ICME 2016

TECHNION
Israel Institute of Technology

The 34th Israeli Conference on Mechanical Engineering

Program lectures

Room no. 433

Control and Robotics 1-5

Control and Robotics 1 - Chair: Amir Degani		Time
Avi Weiss, Uri Ben Hanan	Two-Wheeled AGV Cooperating To Climb Stairs	Day 1: 11:30-13:30
Uri Ben-Hanan, Avi Weiss, Gideon Avigad	Design Of A Dynamic Mimicking System For Enhancing Wheelchair Traversability	
Gal Tibi, Ela Sachyani, Michael Layani, Shlomo Magdassi, Amir Degani	Actuation And Design Of A Soft, Thin And Printable Robot Based On The Bimetal Effect	
Elad Ayalon, Vladimir Portman, Shai Arogeti, Y. Shneor	Stiffness Index Of Machines And Robots: Comparative Stiffness Assessment Based On The Collinear-Stiffness Value Approach	
Ran Gabai, Izhak Bucher, Dotan Ilssar, Nadav Cohen	Acoustic Levitation and Propulsion Based on Traveling Waves Control	
Control and Robotics 2 - Chair: David Zarrouk		**Time**
Israel Schallheim, Miriam Zacksenhouse	Integrating Reflexes With Open Loop Central Pattern Generator Increases The Robustness Of Monoped Gait	Day 1: 14:30-17:10
Nir Dgani, David Zarrouk	Single Actuator Wave-Like Robot Locomotion	
Hadas Ziso, David Zarrouk, Menashe Zaaroor, Moshe Shoham	Robot For Minimally Invasive Neurosurgery	
Jonathan Spitz, Miriam Zacksenhouse	Evolving Robust, Biologically Inspired Controllers For Dynamic Locomotion	
Yaron Gilboa, Miriam Zacksenhouse	Optimization Of Control Laws Of Dynamic Walking Robots Through Region Of Attraction	
Ilanit Waxman, Yuri Feldman, David Zarrouk	Robotic Wave Locomotion In Viscous Fluids	
Control and Robotics 3 - Chair: Yizhar Or		**Time**
Oren Wiezel, Yizhar Or	Optimal control, optimization and asymptotic analysis of Purcell's microswimmer model	Day 2: 11:00-13:00
Evgenia Virozub, Yizhar Or	Dynamics and gait optimization of a swimming snake robot using "perfect fluid" model	
Yuval Harduf, Yizhar Or	Dynamics And Stability Analysis Of A Microswimmer With A Superparamagnetic Head Under A Planar Oscillating Magnetic Field	
Roee Keren, Yizhar Or	Analysis Of Energy Performance Of A Suspension System With A Timed Clutch Mechanism For Human Load Carriage	
Yizhar Or, Peter L. Varkonyi	Lyapunov Stability Of A Rigid Body With Two Frictional Contacts	
Paz Aranyi, Joshua Dayan, Yizhar Or	Optimization of a Hybrid Robot's Weight Lifting Ability	
Control and Robotics 4 - Chair: Ilan Rusnak		**Time**
Ilan Rusnak, Liat Peled-Eitan	Optimal 3-D Guidance Law Against High-G Barrel Roll Target Maneuver	Day 2: 14:00-16:00
Uriel Nusbaum, Yoram Halevi, Moro Weiss-Cohen	Optimization And Guidance Of Redundant Systems	
Ilan Rusnak	Optimal Adaptive Control Of The ARES I Uncertain Flexible Launch Vehicle	
Itzik Klein, Ilan Rusnak	Compensating Radome Effects In Non-Minimum Phase Missiles By A Loop Shaping Approach	
Asaf Tal, Itzik Klein, Reuven Katz	DVL/INS Fusion With Partial DVL Measurements	
Control and Robotics 5 - Chair: Shai Arogeti		**Time**
Yonattan Menaker, Sergei Basovich, Shai Arogeti	Slow Varying Disturbance Rejecsimple Adaptive Control (SAC)Tion Using	Day 2: 16:00-18:00
Yonathan Weiss, Shai Arogeti	Yaw Stability Control Of An Electric Vehicle Using LPV Model Predictive Control	
Sergei Basovich, Shai Arogeti	Feedforward Control Of LTI System With Uncertainty And Disturbance	
Elad Mizrachi, Sergei Basovich, Shai Arogeti	H Infinity Control With Frequency Domain Weighted Functions For Internal Turning Applications	
Tal Glick, Shai Arogeti	Tethered Drones for Precision Agriculture	

