

GABOR KOSA PhD

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PERSONAL

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Home address: Emek Harod 34/4 Modiin, Israel

Date and place of birth April 8 1972, Szatmar, Romania
Date arrival in Israel August 28 1982
Israeli Military Service Obligatory: April 1995 – April 1998, Active in reserve service.
Military Intelligence,
Marital status Married, 2 children

A. EDUCATION

2/1990 – 2/1995 Technion – Israel Institute of Technology, Haifa, Israel
Mechanical Engineering
Bachelor in Science
February 1995

3/1998 – 3/2000 Technion – Israel Institute of Technology, Haifa, Israel
Mechanical Engineering
M.Sc.
Title of master's thesis “Dynamics and Control of a Maneuvering Inverted Pendulum on an Uneven Surface”
Supervisors Prof. Oded Gottlieb and Prof Yoram Halevi

10/2001 – 10/2006 Technion – Israel Institute of Technology, Haifa, Israel
Mechanical Engineering
Ph.D
Title of doctoral dissertation “Micro Robots for Medical Applications”
Supervisors Prof. Moshe Shoham and Prof Menashe Zaaroor

Israel

12/2012-Now Senior Lecturer and head of the Robots and BioMedical Micro Systems (RBM²S) research laboratory. In addition head of the Robotics educational laboratory. School of Mechanical Engineering, Faculty of Engineering, Tel Aviv University, Israel

D. ACTIVE PARTICIPATION IN SCIENTIFIC MEETINGS

- 2003 Presenter in Israel Conference for Mechanical Engineering 2003, Haifa, Israel
- 2004 Presenter in ISRACAS 2004, Israely Symposium on Computer Aided Surgery Medical Robotics and Medical Imaging, Petach Tikva, Israel
- 2005 Presenter in ICRA 2005 Conference for Robotics and Automation, Barcelona, Spain
- 2006 Presenter in BioRob 2006 IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechanics, Pisa, Italy
- 2006 Invited talk in IRIS seminar, Zurich, Switzerland
- 2006 Invited talk in CIMIT Seminar, Boston, USA
- 2006 Invited talk in SPL Seminar Harvard Medical School, Boston, USA
- 2006 Invited talk in Department of Mechanical Engineering Columbia University, New York, USA
- 2007 Invited talk in Ben-Gurion University of the Negev (BGU), Beer Sheva Israel
- 2007 Invited talk in ISRAMEMS 2007, The National Conference of the Israeli MOEMS Society, Tel-Aviv University (TAU), Tel Aviv, Israel
- 2007 Invited talk in Mechanical Engineering Robotics Seminar EPFL, Lausanne, Switzerland
- 2007 Invited talk in Electrical Engineering Seminar ETH, Zurich, Switzerland
- 2008 Invited talk in Underwater Micro Swimmers Workshop, Conference of Robotic Science and Systems, Zurich, Switzerland
- 2008 Presenter and Reviewer in ICRA 2008 Conference for Robotics and Automation, Pasadena, USA
- 2008 Invited talk in Department of Mechanical Engineering Columbia University, New York, USA
- 2008 Invited Paper Presenter and Reviewer in BioRob 2008 IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechanics, Scottsdale, USA
- 2008 Invited talk in Department of Computer Science University of Verona, Verona, Italy
- 2008 Invited talk in ISRACAS Israeli Symposium on Computer-Aided Surgery, Medical Robotics, and Medical Imaging 2008, Tel-Aviv, Israel
- 2009 Invited talk in Faculty of Mechanical Engineering Seminar, Haifa, Israel
- 2009 Invited talk in Department of Mechanical Engineering Seminar, Tel-Aviv University (TAU), Tel Aviv, Israel
- 2009 Seminar of Israel Association for Computational Methods in Mechanics, Technion City, Haifa

- 2009 Invited talk in Department of Mechanical Engineering Seminar, Tel-Aviv University (TAU), Tel Aviv, Israel
- 2009 Program Committee Member in ICAR 2009 International Conference on Advanced Robotics, Munich, Germany.
- 2009 Presenter and Session Chair in IROS 2009, IEEE/RSJ International Conference on Intelligent Robots and Systems, St. Louis, USA
- 2009 Presenter in the Biorobotics Workshop in IROS 2009, IEEE/RSJ International Conference on Intelligent Robots and Systems, St. Louis, USA
- 2009 Invited talk in Seminar at Baskin School of Engineering, UCSC, Santa Cruz, USA
- 2010 Program Committee Member and Presenter in Hamlyn Symposium on Medical Robotics, The Royal Society, London, UK
- 2010 Invited talk in Seminar at Leeds University, Leeds, UK
- 2010 Invited talk in Seminar at Trinity College, Dublin, Ireland
- 2010 Invited Talk in Politecnico Milano, Milano, Italy
- 2011 Presenter in IFAC 2011, 18th World Congress of the International Federation of Automatic Control, (Interactive Paper), Milano, Italy
- 2011 Presenter in SMIT2011, 23rd Conference of the Society for Medical Innovation and Technology, Tel Aviv, Israel
- 2011 Invited Talk in Seminar in Ort Braude, Karmiel, Israel
- 2011 Invited Talk in Seminar in BioMedical Engineering, Tel Aviv University, Israel
- 2012 Invited Talk in Shiluvim Club, Engineering, Tel Aviv University, Israel
- 2012 Invited Talk in Thursday in Campus, Tel Aviv University, Israel
- 2012 Invited Talk in ISERD ICT-Call 9 Cognitive Systems and Robotics Info Day, Tel Aviv, Israel
- 2012 Invited Talk in CII Mission in Robotics, Tel Aviv University, Israel
- 2012 Invited Presentation in Workshop on Flexible Neurosurgical Robotics, EMBC 2012, San Diego, USA
- 2012 Invited Talk in Seminar UCSD, San Diego, USA
- 2012 Invited Presentation in Workshop FW2: Magnetically Actuated Multiscale Medical Robots, in IROS 2012 IEEE/RSJ International Conference on Intelligent Robots and Systems, Vila Moura, Portugal
- 2012 Presenter, Session Chair and Awards Committee in ICME 2012, 32nd Israeli Conference on Mechanical Engineering, Tel Aviv, Israel
- 2013 Invited talk, Symposium on the importance of the study of the Mediterranean Sea to Israel, Swimming Micro Robots Inspired by Flagellar Microorganisms, Israel
- 2013 Invited Lecture, PhD Course - Modular Surgical Robotics, NEAR Lab, Politecnico de Milano, Department of Electronics, Information and Bioengineering, Italy
- 2013 Presenter in ISRACAS2013 Israeli Symposium on Computer Aided Surgery Medical Robotics and Medical Imaging, Tel Aviv, Israel
- 2014 Invited Talk, AMT @ TAU, Animal Models for Technology @ Tel Aviv University, Tel Aviv, Israel
- 2014 Invited Talk, Biomimicry-Nature inspired Design, Oranim Seminar, Tiveon, Israel

