MEMS Phase Shifter", (2007-2009).
65. Zivit Gutman (M.Sc.), "Study of CMOS-SOI-MEMS transistors and systems", (2006-10).
66. Roe Ben Yishay (M.Sc.), "MEMS Inductors and their applications in low noise RF-CMOS circuits", (2007-2010).
67. Shlomo Katz (M.Sc.), "Electromagnetic applications of CMOS-MEMS", (2008-2010).
68. Dan Corcos (M.Sc.), "CMOS-SOI-MEMS sensors for THz Imaging", (2009-2012).
69. Gal Segev (M.Sc.), "CMOS Phase Shifter", (2009-2012).
70. Maria Maliz (M.Sc.), "Study of CMOS-SOI technologies and devices (2011-2013).
71. Gil Visokolov (M.Sc.), "CMOS Avalanche Photodiode Arrays operating in the Geiger mode (2010-2013).
72. Yoni Khasin (M.Sc.), "Electro-optical characterization of Single Photon Avalanche Photodiode Arrays in CMOS Technology" ( 2011-2013).
73. Tomer Merhav (M.Sc.); "An Electro-Optic Flash Detection System in the visible waveband", (2011-2014).
74. Micgael Slavenko (M.Sc.), "Study of CMOS-SOI-NEMS THz Sensor", (2011-2014).
75. Michael Javitt M.Sc.), "CMOS SPAD for 3D imaging applications", (2014-2015)

76. Ayal Eshkoli (M.Sc.), "Design and Analysis of High Performance Inductors for Power Management Applications", (2012-2014).
77. Tomer Saraf (M.Sc.), "Study of CMOS readout circuits for thermal sensors", (2012-2015).
78. Avi Shoham (M.Sc.), "Fast Optical CMOS Sensor-based Applications and Signal Preprocessing Algorithms", (2014-2017)
79. Constantin Vainshtein "Architectural and System Aspects of a SPAD-Based Muzzle-Flash Detection System" (2017- 2019)
80. Dima Shlenkevitz, "CMOS-SOI-MEMS Transistors for Gas Sensing", (2018-2020)
81. Roy Shor, "Study of CMOS Direct Sensing Systems for High Energy Alpha Radiation," (2017-2020 )
82. Amir Zeevi, "CMOS mixed circuit design for low-power applications", (2018-2023)
83. Gil Cherniak, "Study of Electro-Optical Effects in Sensors", (2020-2024)
84. Epraim Bukshish, M.Sc., "A Study on Analog Voltage Mode Reading of Digital Thermal MOS (TMOS)", (2022-2025)
85. Adir Kraydman, M.Sc., "Making Gas MOS (GMOS) Sensors Smarter with Tiny Machine Learning" (2023-2026)
86. Tal Gofman, M.Sc., "ROOM TEMPERATURE CMOS SPADS FOR QUANTUM COMMUNICATION IN . DATA CENTERS " (2023-2026 ).
- 87.

1. *Theses in progress*
2. Moshe Avraham, PhD, "intelligent sensing systems", (2022-)
3. Eli Zelser, M.Sc, "Real Time Implementation of Digital Filter for Enhanced Gas Sensing", (2024-)
4. Itamar Priel, M.Sc., "Ge photodiodes for silicon photonics". (2023-)
5. Hanin Ashkar, M.Sc., "STUDY OF ENHANCED GAS SENSORS DUBBED GMOS FOR MONITORING AIR QUALITY IN LABS AND SMART HOMES", (2024- )
6. Michael Klinov, MSc, Study of Integrated Narrow-Band Optical Filters Based on Meta-Materials for CMOS Thermal Sensors (2025-)
7. Alona Blum, Design and Simulation of Moth-Eye Based Anti-Reflective Coatings for Mid-to Long-Wave Infrared Windows (2026- )
8. Netanel Shlomi, Enhancing Wearable Thermal Sensors with TinyML for Physiological Signal Detection (2025- )
- 9.
- ,

M.Sc. Project without thesis:

10. Eithan Sharoni, "Design and Modeling of MEMS hotplates" (2003-6).
11. Evgeny Poliyacov, "CMOS capacitive sensing for MEMS applications", (2003-6).
12. Eyal Tuaf, "Modeling MEMS cantilevers" (2006-2009).
13. Constatine Veinstein, Co-Supervisor, "Efficient Computing Architecture for Real-Time SPAD- Based Muzzle Flash Detection", (2017-2019)

**LIST OF PUBLICATIONS**  
**Yael Nemirovsky**

**Thesis**

“The Measurement of Differential Capacitance in Solutions of Low Conductivity”, D.Sc. Thesis, Technion, 1–19, (1971).