- 2014 Invited Talk, Open Source Robotics Israel, Tel Aviv, Israel
- 2014 Invited Talk and Session Chair (also organizing committee member) Novelties in Robotics 2014, Yuval Neeman Workshop, Tel Aviv, Israel
- 2014 Invited Talk, Seminar in University of Strathclyde, Microrobots for Biomedical Applications, and other Bio-Inspired Systems, Glasgow, Scotland, UK.
- 2014 Invited Talk, Seminar in University of Southampton, Microrobots for Biomedical Applications, Southampton, UK.
- 2014 Invited Talk, Seminar in Imperial College, Robots for Biomedical Micro Systems, London, UK.
- 2014 Invited Talk, ITTN Conference, Tel Aviv, Israel
- 2015 Presenter, Reviewer and Associate Editor in ICRA 2015 Conference for Robotics and Automation, Seattle, USA
- 2015 Invited Talk, in New York University, New York, USA
- 2015 Invited Talk, BARD Workshop - Innovations in agricultural robotics for precision agriculture, Bio-inspired sensing for agricultural robots, Rehovot, Israel
- 2015 Presenter, AMAVC 2015 ,invited presentation session, Multi-modal mobile robot for SLAM, Petach Tikva, Israel
- 2015 Invited Talk, “Robotic endoscopic capsules for gastrointestinal screening, diagnosis and therapy: achievements and future challenges” in IROS 2015 IEEE/RSJ International Conference on Intelligent Robots and Systems - IROS 2015, Hamburg, Germany.
- 2015 Invited Talk, in meeting with GE representatives, Tel Aviv, Israel.
- 2015 Presenter in The Second Biomimicry Conference – Academy & Industry, Tel Aviv, Israel.
- 2015 Invited Talk, in meeting with Elbit representatives, Tel Aviv, Israel.
- 2015 Invited Talk, Seminar in Ben Gurion University, Department of Biomedical Engineering, Be'er Sheva, Israel.
- 2016 Visit of delegats from Japan embassy, Tel Aviv, Israel.
- 2016 Invited Talk, Seminar in Ben Gurion University, ABC Robotics Initiative , Be'er Sheva, Israel.

E. ACADEMIC AND PROFESSIONAL AWARDS

- 1993 Deans Award for Distinguished Achievements, Technion 1993.
- 1998-2000 Full Scholarship, M.Sc., Technion Graduate School, Technion 1998-2000
- 2001 Distinguished Employee, Rafael
- 2002-2006 Full Scholarship, Phd, Technion Graduate School Technion
- 2005 Traveling Grant, Russel Berrie Nanotechnology Institute Technion
- 2006 Stipend for foreign students in Switzerland, HA/SER/FCS Switzerland
- 2007 CIMIT FY2008 Award - Swimming capsule endoscope for diagnosis and treatment of small intestine (co-researcher), CIMIT, Boston, USA
- 2008 CIMIT FY2009 Award - Swimming capsule endoscope (consultant), CIMIT, Boston, USA
- 2009 CIMIT FY2010 Award - Swimming capsule endoscope for diagnosis and treatment of small intestine (co-researcher), CIMIT, Boston, USA
- 2010 CIMIT FY2010 Award - Swimming capsule endoscope for diagnosis and treatment of small intestine (co-researcher), CIMIT, Boston, USA
- 2014 Distinguished Visiting Fellowship Award – Novel power coupling methods for medical implants , 3101 GBP, Royal Academy of Engineering, Glasgow, Scotland.

F. MEMBERSHIP IN PROFESSIONAL SOCIETIES

2010-2012 Society of Robotic Surgery

RESEARCH GRANTS

- 2008 N. Hata, G. Kosa, P. Jakab,
“Swimming capsule endoscope for diagnosis and treatment of small intestine,”
CIMIT, USA, (\$25,000). Co-PI
- 2009 N. Hata, G. Kosa
“Swimming capsule endoscope” CIMIT, USA, (\$50,000). Co-PI
- 2010 N. Hata, G. Kosa, G. Szekely
“Swimming capsule endoscope” CIMIT, USA, (\$120,000). Co-PI
- 2010-2011 G. Szekely, G. Kosa,
“Neuronavigation for Brain Tumor Surgery” CO-ME, Switzerland (\$185,000). Co-PI
- 2011 G. Kosa,
“Control of percutaneous cardiac ablation by integration of miniature sensors in the
RF ablation catheter” The Elizabeth and Nicholas Slezak Super Center for Cardiac
Research and Medical Engineering, Israel (\$8,100). PI
- 2012-2014 G. Kosa, U. Ben Hanan, and A. Eyali
“Bio-Mimetic Jumping Robot”, Pearl of Wisdom association Mobility of
Small/Miniature Systems (\$160,000). PI
- 2012-2015 G. Kosa et al. (led by Prof. Ullmann)
“Inline Inspection (ILI) Robot”, The Wolfson Family Charitable Trust (\$88,000).
Co-PI
- 2013-2015 Y. Yovel and G. Kosa
“Radiation shape design by imitating bats”, Gensler Grant, Future Security
Research Institute, Ministry of Defense, (\$50,000). Co-PI
- 2013-2015 Y. Yovel and G. Kosa
“Design of the acoustic dispersion antennas by imitation of bat ears”, Mafat ,
Ministry of Defense, (\$55,100). Co-PI
- 2013-2014 G. Kosa
“Piezoelectric Micropump for Biomedical Applications”, Ministry of Economy,
Kamin Grant (\$93,400). PI
- 2013-2016 Yossi Yovel and G. Kosa,
“Active Sensing for Sound Source Segregation”, Broad Agency Announcement 11-
001 of Long-Range Office of Naval Research Scientific Projects, ONR International
Office, USA (\$210,000) Co-PI
- 2015-2018 Y. Yovel, G. Kosa, H. Spitzer and F. Patolsky
“BRAIN SLAM – a bio-inspired multi-sensory approach for robotic localization
and mapping”, Ministry of Science, (\$128250 from \$510,000). Co-PI
- 2015-2016 A. Bechar, G. Kosa and Y. Yovel
“The use of Sonar in Crop Estimation”, Ministry of Agriculture (\$28,000). Co-PI
- 2016-2019 T. Brosh, G. Kosa and R. Pilo
“Development of portable and laboratory tools for improving the manual dexterity

- and performance of dental students through practice”, Ministry of Science (\$124,170 from \$354,573). Co-PI
- 2016-2017 Y. Yovel and G. Kosa
 “Mapping an un-structured environment by acoustic classification”, Mafat, Ministry of Defense, (\$55,100). Co-PI
- 2016-2017 Morris.Mosseri and G. Kosa
 An ultrasound guided micro-robot for aiding in crossing clots in blood vessels, The Elizabeth and Nicholas Slezak Super Center for Cardiac Research and Medical Engineering, (\$19,136). Co-PI
- 2016-2019 D. Golodnitsky, G. Kosa, A. Zaban and Y. Feldman
 “Novel All-Solid-State Rechargeable 3D-Microbattery on 3D-Printed Perforated Polymer Substrate”, Ministry of Science (\$90,620 from \$367,215). Co-PI

G. M. SC. AND DOCTORAL STUDENTS SUPERVISED

Ph.D. STUDENTS in Progress

1.

M.Sc. STUDENTS in Progress

1. Avi Friedman, “Hydrodynamic modeling of a magnetic micro swimmer: theory, simulations and experiments” M.Sc. Thesis, Tel Aviv University, (co-advisor to Dr. Alex Liberzon), 2012-
2. Yonathan Horowitz, “Hydrualo-Electro-Static catheter ” M.Sc. Thesis, Tel Aviv University, 2012-
3. Eran Shchori, “Magnetic swimming capsule endoscope for the MRI” M.Sc. Thesis, Tel Aviv University, 2012-
4. Avishai Beck, “Displacement control of a biomimetic jumping robot” M.Sc. Thesis, Tel Aviv University, 2012-
5. Roni Amit, “Analysis of a piezoelectric micropump” M.Sc. Thesis, Tel Aviv University, 2013-
6. Roe Finkelstein, “Robot guidance using a bio mimetic bat sonar and visual feedback” M.Sc. Thesis, Tel Aviv University, (co-advisor with Dr. Avital Bachar, Agricultural Engineering Institute, Volcani Center and Dr. Yossi Yovel, Zoology TAU), 2013-
7. Omer Gvirzmann, “Biomimetic locust robot jumping from an uneven surface” M.Sc. Thesis, Tel Aviv University, (External Student, co-advisor with Prof. Amir Ayali Department of Zoology, TAU), 2013-
8. Shaul Badusa, “A Multi-Modal mobile robot for SLAM” M.Sc. Thesis, Tel Aviv University, 2014-
9. Itamar Elyakim, “Navigation of a sonar guided mobile robot” M.Sc. Thesis, Tel Aviv University, 2015-
10. Assaf Sharon, “Controlled cryogenic ablation” M.Sc. Thesis, Tel Aviv University, 2014-
11. Zahi Cohen, “Development of a robotic bio-inspired sonar sensing system” M.Sc. Thesis, Tel Aviv University, (co-advisor Dr. Yossi Yovel, Zoology TAU), 2014-
12. Valentin Zaitsev, “Development of a bio-inspired maneuvering jumping robot” M.Sc. Thesis, Tel Aviv University, (co-advisor Prof. Amir Ayali Yovel, Zoology TAU and Dr. Avi Weiss Braude), 2014-

13. Eldad Sumner, "Dynamics and control of a skid-steered mobile robot" M.Sc. Thesis, Tel Aviv University, (co-advisor Dr. Sharon), 2014-
14. Hila BenGur, "Dynamics and control of a skid-steered mobile robot" M.Sc. Thesis, Tel Aviv University, (co-advisor Dr. Moshe Brand), 2013-

PhD STUDENTS finished

1. Peter Baki, "Sensorized cardiac radiofrequency ablation system for lesion depth assessment," Ph.D. Thesis, ETH Zurich, (co-advisor to Dr. Orçun Göksel, Prof. G. Szekely), 2010-2015..

M.Sc. STUDENTS finished

1. Antonio Giorgetto, "A piezoelectric motor for microrobots in soft tissues: feasibility study" M.Sc. Thesis, Polytechnico de Milano, (co-advisor to Prof. GianCarlo Ferrignio with Dr. Danilo de Lorenzo), 2010-2011.
2. Shlomi Nakash, "Development of a miniature sonar for echo location" M.Sc. Project, Tel Aviv University, (External Student, project advisor to advisor Prof. Antony Wheiss Electrical Engineering, TAU), 2011-2012
3. Nir Engelberg, "Using CC430 chips for accurate localization" M.Sc. Project, Tel Aviv University, (External Student, project advisor to advisor Prof. George Wheiss Electrical Engineering, TAU), 2011-2012.
4. Ori Ehrenberg, "A piezoelectric pump for micro fluidics," M.Sc. Thesis, Tel Aviv University, (Direct Track Internal Student; Won Excellence Scholarship 2012), 2010-2013.
5. Shachaf Gortler, M.Sc. Thesis, "2D/3D Image construction based on robotically guided miniature ultrasound" M.Sc. Thesis, Tel Aviv University, (External Student, TAU), 2012-2014
6. Meytal Gershkovich, M.Sc. Thesis, "Design and optimization of an hydraulic-electrostatic micro-actuator" M.Sc. Thesis, Tel Aviv University, (External Student, co-advisor with Prof. Vadislav Krylov Mechanical Engineering, TAU), 2012-2015
7. Emmanuel Souffir, "OWLBOT" M.Sc. Project, Tel Aviv University, (External Student, advisor with project advisor Prof. Alon Wolf Mechanical Engineering, Technion), 2013-2015
8. Juda Fass, "Wireless optical power transmission to a biomedical microrobot" M.Sc. Thesis, Tel Aviv University, (co-advisor to Prof. Avraham Kribus), 2011-2014
9. Yanai Bar, "A maneuvering swimming capsule," M.Sc. Thesis, Tel Aviv University, (Direct Track, Internal Student; Won Excellence Scholarship 2012), 2010-2013.
10. Alexander Kucherov, "Directional filtering of a bat ear for orientation identification" M.Sc. Project, Tel Aviv University, (co-advisor Dr. Yossi Yovel, Zoology TAU), 2014-2016
11. Avi Abadi, "Control of a piezoelectric beam for a microrobot moving in brain tissue or the CSF" M.Sc. Thesis, Tel Aviv University, 2012-2016

OTHER ACTIVITIES

Reviewer for:

Scientific journals:

- Sensors and Actuators A: Physical
- Bioinspiration & Biomimetics
- Medical Image Analysis
- Transactions on Haptics
- New Journal of Physics
- Smart Materials and Structures
- Transactions on Biomedical Engineering

- Journal of Physics D: Applied Physics
- Transactions on Automation Science and Engineering
- Transaction on Robotics
- Nanoscale
- Biomedical Microdevices
- Journal of Fluids Engineering
- Journal of Physics: Condensed Matter
- Robotica
- PLOS One
- Transactions on Biomedical Circuits and Systems
- International Journal of Advanced Robotic Systems
- IEEE Robotics and Automation Letters
- IEEE/ASME Transactions on Mechatronics
- IEEE Robotics and Automation Letters
- Micromachines
- International Journal of Advanced Robotic Systems
- Sensors

Scientific
conferences:

- ICRA 2008 Conference for Robotics and Automation, Pasadena, USA
- ICRA 2009, Kobe, USA
- ICRA 2010, Anchorage, USA
- ICRA 2011, Shanghai, China
- ICRA 2012, St Paul, USA
- ICRA 2013, KarlsRuhe, Germany and Associate Editor
- ICRA 2014, Hong Kong, China and Associate Editor
- ICRA 2015, Seattle, USA
- ICRA 2016, Stokholm, Sweden
- BioRob 2008 IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics, Scottsdale, USA
- BioRob 2012, Rome, Italy
- BioRob 2014, São Paulo, Brazil
- IROS 2009, IEEE/RSJ International Conference on Intelligent Robots and Systems, St. Louis, USA
- IROS 2011, San Francisco, USA
- IROS 2014, Chicago, USA
- IROS 2015, Hamburg, Germany
- Eurohaptics 2010, Amsterdam, Holand
- Hamlyn Symposium on Medical Robotics 2010, London, UK
- ICAR 2009 International Conference on Advanced Robotics, Munich, Germany.
- ASME 2009 International Design Engineering Technical Conferences (IDETC) & Computers and Information in Engineering Conference (CIE)., San Diego, USA.
- WorldHaptics 2011, Istanbul, Turkey.
- OPTIM 2012 13th International Conference on Optimization of Electrical and Electronic Equipment, Brasov, Romania.
- ASME 2012 International Design Engineering Technical Conferences