**Refereed papers in professional journals:**

1. U. Eisner, Ch. Yarnitzky, Y. Nemirovsky and M. Ariel, “Anodic Stripping, Voltammetry with Superimposed A.C. Potential”, *Israel J. Chem.*, Vol. 4, pp. 215–222, 1966.
2. E. Sutzkover, Y. Nemirovsky and M. Ariel, “The Iodine–iodide Reference Electrode in Propylene Carbonate”, *Electroanal. Chem.*, Vol. 37, pp. 107–113, 1972.
3. M. Ariel and Y. Nemirovsky, “The Measurements of Differential Capacitance in Solutions of Low Conductivity”, *Electrochem. Acta*, Vol. 17, pp. 1977–1986, 1972.
4. I. Oref and Y. Nemirovsky, “Gas–phase Electrochemistry: Electrocapillary Effects at the Mercury–gas Interface”, *J. of Applied Physics*, Vol. 46, pp. 2057–2064, 1975.
5. Y. Nemirovsky, I.A. Blech and J. Yahalom, “Abnormal Undercutting in Etched Cr–Au Films”, *J. Electrochem.*, Vol. 125, pp. 1177–1179, 1978.
6. E. Finkman and Y. Nemirovsky, “Infrared Optical Absorption of  $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ ”, *J. Appl. Physics*, Vol. 50, pp. 4536–4561, 1979.
7. Y. Nemirovsky and E. Finkman, “Anodic Oxide Films on  $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ ”, *J. Electrochem. Soc.*, Vol. 126, pp. 768–770, 1979.
8. Y. Nemirovsky and I. Kidron, “The Interface Between  $\text{Hg}_{1-x}\text{Cd}_x$  and its Native Oxide”, *Solid State Electronics*, Vol. 22, pp. 831–837, 1979.
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234. Avraham, M., Krayden, A., Ashkar, H., Aronin, D., Stolyarova, S., Blank, T., Shlenkevitch, D., & Nemirovsky, Y. (2024). A Novel Miniature and Selective CMOS Gas Sensor for Gas Mixture Analysis—Part 4: The Effect of Humidity. *Micromachines*, 15(2), 264. <https://doi.org/10.3390/mi15020264>
235. Moshe Avraham 1, Shlomi Bouscher 1, Jonathan Nemirovsky 1 and Yael Nemirovsky, ? Measurement of emissivity with a new grey body and novel IR thermal sensor dubbed TMOS”, *J. Infrared and Millim. Waves, remote sensing*, Vol. 44, No. 1 February, 2025, DOI : 10. 11972/j. issn. 1001-9014. 2025. 01. 00
236. Efraim-Lavi Bukshish, Sharon Bar-Lev, Tanya Blank and Yael Nemirovsky, “Design Considerations of an Analog Voltage Mode Readout Circuit for the CMOS-SOI-MEMS Gas Sensor Dubbed GMOS”, *Micromachines*, May 2025, doi: 10.3390/mi16060658
237. Hanin Ashkar, Sara Stolyarova, Tanya Blank and Yael Nemirovsky, “The Role of Pd-Pt Bimetallic Catalysts in Ethylene Detection by CMOS-MEMS Gas Sensor Dubbed GMOS”, *Micromachines* 2025, 16(6), 672; DOI: 10.3390/mi16060672
238. Krayden, A.; Avraham, M.; Ashkar, H.; Blank, T.; Stolyarova, S.; Nemirovsky, Y. TinyML-Based Real-Time Drift Compensation for Gas Sensors Using Spectral–Temporal Neural Networks. *Chemosensors* **2025**, *13*, 223. <https://doi.org/10.3390/chemosensors13070223>
239. Avraham, M.; Klinov, M.; Nemirovsky, Y. The Influence of MIM Metamaterial Absorbers on the Thermal and Electro-Optical Characteristics of Uncooled CMOS-SOI-MEMS Infrared Sensors. *Eng. Proc.* 2024, 82, 11. <https://doi.org/10.3390/ecsa-11-20442>
240. Avraham, M.; Nemirovsky, Y. Multiphysics Optical–Thermal and Mechanical Modeling of a CMOS-SOI-MEMS Infrared Sensor with Metasurface Absorber. *Sensors* 2025, 25, 6819. <https://doi.org/10.3390/s25226819>
241. Hanin Ashkar, Sara Stolyarova, Tanya Blank, Yael Nemirovsky, “XPS Study of Nanostructured Pt Catalytic Layer Surface of Gas Sensor Dubbed GMOS”, *Chemosensors* 2025, 13(12), 407; in Special Issue [Innovative Nanomaterials-Based Chemosensor Devices for Air Quality Monitoring](https://doi.org/10.3390/chemosensors13120407)) <https://doi.org/10.3390/chemosensors13120407>
242. Avraham, M.; Nemirovsky, Y. Multiphysics Optical–Thermal and Mechanical Modeling of a CMOS-SOI-MEMS Infrared Sensor with Metasurface Absorber. *Sensors* **2025**, 25, 6819. <https://doi.org/10.3390/s25226819>
243. Tal Gofman, Y. Nemirovsky, Enhancing Secure Key Rates in Intra-Data Center DV-QKD via CMOS Silicon Photomultiplier Arrays, to be published in *Sensors*, 2026

**Refereed Book Chapter:**

244. Y. Nemirovsky, "Passivation of Cd/Zn/Te/Se Compounds", "Properties of Narrow Gap Cadmium-Based Compounds", P. Capper editor, pp. 573–574, IEE (EMIS), England (1994).
245. Y. Nemirovsky, N. Mainzer and E. Weiss, "Passivation of HgCdTe", "Properties of Narrow Gap Cadmium-Based Compounds", P. Capper editor, pp. 284–290, IEE (EMIS), England (1994).
246. Y. Nemirovsky and R. Fastow, "Lifetime in p-type HgCdTe", *ibid*, pp. 233–238, (1994).
247. Y. Nemirovsky and N. Amir, "Surfaces and Interfaces", in "Narrow-Gap II–VI Compounds for Opto-Electronic and Electro-Magnetic Applications", Ed. P. Capper, Electronic Material Series, Series Editors A.F.W. Willoughby and R. Hull, Chapman & Hall, London, forthcoming, pp. 291–326, (1996).
248. Y. Eichen, Y. Gerchikov, E. Borzin, Y. Gannot, A. Shemesh, S. Meltzman, C. Hertzog-Ronen, S. Tal, S. Stolyarova, Y. Nemirovsky and N. Tessler, "Detection of Alkylating Agents Using Optical, Electrical and Mechanical Means", Sensor Array, Prof. Wuqiang Yang (Ed.), chapter 5, pages 67–80, , ISBN: 978-953-51-0613-5, InTech (2012). Available from:  
<http://www.intechopen.com/books/sensor-array/optical-electrical-and-mechanical-detection-of-electrophiles-using-sensor-arrays>
249. Angelo Ugenti, Sara Stolyarova, Adir Krayden, Annalisa Milella, Stefan Rilling, Yael Nemirovsky and Giulio Reina, **The STAR project: Giving Smell Sense To Agricultural Robotics**, IFToMM for Sustainable Development Goals Workshop (I4SDG 2025) (**Springer book**) - DOI: [10.1007/978-3-031-91151-4\\_71](https://doi.org/10.1007/978-3-031-91151-4_71), May 2025
250. Ugenti, S. Stolyarova, A. Krayden, A. Milella, S. Rilling, Y. Nemirovsky, Giulio Reina, "The STAR Project: Giving the Smell Sense to Agricultural Robotics", In book: Proceedings of I4SDG Workshop 2025- IFToMM for Sustainable Development Goals (pp. 649-658) DOI:10.1007/978-3-031-91151-4\_71

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**Co-Editor**

253. B. Mullin, Y. Nemirovsky and D. Gazit, "Proceedings of the Twelfth International Conference on Crystal Growth", July (1998).
254. B. Mullin, Y. Nemirovsky and D. Gazit, "Proceedings of the Tenth International Conference on Vapor Growth and Epitaxy", July (1998).

**CONFERENCES**

**Invited talks, including conferences: International**

1. Y. Nemirovsky , "Overview of Research Activities at the Microelectronics Research Center, Department of Electrical Engineering, Technion, Israel", Hudson - Boston, , Digital Equipment Corporation, USA September 1983.
2. Y. Nemirovsky, "The Infrared Era and the Microelectronics Revolution", Dept. of Electronics, University of Pretoria, South Africa, February 1984.
3. Y. Nemirovsky, "Interface Studies and Passivation of Mercury Cadmium Telluride Surfaces", the 1988 U.S. Workshop on the Physics and Chemistry of Mercury Cadmium Telluride, Y. Nemirovsky, Orlando USA, October 1988.
4. Y. Nemirovsky, "Passivation with II-VI Compounds", The 1989 U.S. Workshop on the Physics and Chemistry of Mercury Cadmium Telluride, San Diego, USA, October 1989,