- (IDETC) and Computers and Information in Engineering Conference (CIE), Chicago, USA.
- EMBC 2012 34th Annual International IEEE EMBS Conference, San Diego, California, USA.
- EMBC 2013, Osaka, Japan
- EMBC 2015, Milano, Italy

- Grant Evaluation:
- ISF Grant proposal review, 2013
 - BSF Individual grant proposal, 2014
 - GIF, 2014
 - PAZY Grant proposal review, 2015

Professional committees membership

- Program Committee Hamlyn Symposium 2010, London, UK.
- Program Committee EuroHaptics 2012, Tampere, Finland.
- Session organizer of Bioengineering Session and Robotics & Autonomous Systems Session in Israeli Conference of Mechanical Engineering 2012, Tel Aviv, Israel
- Associate Editor, IEEE Conference for Robotics and Automation – ICRA 2013, Karlsruhe, Germany
- Associate Editor, IEEE Conference for Robotics and Automation – ICRA 2014, Hong Kong, China
- ISF Committee - Mechanics & Structures - No. 15.1 – Member of Committee 2014
- Program Committee Member for The 2014 IEEE International Conference on Robotics and Biomimetics in 2014 – RoBio2014
- Associate Editor, IEEE Conference for Robotics and Automation – ICRA 2015, Seattle, USA
- Associate Editor, Robotics, Science and Systems - RSS 2015, Rome, Italy
- High Education Committee – Academic Advisory Board – Academic program evaluation 2014-2015

Academic and Educational Activities:

- Curriculum Initiatives
- Revision of the Specialization Track: Mechatronics/ Autonomous Systems with Ami Moshaiov and Neima Brauner, 2011-
 - Revision of the course: “Dynamics and Control of Systems” 0542-4622, 2011
 - Changing the Syllabus of the course: “Introduction to circuits systems and signals” 0512-1205 with Adi Arie and Neima Brauner, 2011
 - Creating the course: “Introduction to Control” 0542-3243, 2011
 - Revision of the course (considering the entering of “Introduction to Control” into the mandatory syllabus): “Dynamics and Control of Systems” 0542-4622, 2012
 - Creating of the course “Robotics and Control of Systems Laboratory” 0542-4624, 2010-
 - Replacement of Electronics experiments with control experiments with

	Electrical Engineering, Slava Krilov and Neima Brauner, 2010
	- Revision of the course "Introduction to Robotics" 2013
Laboratories	- Founding and leading of the "Robots and BioMedical MicroSystems (RBM ² S)", Research Laboratory 2010-
	- Founding and Leading of the "Educational Robotics Laboratory" 2010-
	- Renewing of "Educational Mechatronics laboratory" 2012-2013
Courses	- Dynamics and Control of Systems, 0542-4622, Semester II, 2011, 2012
	- Mechatronics, Principles of Utilization of Micro Controllers, 0542-4620, Semester II 2011
	- Introduction to Control, 0542-3243, Semester I, 2011, 2012
	- Vibration Theory, 0542-4220, 2015
Final Projects Advisor	- Ofer Saraf and Omer Gvirzman, Mechanical Engineering
	"Design of a propulsive system for a brain burrowing micro-robot" 2010-2011, presented in the international conference Smit 2010
	- Vera Guttman and Liat Cohen, Mechanical Engineering
	"Magnetic propulsive system for a miniature swimming Robot", 2010-2011
	- Awad Muchamad, BioMedical Engineering
	"Magnetic propulsive system for a miniature swimming Robot", 2010-2011
	- Boaz Swartz, Mechanical Engineering
	"Analysis and calibration of a miniature 3 DoF force sensor", 2010-2011
	- Tom Bar David and Nachum Chay, B.Sc. Mechanical Engineering
	"Design of a continuous transmission gear box", 2011-2012
	- Liron Shaked, Mechanical Engineering, "Design of a bio-mimetic sonar for mobile robots", 2011-2012
	- Yakov Kheshin and Felix Vladimirsky, Mechanical Engineering, "Design of a power autonomous swimming micro robot in the MRI" Finished, 2011-2012
	- Alexey Mitnik and Elena Donets, Mechanical Engineering, "Design of a bidirectional haptically guided robot interface for biomedical applications" 2011-2012
	- Sagie Reuven, Dor Yefet and Daniel Davies, Mechanical Engineering, "Miniature mechanism for biopsy", In Progress, 2012-2013
	- Einat Greenberg and Adi Shriki, Mechanical Engineering, "Asthma dispenser adapting to the patient condition", 2012-2013
	- Shaked Perek and Noa Kaufman, BioMedical Engineering, "Characterization of an ultrasonic sensor and its evaluation of its ability to monitor the ablation process", 2012-2013
	- Ofir Ziv and Tomer Aga, "3D localization in the body using RF transmitter receivers", Electrical Engineering, 2012-2013
	- Bar Golfarb and Avishay Chayun, Mechanical Engineering, "4X4 2 2X2 Mobile Robot", 2013-2014, Outstanding project
	- Mark Fonaryov and Olga Afriyan, Mechanical Engineering, "Capsule endoscope for gastroscopy", 2013-2014
	- Amitai Weiss and Guy Rebibo, Mechanical Engineering, "A 3D spherical motor", 2013-2014
	- Dan Siboni, Osher Arbib, Electrical Engineering, "An autonomous Quadrotor", 2014-2015

- Alejandro Levinton, “Mechanical design and dynamics of an autonomous quadrotor”, Mechanical Engineering, 2014-2015.
- Tal Levinshtain, “Dynamic and control of an autonomous quadrotor”, Mechanical Engineering, 2014-2015.
- Itai Perez and Omri Shilon, “2D/3D Image creation using a medical robot with ultrasound and force sensor”, Mechanical Engineering, 2014-2015,
- Outstanding project**
- Oren Shvartzman and Hadar Sackstein, “3D localization of an RF transducer in water”, Electrical Engineering, 2014-2015
- Yogev Sturm and Daniel Haguel “Bat inspired loudspeaker”, Mechanical Engineering, 2015-2016
- Danny Arshavsky and Elad Zlotnik, “Miniature swimming capsule”, Mechanical Engineering, 2015-2016
- Gal Nachshoni, “MRI driven micro-swimmer”, Mechanical Engineering, 2015-2016

Student Examiner

- Maor Ben Chamo, M.Sc. Project, Mechanical Engineering, 14/11/2010.
- Liat Heller, M.Sc. Thesis, Mechanical Engineering, 29/03/2011.
- Victor Troshin, M.Sc. Thesis, Mechanical Engineering, 9/10/2011.
- Shlomi Cohen M.Sc. Project, Mechanical Engineering, 12/12/2011.
- Nir Engelberg M.Sc. Project, Electrical Engineering TAU, 5/4/2012.
- Dov Kleczewski, M.Sc. Project, Mechanical Engineering, 2/5/2012.
- Shlomi Nakash M.Sc. Project, Electrical Engineering TAU, 1/10/2012
- Emiliya Passov, PhD Research Proposal Examination, Mechanical Engineering, Technion, 27/12/2012.
- Michael Zadok, M.Sc Thesis, Mechanical Engineering, TAU, 24/4/2013
- Gal Goren, M.Sc. Thesis, Mechanical Engineering, TAU, 6/5/2013
- Omer Gal, M.Sc. Thesis, Zoology, TAU, 29/9/2014
- Alon Ohev – Zion, PhD Dissertation reviewer, BGU, 22/6/2015
- Oded Yechiel, MSc Thesis, BGU, 21/10/2015
- Ziv Kassner, MSc Thesis, Zoology Department, TAU, 2/3/2016