5. Y. Nemirovsky, "Shockley-Read Recombination and Trapping in p-type HgCdTe", MRS Conference, November 1989 Boston, USA.
6. Y. Nemirovsky, "Microelectronics in Materials Science", Departmental Colloquium Lecture, Ecole Polytechnique Federale Lausanne, (EPFL), Switzerland, December 1992.
7. Y. Nemirovsky, "The Scientific and Technological Challenges of Nuclear Radiation Detectors", MIT Lincoln Lab. Distinguished Lecturer, EDS-IEEE, USA, 1996.
8. Y. Nemirovsky, "Overview of Research Activity in Microsystems", Colloquium, Dept. of Microtechnology, Swiss Federal Institute of Technology, July 1997.
9. Y. Nemirovsky, "Integrated Microsystems and MEMS at Technion", Plenary Lecture, 16th Umbrella Symposium, at the Aachen University of Technology, Germany, November, 1999.
10. Y. Nemirovsky, "New Results in CdZnTe Gamma-Ray Spectrometers: Growth, Devices and Modeling", The 2000 U.S. Workshop on the Physics and Chemistry of II-VI Materials, , Albuquerque, New Mexico, October 30– November 2, 2000.
11. Y. Nemirovsky, "Recent Progress in the Research of Micro-Opto-Electro-Mechanical Systems", The Intelisense, MA, USA, October 2000.
12. L. Li, F. Lu, W. Yao, R.W. Olson, P. Luke, Y. Nemirovsky, A. Burger, K. Shah and R.B. James "A New Method for Growing Detector-Grade Cadmium Zinc Telluride Crystals", SPIE, San Diego, August, 2000.
13. E. Socher, O. Bochobza-Degani and Y. Nemirovsky, "Modeling, Design and Fabrication of Uncooled IR CMOS Compatible Thermoelectronic Sensors", Proc. SPIE Conference Infrared Technology and Applications XXVIII, Seattle, USA, July 2002.
14. Y. Nemirovsky and O. Bochobza-Degani, "Modeling aspects of MOEMS: from system level aspects to physical aspects", Forum on Specifications and Design Languages, Frankfurt, Germany, September 2003.
15. Y. Nemirovsky, "Novel RF MEMS switches", Asia-Pacific Microwave Conference (16<sup>th</sup> APMC'04) New Delhi, December 2004.
16. Y. Nemirovsky, "Novel uncooled IR sensors", Dept. of Microelectronics and Information Technology, Royal Institut of Technology (KTH), Stockholm, Sweden, December 2005.
17. Y. Nemirovsky, "An overview of MEMS", Hewlett-Packard, March 2006.
18. Y. Nemirovsky, A. Shemesh and S. Stolyarova, "NEMS and MEMS Cantilevers as Ultrasensitive Biosensors", SPIE Photonics Europe 2008: MEMS, MOEMS, and Micromachining conference, 7-11 April 2008, Strasbourg, France.
19. N. E Chayen, E. Saridakis, R. El-Bahar S.Stolyarova and Yael Nemirovsky, "The application of nanopores for protein crystallization", NPS'08, Sofia Bulgaria 26 Feb - 2 March, 2008.
20. S. Stolyarova, A. Shemesh, Y. Eichen, Y. Nemirovsky, "MEMS Composite Porous Silicon/ Crystalline silicon cantilever –Array-Biosensors: Continuous Sensing of Explosive and Chemical Warfae Agents", NATO Advanced Research Workshop, St.Petersburg, 2009.
21. Kyoung-Rok Cho, Younggap You, Sang-Jin Lee, Soon-Ku Kang, Omid Kavehei, Yael Nemirovsky, Derek Abbott, , Kamran Eshraghian, "Back-illuminated 3D Memristor-MOS Imaging System", 2010 International Conference on Communications, Circuits and Systems (ICCCAS), July, China.
22. Y. Nemirovsky, "CMOS-SOI-MEMS Imagers", EuroSOI 2011, Granada, Spain (January 17- January 19, 2011).
23. Y. Nemirovsky, "CMOS-SOI-MEMS Imagers", Instituto de Microelectr?nica de Barcelona, Centro Nacional de Microelectr?nica (CSIC), Campus UAB Bellaterra, Spain (January 21- January 19, 2011).
24. Y. Nemirovsky, "CMOS-SOI-MEMS/NEMS technology for miniaturized, low cost sensors", International Workshop, sponsored by Proct and Gamble, Frankfurt, Germany (Sept.13-14, 2011).
25. E.Pikhay, Y.Nemirovsky, M.Gutman, G.Villani, Y.Roizin, Radiation Sensor Based on C-Flash Floating Gate Device, IVS-2011.