Committees

- Library committee 12/2011-10/2013
- Unit Committee for Master Degree 10/2013-
- Accompanying Committee, Department of Zoology, TAU, Orit Doshevsky 2015-

GABOR KOSA – LIST of SCIENTIFIC PUBLICATIONS

Publication Measures

ISI Web of Science (According to the ISI total collection):

Total number of times cited: 188; H-Index 7

Google Scholar

Total number of times cited: 411; H-Index 10

B.1. ORIGINAL ARTICLES

*** My student**

+ Papers from my group

B.1. Articles Published:

1. E. Tadmor and G. Kosa,
“Electromechanical coupling correction for piezoelectric layered beams,”
Journal of Micro Electro Mechanical Systems, **12**(6), pp. 899-906, 2003.
ISI: 36 times cited, JCR: 2.57. Q1
2. M. Zaaroor, G. Kosa, A. Peri-Eran, I. Maharil, M. Shoham, and D. Goldsher,
“Morphological Study of the Spinal Canal Content for Subarachnoid
Endoscopy,” *Journal of Minimally Invasive Neurosurgery*, **49**(4), pp. 220-
226, 2006. Q3
ISI: 17 times cited, JCR: 0.835.
3. G. Kosa, M. Shoham and M. Zaaroor “Propulsion Method for Swimming
Micro Robots,” *IEEE Transactions on Robotics*, **23**(1), pp. 137-150, 2007.
ISI: 47 times cited, JCR: 2.432. Q1
4. R. Höver, G. Kosa, G. Székely and M. Harders, “Data-Driven Haptic
Rendering – from Viscous Fluids to Visco-Elastic Solids,” *Transactions on
Haptics*, **2**(1), pp. 15-27, 2009.
ISI: 9 times cited, JCR: 1.49. Q2
5. G. Kosa, M Shoham and S. Haber “The Action of Waving Cylindrical Tails
with Non-Circular Cross-Section in Propelling Micro-Robots,” *Physics of
Fluids*, **22**, pp. 083101, 2010.
ISI: 1 times cited, JCR: 1.722. Q1
6. Y. Shapiro, A. Wolf, and G. Kosa,
“Bi-Bellows: Pneumatic Bending Actuator,” *Sensors and Actuators A*, pp.
484-494, 2011. ISI: 17 times cited, JCR: 1.941. Q1
7. G. Kósa, P. Jakab, G. Székely, N. Hata, “MRI driven magnetic
microswimmers,” *Biomedical Microdevices*, **14**(1), pp. 165-178, 2012.
ISI: 20 times cited, JCR: 3.386. Q1
8. Y. Shapiro, A. Wolf, and G. Kósa, “Piezoelectric Deflection Sensor for a Bi-
Bellows Actuator,” *IEEE/ASME Transactions on Mechatronics*, 2012.
ISI: 8 times cited, JCR: 2.577. Q1
9. P. Baki*, G. Székely, and G. Kósa, “Design and Characterization of a Novel,
Robust, Tri-Axial Force Sensor,” *Sensors and Actuators A*, **192**, pp. 101-110,
2013.
ISI: 6, JCR: 1.8. Q1
10. Y. Shapiro, G. Kósa, and A. Wolf, “Shape Tracking of Highly Flexible
Beams via Embedded Deflection Sensors,” *IEEE/ASME Transactions on*

Mechatronics, **19**, pp. 1260-1267, 2014.

ISI: 5, JCR: 2.577. Q1

11. P. Baki*, S. J. Sanabria, G. Kósa, G. Székely, O. Goksel “Thermal Expansion Imaging for Monitoring Lesion Depth using M-Mode Ultrasound during Cardiac RF Ablation: In-vitro Study,” *International Journal of Computer Assisted Radiology and Surgery*, **10**(6), pp. 681-93, 2015. Q3
ISI: 1, JCR: 1.659.
12. A. Wolf, Y. Shapiro, G. Kósa, “Modeling a Hyper-Flexible Planar Bending Actuator as an Inextensible Euler-Bernoulli Beam For Use in Flexible Robots,” *Soft Robotics*, **2**(2), pp. 71-79, 2015.
ISI: 1, JCR: -. Q?
13. A. Sharon* and G. Kósa, “Advanced Controlled Cryogenic Ablation Using + Ultrasonic Sensing System,” *Sensors and Transducers*, **193**(10), pp. 57-62, 2015.
ISI: -, JCR:-.Q?
14. H. Ragonés, D. Schreiber, A. Inberg, Olga B., G. Kósa, A. Freeman, Y. Shacham-Diamand, “Disposable electrochemical sensor prepared using 3D printing for cell and tissue diagnostics,” *Sensors & Actuators: B. Chemical*, **216**, pp. 434-442, 2015.
ISI: -, JCR: 3.84. Q1
15. H. Ragonés, D. Schreiber, A. Inberg, Olga B., G. Kósa, Y. Shacham-Diamand “Processing Issues and the Characterization of Soft Electrochemical 3D Sensor,” *Electrochimica Acta* , **183**, pp. 125-129, 2015.
ISI: -, JCR: 4.086. Q1
16. V. Zaitsev*, O. Gvirsman*, U. Ben Hanan, A. Weiss, A. Ayali and G. Kósa, + “A locust-inspired miniature jumping robot,” *Biomimetics and Bioinspiration*, **10**(6), pp. 066012, 2015.
ISI: 1, JCR: 2.534. Q1
17. A. Danilovich, A. Krishnan, W. J. Lee, I. Borrisov, O. Eitan, G. Kósa, C. F. Moss and Y. Yovel, “Bats regulate bio-sonar based on availability of vision,” *Current Biology*, **25**(23), pp. R1124-R1125, 2015.
ISI: -, JCR: 9.571. Q1

B.2. Articles Accepted:

- 1.+ A. Abadi*, G. Kósa,
“Piezoelectric beam for intrabody propulsion controlled by embedded sensing,” *IEEE/ASME Transactions on Mechatronics*, 2016.
ISI: -, JCR: 3.42. Q1
- 2.+ R. Amit*, A. Abadi* and G. Kósa, “Steady streaming created by a piezoelectric cantilever for particle manipulation”, *Biomedical Microdevices*, 2016.
ISI: -, JCR: 2.877. Q1 - **Accepted based on the direct review of Chief-Editor Prof. Mauro Ferrari 3 hours after submission** .

B.3. Articles Submitted:

- 1.+ Sh. Gortler*, A. Rafalovich* and G. Kósa, “2D/3D image construction based on a robotically guided miniature ultrasound,” *UFFC/IEEE Transactions on*

Ultrasonics, Ferroelectrics and Frequency Control, 2015.

ISI: -, JCR: 1.8. Q2

- 2.+ R. Finkelshtain*, Y. Yovel, A. Bechar and G. Kósa, “Yield assessment and greenhouse features detection using ultrasonic sensors”, *Precision Agriculture*, 2015

ISI: -, JCR: 1.929. Q1

- 3.+ O. Gvirsman*, G. Kósa and A. Ayali, “Dynamics and stability of directional jumps in the desert locust”, *Biology Open*, 2016

ISI: -, JCR: 2.416. Q2

- 4.+ G. Kósa “Scaling of microrobots in fluidic media”, *Biomimetics and Bioinspiration*, 2016

ISI: -, JCR: 2.534. Q1

- 5.+ A. Beck*, V. Zaitsev*, O. Gvirsman*, U. Ben Hanan, A. Weiss, A. Ayali and G. Kósa, “A jumper glider robot inspired by the locust”, *IEEE Transactions on Robotics*, 2016

ISI: -, JCR: 2.432. Q1

B.4. Chapters in Books:

1. G. Kósa and G. Székely
“Chapter 16: Swimming Micro Robots for Medical Applications,”
in *Surgical Robotics: Systems, Applications, and Visions*, pp. 369-395
Editors: Jacob Rosen, Blake Hannaford and Richard Satava, Springer, 2011.
ISBN: 978-1-4419-1125-4

In preparation

1. G. Kósa
“Micro Robots for Biomedical Applications,”
in *Encyclopedia of Medical Robotics*,
Editors: Antoine Ferreira (Volume editor) Jaydev Desai (Editor), 2015.

D.1. INVITED PAPERS IN SCIENTIFIC MEETINGS.

1. G. Kósa, P. Jakab, N. Hata, F. Jólesz, Z. Neubach, M. Shoham, M. Zaaroor and G. Székely, “Flagellar Swimming for Medical Micro Robots: Theory, Experiments and Application,” Proceedings of The second IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics BioRob 2008, pp. 258-263, 2008.
ISI: 4 times cited.
2. Y. Shapiro, Alon Wolf and G. Kósa, “Swimming Microrobot and Flexible Actuator for Neurosurgery”, Invited talk at the Flexible Neurosurgical Robotics Workshop, in IEEE-EMBC 2012 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE EMBC 2012.

3. G. Kósa, “MRI driven magnetic swimmers for capsule endoscopy” Invited talk at the IROS 2012 on “Magnetically Actuated Multiscale Interventional Devices” workshop. IEEE/RSJ International Conference on Intelligent Robots and Systems - IROS 2012, Vilamoura, Algarve, Portugal, October 7-12, 2012
4. G. Kósa, “Advances in self-propulsion of internally driven capsule endoscopes” Invited talk at the workshop on “Robotic endoscopic capsules for gastrointestinal screening, diagnosis and therapy: achievements and future challenges” in IROS 2015 IEEE/RSJ International Conference on Intelligent Robots and Systems - IROS 2015, Hamburg, Germany, September 28-October 2, 2015
5. G. Kósa, “Bio-inspired sensing for agricultural robots” Invited talk at the BARD workshop on “Innovations in agricultural robotics” in ECPA 2015, Rechovot, Israel, July 12, 2015
ISI: 4 times cited.

D.2. PAPERS PRESENTED AT SCIENTIFIC MEETING PUBLISHED AS PROCEEDINGS

1. G. Kósa, O. Salomon, G. Megali, O. Tonet, V. Alecsandrovsky, M. Zaaroor, and M. Shoham, “Integration of Visual and Magnetic Data for Spinal Subdural Endoscopy,” Proceedings of ISRACAS 2004, Israeli Symposium on Computer Aided Surgery Medical Robotics and Medical Imaging, 2004.
2. G. Kósa, M. Shoham and M. Zaaroor, “Propulsion of a Swimming Micro Medical Robot,” Proceedings of The IEEE Conference for Robotics and Automation – ICRA 2005, Barcelona, Spain, April 18-22, 2005.
Acceptance Rate 45.4%
ISI: 2 times cited.
3. G. Kósa, M. Shoham and M. Zaaroor, “Analysis of a swimming micro robot,” Proceedings of the first IEEE / RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics - BioRob 2006, Pisa, Italy, February 20-22, 2006, 131-135.
4. G. Kósa, P. Jakab, F. Jolesz and N. Hata, “Swimming Capsule Endoscope using static and RF magnetic field of MRI for propulsion,” IEEE Conference for Robotics and Automation – ICRA 2008, Pasadena CA, USA, May 19-23, 2008, 2922-2927.
Acceptance Rate 45%.
ISI: 10 times cited.
5. G. Kósa and A. Wolf, “A new concept of a large-workspace small-size bending bellow actuator,” Proceedings of the 9th Biennial ASME Conference on Engineering Systems Design and Analysis ESDA08, Haifa, Israel, July 7-9, 2008.
ISI: 1 times cited.

6. G. Kósa, R. Hoever, D. Szczerba, G. Székely and M. Harders, “Fast Experimental Estimation of Drag Coefficients of Arbitrary Structures,” Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems - IROS 2009, St. Louis, Missouri, USA, October 11-15, 2009, 249-254.
Acceptance Rate 54.5%.
7. G. Kósa and G. Szekely, “Downscaling of Flagellar Swimming,” Workshop on Biologically-Inspired Robotics at IEEE/RSJ International Conference on Intelligent Robots and Systems - IROS 2009, St. Louis, Missouri, USA, October 11, 2009, 60-64.
Acceptance Rate 54.5%.
8. G. Kósa, D. De Lorenzo, E. De Momi, G. Szekely and G. Ferrigno, “Robotic burrowing in brain parenchyma tissue,” World Congress of the International Federation of Automatic Control (IFAC)- IFAC 2011, Milano, Italy, August 28, 2011.
Acceptance Rate 68%.
9. P. Baki*, G. Szekely and G. Kósa, “Miniature Tri-Axial Force Sensor for Feedback in Minimally Invasive Surgery,” IEEE International Conference on Biomedical Robotics and Biomechatronics, June 24-28, 2012 Roma, Italy, pp. 805-810.
ISI: 3 times cited.
Acceptance Rate 32%.
10. G. Kósa, A. Ayali, and U. Ben Hanan, "Design of a bio-mimetic jumping robot," in Electrical & Electronics Engineers in Israel (IEEEI), 2012 IEEE 27th Convention of, 2012, pp. 1-3.
11. Y. Shapiro*, A. Wolf and G. Kósa, “Compliant Bi-bellows Actuator with PVDF Force-Shape Sensing,” IEEE International Conference on Biomedical Robotics and Biomechatronics, June 24-28, 2012 Roma, Italy, pp. 1602-1606.
Acceptance Rate 32%.
12. O. Ehrenberg* and G. Kósa, “Piezoelectric Micro-Pump for Drug Delivery in a Medical Integrated Micro System,” IEEE International Conference on Biomedical Robotics and Biomechatronics June 24-28, 2012 Roma, Italy pp. 467-472.
Acceptance Rate 32%.
13. A. Friedman*, A. Liberzon and G. Kósa “Propulsive Force of a Magnetic, MRI Based Swimmer,” IEEE Conference for Robotics and Automation – ICRA 2015, Seattle WA, USA, May 26-30, pp. 4736 – 4741.
Acceptance Rate 41%.
14. R. Finkelstein*, Y. Yovel, G. Kósa and A. Bechar, “Detection of plant and greenhouse features using sonar sensors,” 10th European Conference on Precision Agriculture, ECPA 2015 July 12-16, 2015 Volcani Center, Israel, pp. 299-305.
15. H. Ben Gur*, G. Kósa and M. Brand, “Numerical Analysis of the Hemodynamics of an Abdominal Aortic Aneurysm Repaired Using the Endovascular Chimney Technique,” 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 25-29 2015, Milan, Italy, pp. 977-980.
Acceptance Rate 61%.