26. E Pikhay<sup>1,2</sup>, Y.Nemirovsky<sup>2</sup>, Y.Roizin<sup>1</sup>, V.Dayan, K.Lavrenkov, Y.Leibovich, D. Epstein, Radiation sensor based on a floating gate device, IEEE 27-th Convention of Electrical and Electronics Engineers in Israel, 2012.
27. E. Pikhay, Y.Nemirovsky, Y.Roizin, V.Dayan, K. Lavrenkov, Y. Leibovich, D. Epstein, Radiation sensor based on a floating gate device, IEEE 27-th Convention of Electrical and Electronics Engineers in Israel, 2012.
28. E. G. Villani, A. Gabrielli, A. Khan, E. Pikhay, Y. Roizin, Z.Zhang, Monolithic 180 nm CMOS Dosimeter for In Vivo medical applications, SORMA 2012: IEEE Symposium on Radiation Measurements and Applications, May 14-17, 2012, Oakland, USA.
29. H. Dagan, A. Teman, A. Fish, E. Pikhay, V. Dayan, Y. Roizin, A Low-Cost Low-Power Non-Volatile Memory for RFID Applications, IEEE ISCAS 2012, pp.1827-1830.
30. A. Svetlitz and Y. Nemirovsky, CMOS-SOI-NEMS transistor (TeraMOS) for Terahertz imaging", ECS SOI 2013, Toronto, May 2013.
31. E. Pikhay, Y. Nemirovsky, Y. Roizin, E.G. Villani, Radiation array sensor based on C Flash floating gate device, SENSO Conference, Gardanne, Aix-En-Provence, France, Oct. 22-24, 2014.
32. U. Gatti, C. Calligaro, E. Pikhay, Y. Roizin, Radiation-hardened techniques for CMOS flash ADC, Electronics, Circuits and Systems (ICECS), 2014 21st IEEE International Conference on, Dec. 7-10, 2014.
33. V. Savuskan, C. Jakobson, T. Merhav, A. Shoham, I. Brouk, Y. Nemirovsky, "Gun muzzle flash detection using a single photon avalanche diode array in 0.18 $\mu$ m CMOS technology", SPIE Defense and Security Conference, Baltimore April 2015.
34. Y. Nemirovsky, "First Steps in Microelectronics in Israel", IEEE ISRAEL HIGH-TECH: 1955-2015 - HISTORICAL PERSPECTIVES, 20 August 2015, Tel-Aviv University
35. Evgeny Pikhay, Yael Nemirovsky, Yakov Roizin, "Single Poly Floating Gate Radiation Sensors in CMOS Technology", MRS fall November 23-25, Boston, 2016
36. Amos Fenigstein, Tomer Leitner, Alex Katz, Avi Shoham, Yael Nemirovsky, "Industrialized NIR SPAD Technology in 180nm", the 1st International SPAD Sensor Workshop (ISSW), February 27-28, Switzerland, 2018
37. A. Eshkoli and Y. Nemirovsky, "Modeling the missing part of CMOS silicon photomultiplier: the ultimate photon counting and timing sensor," Proc. SPIE 10978, Advanced Photon Counting Techniques XIII, 109780H (13 May 2019); <https://doi.org/10.1117/12.2520490>

**Invited talks, including conferences: National**

1. Y. Nemirovsky, "The Age of Semiconductors", in the series of lectures on "Scientific Discoveries that Change the Face of the Century", Y. Nemirovsky, Churchill Auditorium Technion, March 1982.
2. Y. Nemirovsky, "The Invisible Rays", in the series of lectures on "Scientific Discoveries that Change the Face of the Century", Churchill Auditorium, Technion, February 1983.
3. Y. Nemirovsky, "Gated Structures in Hg<sub>1-x</sub>CdxTe with 0=0.22", IEEE Microelectronics Meeting on the Technology and Physics of Electron Devices, Tel-Aviv, April 1986.
4. Y. Nemirovsky, "The Epoch and Epos of Prof. Izhak Kidron and the Microelectronics Research Center", Technion – Meeting of the Board of Governors, June 1987.
5. Y. Nemirovsky, "Material Requirements for Advanced Infrared Detectors", IEEE Microelectronics Meeting on the Electronic Materials for Advanced Detectors, Technion , Haifa, December 1987.
6. Y. Nemirovsky, "From MOCVD Growth Models to Higher Performance IRFPAs", IR Detectors Conference, May 1991, Leshem.
7. Y. Nemirovsky, "Models for MOCVD Growth of Binary and Ternary Epilayers", The Israel Crystal Growth Society Conference, Rehovot, November 1991.
8. Y. Nemirovsky, "CdTe Solar Cells for Space", TechSat2 Conference, Technion, Dec. 1993.
9. Y. Nemirovsky, "MOCVD CdTe Passivation of HgCdTe", Semiconductor Devices Ltd., December 1993.

10. Y. Nemirovsky, "Micromachining and Coatings", The 25th Israel Conference on Mechanical Engineering, Technion, May 1994.
11. Y. Nemirovsky, "The Challenges and Breakthroughs of Micromachining and Microsystems", The 1st Conference of URSI—International Union for Radio Science, Tel Aviv, Dec. 11, 1996.
12. Y. Nemirovsky, "The MEMS Revolution and Technion Activity", The Symposium on "Small is Beautiful", the 1997 Technion Board of Governors, Dan Carmel, May 1997.
13. Y. Nemirovsky, "Overview of Scientific & Technological Challenges in Micromachined Micro-Systems", The Israel Society for Theoretical and Applied Mechanics (ISTAM), Tel-Aviv University, December 20, 1998.
14. Y. Nemirovsky, "Micromachined Microsystems and Applications", Colloquium, Rafael, April 1998.
15. Y. Nemirovsky, "Integrated Microsystems and MEMS: Scientific and Technological Challenges", Colloquium, Dept. of Material Science, Technion, November 1999.
16. Y. Nemirovsky, "Integrated Microsystems and MEMS Activity at Technion", Workshop on Micromachining, a Batsheva de Rothschild Frontier of Science and Technology Seminar, May, Zichon Yaacov, 1999.
17. Y. Nemirovsky, "Noise and Drift in Bio-FETs", IEEE Joint Seminar in Electro-Physiology and Electro-Optics, Tel-Aviv University, June 1999.
18. Y. Nemirovsky, "Updates in Micromachining and Silicon Microsystems", IEEE-EDS (Electron Device Society) Israel, Tel-Aviv, May 1999.
19. Y. Nemirovsky, "MEMS and Integrated Microsystems", 18th Annual Conference of the Israel Vacuum Society (IVS) joint with the Israel IEEE-EDS, Weizmann Institute of Science, November 1999.
20. Y. Nemirovsky, "MEMS Inertial Sensors", The 21st IEEE Convention of the Electrical and Electronic Engineers in Israel, Tel-Aviv, Israel, April 2000.
21. Y. Nemirovsky, "An Introduction to MEMS and an Overview of the Research at the Microelectronic Research Center at the Technion", Workshop on Micro-Electro-Mechanical-Systems (MEMS), North Carolina – Israel Partnership, Technion, May 2000.
22. Y. Nemirovsky, "The Scientific and Technological Challenges of MEMS and CMOS Integrated Micro Systems", Intel Workshop on Advanced Concepts, Jerusalem, May 30, 2000.
23. Y. Nemirovsky, "Physical Issues in Micro-Opto-Electro-Mechanical Systems", The Israel Physical Society, International Conference on Materials Science and Technologies, Jerusalem, Israel, November 2000.
24. Y. Nemirovsky, "A decade of MEMS activity (1991–2001) at Technion, Department of Electrical Engineering", MEMS Day in Israel, Mosad Neeman, Technion, November 2001.
25. S. Feldman and Y. Nemirovsky, "Integration and Assembly of Micromechanical Devices", Integration Microelectronics and Packaging Society, Tel Aviv, June 2002.
26. Y. Nemirovsky, "The Role of MEMS in Optical Networks", TELECOM ISRAEL 2002 Conference & Exhibition, Tel Aviv, Israel, November 2002.
27. Y. Nemirovsky and E. Socher, "MEMS and Applications", the meeting of the Israel Chemistry Society, Tel Aviv, 2002.
28. S. Feldman, Y. Nemirovsky; "MEMS Switches for Microwave Applications - A Review", Invited lecture, IEEE – Israel Section, S-AP/MTT Joint Chapter, 17th Convention, Oct. 2002.
29. Y. Nemirovsky, "The role of MEMS in Electro-Optics", The 13th International Meeting on Electro-Optics and Microelectronics in Israel, Tel- Aviv, 2003.
30. S. Feldman, Y. Nemirovsky, "MEMS devices assembly and packaging", Invited lecture , Israel IMPAS convention, March 2003
31. Y. Nemirovsky and O. Aharon, "MEMS for RF Applications", 23rd IVS Annual Conference and Technical Workshop, Exhibition Halls (Ganei ha Ta'aruchah), Tel Aviv, September 2004.
32. Y. Nemirovsky, "A new micromachined uncooled IR sensor", The Conference on the Scientific Challenge at the Homeseecurity and Antiterror War, Technion, December 2004.