16. Y. Horovitz* and G. Kósa, “Active Catheter Driven by a Thermo-Hydraulic Actuation,” The Sixth International 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 25-29 2015, Milan, Italy, pp. 7772-7775.
Acceptance Rate 61%.
17. A. Sharon* and G. Kósa, “Controlled cryogenic ablation using ultrasonic sensing,” The Sixth International Conference on Sensor Device Technologies and Applications SENSORDEVICES 2015, August 23-28, 2015 Venice, Italy. **Won Best Paper Award**
18. V. Zaitsev*, O. Gvirsman*, U. Ben Hanan, A. Weiss, A. Ayali and G. Kósa, “Locust-Inspired Miniature Jumping Robot,” Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems - IROS 2015, Hamburg, Germany, September 28- October 2, 2015, pp. 553-558
Acceptance Rate 45%.

Accepted Proceedings

1.

D.3. ABSTRACTS

International Meetings

1. G. Kósa, P. Jakab and N. Hata, “B0-field-driven capsule endoscope with swimming tails for propulsion: design study,”
Joint Annual Meeting ISMRM-ESMRMB 2007 (ISMRM 2007), Berlin, Germany, May 19-25, 2007.
2. G. Kósa and Gabor Szekely, * “Swimming Micro Robot for Ventricular Capsule Endoscopy,”
The third Hamlyn Symposium for Medical Robotics, London, UK, May 25, 2010.
3. G. Kósa and Gabor Szekely, “Swimming Capsule Endoscopy,” 23rd Conference of the Society for Medical Innovation and Technology (SMIT), Tel Aviv, Israel, September 13-16, 2011.
4. O. Saraf, O. Gvirsman and G. Kósa, “Propulsion Method for Micro-Robots in Viscous Fluid Environment,” 23rd Conference of the Society for Medical Innovation and Technology (SMIT), Tel Aviv, Israel, September 13-16, 2011.
5. G. Kósa, N. Krakover and P. Jakab, “MRI Driven Swimmers for Capsule Endoscopy,”
Workshop on Biologically-Inspired Robotics at IEEE/RSJ International Conference on Intelligent Robots and Systems - IROS 2012, Vilamoura, Algarve, Portugal, October 7-13, 2012
6. Y. Fass, A. Kribus and G. Kósa, “Optical Power Transmission for a Swimming Micro Robot,”
Late news poster, PowerMEMS 2013, International Conference on Micro and Nanotechnology for Power Generation and Energy Conversion Applications, London, United Kingdom, December 3-6, 2013.
7. Roe Finkelstein, Shaul Badusa, Avital Bechar, Yossi Yovel and Gábor Kósa, “Bio-inspired sensing for agricultural robots,” BARD Workshop - Innovations in agricultural robotics for precision agriculture, Rehovot, Israel, July 12-14, 2015.

Israeli Meetings

1. G. Kósa and Gabor Szekely, "Swimming Micro Robot for Ventricular Capsule Endoscopy," ICR 2010 , Israeli Conference on Robotics, Herzeliya, Israel, November 11, 2010.
2. G. Kósa O. Stalnov and Y. Yovel, Keynote lecture, "Scaling of Flagellar Micro Swimmers," The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
3. Y. Barr and G. Kósa, "Propulsion Modeling of a 6 DOF Micro-Swimmer for Medical Purposes" The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
4. Y. Shapiro, A. Wolf and G. Kósa, "Bi-Bellows: A soft pneumatic actuator with embedded PVDF for force–shape sensing," The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
5. N. Krakover and G. Kósa, "Propulsion maneuvering micro robot for swimming in the MRI bore," The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
6. N. Engelberg, A. Veitman and G. Kósa, "Position estimation by a wireless sensor networks," The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
7. O. Ehrenberg and G. Kósa, "Analysis of a novel piezoelectric micro-pump for drug delivery in a medical micro system," The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
8. Y. Fass, A. Kribus and G. Kósa, "Optical power transmission for a swimming micro robot," The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
9. S. Nakash, G. Kósa, Y. Yovel, "Miniature bat imitating ultrasonic sensor," The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
10. A. Rafalovich and G. Kósa, "Ultrasound guided robot for minimally invasive surgery," The 32nd Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, October 17-18, 2012.
11. V. Zaytsev, U. Ben Hanan, A. Weiss, G. Kósa and A. Ayali, "Biomimetic jumping robot," ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.
12. S. Reuven D. Davies and G. Kosa, "Micro-biopsy device for a swimming micro robot," ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.
13. Y. Bar and G. Kósa, "Modeling of a 6 DOF Micro-Swimmer for Medical Purposes," ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.
14. Y. Shapiro, G. Kósa, and A. Wolf "Embedded PVDF shape tracking for control of a 2D hyper-flexible continuum manipulator", ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.
15. Y. Horovitz, G. Kosa and S. Krylov, "Micro-catheter with hydraulic and external actuation," ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.
16. N. Kaufman, S. Perek, G. Kosa, "Characterization of an ultrasonic sensor in monitoring ablation procedure," ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.
17. E. Shchory and G. Kosa, "A magnetic swimming micro-robot that navigates using the constant field of the MRI," ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.
18. Y. Fass, A. Kribus and G. Kósa, "Optical power transmission for a swimming micro robot," ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.