33. Y. Nemirovsky, "The fascinating world of MEMS", " Technology frontier lectures", Technion, January 2005.
34. Y. Nemirovsky, "Low cost bolometric imagers", Avnet consortium, Technion, March 2005.
35. Y. Nemirovsky, "A taste of MEMS and NEMS", Holon Technology Institute, April 2006.
36. Y. Nemirovsky, "RF MEMS Switches", Workshop, Rafael, Israel, November 2006.
37. Y. Nemirovsky, "The world of MEMS and NEMS", Jerusalem College of Eng., May 2006.
38. M. Dolgin, D. Corcos, S. Katz, A. Svetliza, Y. Nemirovsky, "CMOS-SOI- MEMS thermal Antennas for uncooled thermal THz imaging", Technologies for Remote Sensing, Detection and Imaging", June 1, 2010, Ariel University.
39. Y. Nemirovsky, D. Corcos, D. Goren and D. Elad, "The TeraMOS sensor for monolithic Terahertz imager –A breakthrough in THz imaging", June 1, 2010, Ariel University.
40. Y. Nemirovsky, "Silicon Avalanche Photodiode Arrays", Mosad Neeman, Technion, The HYSF consortium workshop, November 7, 2010.
41. A. Svetlitz and Y. Nemirovsky, Uncooled THz sensors for passive imaging based on CMOS-SOI-NEMS 2nd Technion worksjop on THz imaging, 2013.
42. Ayal Eshkoli, Sharon Bar-Lev, Gabi Peled, and Yael Nemirovsky, "High Performance Integrated Inductors For Power Management Applications", IEEE 28-th Convention of Electrical and Electronics Engineers in Israel, December 3-5, 2014, Hilton Hotel, Eilat.
43. Maria Malits, Igor Brouk, Adi Birman, Asaf Lahav, Amos Fenigstein and Yael Nemirovsky, "Low Frequency Noise in Surface and Buried Channel Nanometric CMOS transistors", IEEE 28-th Convention of Electrical and Electronics Engineers in Israel, Dec. 3-5, 2014, Hilton Hotel, Eilat.
44. Alexander Svetlitz, Tanya Blank, Sara Stolyarova, Igor Brouk, Sharon Bar-Lev and Yael Nemirovsky, "Design and Simulations of CMOS-SOI-NEMS Thermal Antenna and Sensors for Passive Uncooled THz Imaging", IEEE 28-th Convention of Electrical and Electronics Engineers in Israel, December 3-5, 2014, Hilton Hotel, Eilat.
45. Alex Zviagintsev, Igor Brouk, Ilan Bloom and Yael Nemirovsky, "Voltage and Current Integrated Readout for Uncooled Passive IR sensors based on CMOS-SOI-NEMS Technology", IEEE 28-th Convention of Electrical and Electronics Engineers in Israel, December 3-5, 2014, Hilton Hotel, Eilat.
46. Y. Nemirovsky, "A Voyage From Academic Dream to Game Changing Product", Nvidia, July 7, 2024

#### **Contributed Talks: International**

1. Y. Nemirovsky and I. Bloom, "Admittance Measurements in p-type HgCdTe", The U.S. Workshop on the Physics and Chemistry of MCT, New Orleans, October 1987.
2. Y. Nemirovsky, D. Rosenfeld, R. Adar and A. Kornfeld, "Tunneling and Dark Currents in HgCdTe Photodiodes", The U.S. Workshop on the Physics and Chemistry of MCT, Orlando, October 1988.
3. R. Fastow and Y. Nemirovsky, "The Excess Carrier Lifetime of p-type HgCdTe", The U.S. Workshop on the Physics and Chemistry of MCT, San Diego, October 1989.
4. Y. Nemirovsky and D. Rosenfeld, "Passivation and 1/f Noise Phenomena in HgCdTe Photodiodes", The U.S. Workshop on the Physics and Chemistry of MCT, San Diego, October 1989.
5. Y. Nemirovsky, "Passivation with II-VI Compounds", The U.S. Workshop on the Physics and Chemistry of MCT, San Diego, October 1989.
6. Y. Nemirovsky, "Trapping Effects in HgCdTe", The U.S. Workshop on the Physics and Chemistry of MCT, San Francisco, October 1990.
7. Y. Nemirovsky and A. Unikovsky, "Tunneling and 1/f Noise in HgCdTe Photodiodes", The U.S. Workshop on the Physics and Chemistry of MCT, Dallas, October 1991.