19. O. Gvirsman, U. Ben Hanan, G. Kósa and A. Ayali “Locust-inspired azimuth control for a miniature jumping robot,” ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013.
20. A. Beck and G. Kósa, “Bio-mimetic locust -dynamic simulations and first prototype,” ICR 2013 , Israeli Conference on Robotics, Tel Aviv, Israel, November 9, 2013
21. R. Finkelstein, G. Kósa, Y. Yovel and A. Bechar “Navigation in a green-house using sonar,” Israeli Society for Agricultural Engineering, Tel Aviv, Israel, May 29, 2014
22. R. Finkelstein, G. Kósa, Y. Yovel and A. Bechar “Autonomous Robot for Yield Assessment”, Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, March 2-3, 2015
23. V. Zaitsev, G. Kósa, U. Ben-Hanan, A. Ayali, O. Gvirsman, A. Weiss ,” Locust-Inspired Miniature Jumping Robot” Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, March 2-3, 2015
24. J. Fass, G. Kósa, A. Kribus “Optical Power Transmission for a Swimming Micro,” Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, March 2-3, 2015
25. A. Abadi, G. Kósa, “Minimal Invasive Medical Micro-Robot for Brain Parenchyma Burrowing,” Israeli Conference on Mechanical Engineering (ICME 2012), Tel Aviv, Israel, March 2-3, 2015
26. O. Gvirzman, G. Kósa, A. Ayali, “Dangerous spinning – How to jump strong and stable according to the desert locus,” Convention of the Israeli Society of Entomology , Tel Aviv, Israel, October 11, 2015
27. G. Kósa, R. Finkelstein, Sh. Badusa1 and Y. Yovel, “Bat inspired sonar for distance estimation in UAVs”, AMAVC 2015 ,invited presentation session, Petach Tikva, Israel, 2015
28. G. Kósa, The Second Biomimicry Conference – Academy & Industry, Bio Inspired Robots and Sensing Systems, Tel Aviv, November 19, 2015.
29. D. Golodnitsky, R. Blanga, H. Mazor, T. Ripenbein, K. Freedman, E. Peled, G. Kósa, Y. Kamir, and E. Rosen, IMEC2016, The 17th Israel Materials Engineering Conference, Nanomaterials for High-Energy-Density 3D-Microbatteries, Tel Aviv, February 2, 2016.
30. H. Ben Gur, G. Kósa, S. Golan, M. Brand, ISMBE 2016, Annual Conference of the Israeli Society for Medical and Biological Engineering, Computational Fluid Dynamics Analysis of Blood Flow in an Abdominal Aorta with an Infrarenal Aneurysm Post `Chimney` Endovascular Aneurysm Repair (ChEVAR), Haifa, February 24, 2016.
31. A. Beck, V. Zaytsev, U. Ben Hanan, G. Kosa, ICR 2016, The 5th Israeli Conference on Robotics 2016, A Jumper-Glider Bio-Robot inspired by the locust, Herzliya, April 13-14, 2016.
32. I. Perez, O. Shilon and G. Kosa, ICR 2016, The 5th Israeli Conference on Robotics 2016, LapaRobot -Ultrasound Guided Robot for MIRS, Herzliya, April 13-14, 2016.
33. Sh. Badusa and G. Kósa, ICR 2016, The 5th Israeli Conference on Robotics 2016, Brain inspired multi modal sensing for robot SLAM, Herzliya, April 13-14, 2016.
34. A. Abadi, R. Amit and G. Kosa, ICR 2016, The 5th Israeli Conference on Robotics 2016, Manipulation of Micro Particles with Piezoelectric Beams Using Visual Feedback, Herzliya, April 13-14, 2016.
35. A. Abadi and G. Kosa, ICR 2016, The 5th Israeli Conference on Robotics 2016, Minimally Invasive Surgical Micro Robotics for Brain Parenchyma Burrowing, Herzliya, April 13-14, 2016.
36. V. Zaitsev, A. Beck, O. Gvirsman, U. Ben-Hanan, A Weiss, A Ayali and G Kosa, ICR 2016, The 5th Israeli Conference on Robotics 2016, Miniature Jumping Robot Inspired by Locust, Herzliya, April 13-14, 2016.
37. R. Amit and G. Kosa, ICR 2016, The 5th Israeli Conference on Robotics 2016, Micro scale particle maneuvering, Herzliya, April 13-14, 2016.

PATENTS

Full Patent

1. US Patent 08496573 N. Hata, P. Jakab, G. Kosa, F. Jolesz
“Steerable capsule apparatus and method”
July, 2013.
2. US Patent 2015/0075250
A1 G. Kósa, G. Szekely and P. Baki
“Force sensor device”
March, 2015.

Pending/Not continued

1. US Patent 60/938,909,18 G. Kósa, P. Jakab, F. Jolesz and N. Hata_“Steerable Capsule
Apparatus and Method,”
May 2007.
2. US Patent 60/966,848 A. Wolf and G. Kósa, “Large-Workspace Small-Size Bending Bellow
Actuator,”
Sept. 2007.
3. US Patent 60/987,411,13 G. Kósa, “Piezoelectric Device,”
Nov. 2007.
4. PCT/EP08022373 G. Kósa, “Hollow piezoelectric device for distinguishing forces and
torques,”
Dec. 2008.
5. PCT/EP09006101 G. Kósa and G. Szekely, “Combined force and ultrasound sensor and
associated method,”
May 2009.
6. EP 12 002987.1 P. Baki, G. Kósa and G. Szekely, “Force Sensor,”
Jan, 2012.
7. US Patent Application
Nr. 61/662,370 O. Ehrenberg and G. Kósa, “Micro Pump,”
June, 2012.
8. US Patent Application
Nr. 62/105,763 G. Kósa, A. Bechar, Y. Yovel and R. Finkelshtain “Agricultural
Robot,”
January, 2015.
9. US Patent Application
Nr. 62/208,774A G. Kósa, and A. Sharon “Controlled cryogenic ablation using
ultrasonic sensing,”
August, 2015.
10. US Patent Application
Nr. 62/233357;
PCT/IB2016/050303 V. Zaitsev, O. Gvirsman, U. Ben Hanan, A. Weiss, A. Ayali and G.
Kósa “Agricultural robot,”
September, 2015.
11. US Patent Application
Nr. 62/234689 D. Golodnitsky, G. Kósa, Y. Kamir, R. Blanga and E. Rosen
“Multi directional 3D battery,”
September, 2015.
12. US Patent Application
Nr. 62/234689 G. Kósa, A. Abadi, R. Amit
“Particle manipulation system,”
February, 2016.

GRANTS and CONTRACTS

Source of Funds	Title of Projects	Duration (Months)	Date of Start	Total Value of Support (USD)	Names of Other Grant or Contract Holders	Role
Technion IIT, Israel	Full Scholarship, MSc, Technion Graduate School	24	3/1998	36000		M.Sc. Student
Rafael, Israel	Distinguished Employee	1	3/2001	800		R&D Engineer
Technion IIT, Israel	Full Scholarship, PhD ,Technion Graduate School	42	10/2001	88000		PhD Student
Russel Berrie Nanotechnology Institute Technion/ Israel	Traveling Grant	1	4/2005	960		PhD Student
FDHA/SER/FCS Switzerland	Stipend for foreign students in Switzerland	12	5/2007	18500		Post Doc
CIMIT/ USA	Swimming capsule endoscope	12	1/2008	50000	Prof. Ferenc Jolesz; Dr. Nobuhico Hata	Co-PI
CIMIT/ USA	Swimming capsule endoscope for diagnosis and treatment of small intestine	12	1/2009	25000	Prof. Ferenc Jolesz; Dr. Nobuhico Hata	Consultant
CIMIT/ USA	Swimming Capsule Endoscope	10	1/2010	50000	Dr. Nobuhico Hata	Co-PI
The Elizabeth and Nicholas Slezak Super Center for Cardiac Research and Medical Engineering	Control of percutaneous cardiac ablation by integration of miniature sensors in the RF ablation catheter	12	1/2011	8100		PI
Pearls of Wisdom Association	Bio-Mimetic Jumping Robot	24	10/2012	160000	Dr. Uri Ben Hanan, Prof. Amir Ayali	PI
The Wolfson Family Charitable Trust	Inline Inspection (ILI) Robot	36	12/2012	88000		PI
Gensler Grant, Future Security Research Institute	Radiation shape design by imitating bats	24	4/2013	50000	Dr. Yossi Yovel	Co-PI

Mafat , Ministry of Defense	Design of the acoustic dispersion antennas by imitation of bat ears	12	5/2013	27550	Dr. Yossi Yovel	Co-PI
Department Of Defense-DOD, Office of Naval Research Global	Active Sensing for Sound Source Segregation	36	3/2014	210000	Dr. Yossi Yovel	Co-PI
Ministry of Industry Commerce and Employment, Kamin Grant	Piezoelectric Micropump for Biomedical Applications	12	5/2013	27550		PI

Hobbies and Languages

Hobbies

1) Sport

2) Sci-Fi

Languages

	Comprehension	Reading	Writing
Hebrew	Excellent	Excellent	Excellent
English	Excellent	Very Good	Very Good
French	Very Good	Good	Good
Hungarian	Excellent	Very Good	Very Good
Romanian	Very Good	Good	Weak