8. Y. Nemirovsky, A. Ruzin and A. Bezinger, "UV Photon Assisted Control of Interface between CdTe Substrates and Metal Organic Chemical Vapor Deposition CdTe Epilayers", The U.S. Workshop on the Physics and Chemistry of MCT, Boston, October 1992.
9. Y. Nemirovsky and N. Amir, "MOCVD CdTe Passivation of HgCdTe", U.S. Workshop on the Physics and Chemistry of MCT, Seattle, USA, October 1993
10. Y. Nemirovsky, N. Amir, D. Goren and G. Asa, "The Interface of MOCVD-CdTe/HgCdTe", US Workshop on the Physics and Chemistry of MCT, Texas, USA, October 1994.
11. A. Bell, Y. Huang, M. Daglish, O. Paul, Y. Nemirovsky and N. Setter, "A Thin Film Pyroelectric Detector", 6<sup>th</sup> International Symposium on Integrated Ferroelectrics, March 1994.
12. Y. Nemirovsky, A. Ruzin, G. Asa and J. Gorelik, "Study of Charge Collection Efficiency in CdZnTe Radiation Detectors", US Workshop on the Physics and Chemistry of MCT, Baltimore USA, October 1995.
13. S. Stolyarova, A. Simanovskis and Y. Nemirovsky, "Degradation Mechanisms and Stability Forecasting for Adhesion Contacts of Metal Films with Binary Dielectric Substrates", Proceedings of the 19th Annual Meetings of the Adhesion Society, Murtle Beach, South California, February 1996. Thomas C. Ward, Editor, pp. 218–221.
14. Y. Nemirovsky, A. Ruzin G. Asa and Y. Gorelik, "Study of Contacts to CdZnTe Nuclear Radiation Detectors", The 1996 US Workshop on the Physics and Chemistry of II–VI Materials, Las Vegas, October 1996.
15. S. Stolyarova, N. Amir and Y. Nemirovsky, "RTP-MOCVD of Epitaxial II-VI Semiconductors", Proceedings of the 5th International Conference on Advanced Thermal Processing of Semiconductors RTP'97, Eds. R.B. Fair, M.L. Green, B. Lojek and R.P.S. Thakur, New Orleans, LA, USA, September 3–5, 1997, pp. 269–275.
16. Y. Nemirovsky, G. Asa, A. Ruzin, J. Gorelik and R. Sudharsanan, "Characterization of Dark Noise in CdZnTe Spectrometers", The 1997 US II–VI Workshop, Santa Barbara, October, 1997.
17. Y. Nemirovsky, G. Asa, C.G. Jakobson, A. Ruzin and J. Gorelik, "Dark Noise Currents and Energy Resolution of CdZnTe Spectrometers", The 1997 US II–VI Workshop, Santa Barbara, October, 1997.
18. S. Stolyarova, N. Amir and Y. Nemirovsky, "Rapid Thermal MOCVD of II-VI Compounds", the 8th International Conference on II-VI Compounds, Grenoble, France, August 1997.
19. M. Levy, N. Amir, E. Khanin, A. Muranevich, Y. Nemirovsky and R. Beserman, "Characterization of CdTe Substrates and MOCVD Cd<sub>1-x</sub>Zn<sub>x</sub> Te Epilayers", EMRS Spring Meeting'98, Strasbourg, France, June (1998) – Symposium C on "Growth, Characterization and Applications of II-VIs".
20. D. J. Seter, O. Degani, S. Kaldor, E. Scher, J. Rosenberg and Y. Nemirovsky, "Microelectromechanical Vibrating Inertial Sensors with Integrated Optical Sensing", Proceeding of GYRO-Technology Symposium, Stuttgart, Germany, 15–6 September 1998, pp. 10.0–10.13.
21. D.J. Seter, O. Degani, S. Kaldor, E. Scher, J. Rosenberg and Y. Nemirovsky, "Microelectromechanical Vibrating Inertial Sensors with Integrated Optical Sensing", Proceedings of Gyro-Technology Symposium, Stuttgart, Germany, September 1998.
22. O. Degani, D.J. Seter, E. Socher, S. Kaldor, E. Scher and Y. Nemirovsky, "Comperative Study of Novel Accelerometers Employing MIDOS", Proc. of IEEE—MEMS'99, Orlando, USA, January 1998, pp. 66–71.
23. M. Kovler, D. Stavosvetsky, Y. Nemirovsky and Y. Yahalom, "Silicon Electromachining Processes in Aqueous Solutions", Materials Research Symposium (MRS), Materials Science of Microelectromechanical System (MEMS) Devices, Boston, USA, November 1998.
24. E. Socher, O. Degani and Y. Nemirovsky, "Investigation of Integrated Micromachined Uncooled Thermoelectric Sensors for Imaging Applications", Tech. Dig. International Conf. Solid-State Sensors and Actuators Transducers '99, Sendai, Japan, 7–10 June, 1999, pp. 406–9.
25. Y. Nemirovsky, G. Asa, J. Gorelik and A. Peyser, "Recent Progress in n-Type CdZnTe Arrays for Gamma-Ray Spectroscopy", European MRS, Vienna, October 1999.

26. Y. Nemirovsky, G. Asa, J. Gorelik and A. Peyser, "Spectroscopic Evaluation of n-Type CdZnTe Gamma-Ray Spectrometers", The 1999 US Workshop on II-VI Materials, Las Vegas, September 1999.
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110.

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