Room no.451

3D modeling and visualization

3D modeling and visualization - Chair: Anath Fischer		Time
Gil Elbaz, Tamar Avraham, Yizhak Ben-Shabat, Michael Lindenbaum, Anath Fischer	Registration Of Point Clouds Based On Global Super-Point Features Using Auto-Encoder Deep Neural Network	Day 1: 11:30-13:30
Ehud Vardimon, Yishak Ben-Shabat, Anath Fischer	An Interactive Simulation Of A Guided Articulated Needle In A Porous Structure	
Yizhak Ben-Shabat, Tamar Avraham, Gil Elbaz, Anath Fischer, Michael Lindenbaum	Graph Based Over-Segmentation Of 3D Point Cloud Representation Of Urban Scene	
Benjamin Groisser, Matan Sela, Howard Hillstrom, Rom Kimel, Alon Wolf	From Surface To Spine: Estimating Vertebral Positions From Back Topography With Body Models	
Yoram Retter	From The Real World To The Virtual Design Space	
Michael Reitman	Augmented Engineering: Next Generation Design And Engineering Processes Enabled By Augmented Reality	

Room no.451

Fluid Mechanics / CFD 1-4

Fluid Mechanics / CFD 1 - Chair: Yuri Feldman		Time
Helena Vitoshkin, Hsiu-Yu Yu, David M. Eckmann, Portonovo S. Ayyaswamy, Ravi Radhakrishnan	Multiscale Modeling Of Functionalized Nanocarriers In Targeted Drug Delivery: Nanoparticle Stochastic Motion And Hydrodynamic Interactions Close To A Cylindrical Wall	Day 1: 14:30-17:10
Yaron Ben Ami, Avi Uzi, Avi Levy	One-Dimensional Erosion Modeling For Conveying Pipelines	
Yuri Levinzon, Amos Ullmann, Neima Brauner.	Liquid Liquid Multiphase Model In Pipe Bend - A Study With ANSYS Fluent And CFX	
Efi Zemach, Semion Sukoriansky, Yuri Feldman	Effect Of Magnetic Field On Turbulence And Heat Transfer In Liquid Metal Flows	
Avihai Spizzichino, Sharone Goldring, Yuri Feldman	Immersed Boundary Method Based On The Distributed Lagrange Multiplier Approach: Two - Phase Flow Application	
Tali Bar-Kohany, Tal Eluk, Avi Levy, Efim Kortnyi	Controlling Robust Design Points For Gas-Solid Combustion In Co-Current Reactors	
Fluid Mechanics / CFD 2 - Chair: Steven Frankel		**Time**
Ron Schmuel Harnik, Herman D. Haustein	First-Order Model Of Free-Jet Hydrodynamic Evolution For Heat Transfer Prediction, Including Nozzle And Flow Rate Effects	Day 2: 11:00-13:00
Avi Uzi, Avi Levy	One-Dimensional Particle Attrition Model For Conveying Systems	
Ory Haimovich, Steven H. Frankel	High-Order Numerical Simulations Of Compressible Multicomponent And Multiphase Flow Using A Targeted ENO (TENO) Finite Volume Method	
Motti Raizner, Vlad Rinsky, René van Hout, Gershon Grossman	Investigation Of The Flow And Heat Transfer Dynamics Of A Jet With Unsteady Average Mass Flux Impinging On A Heated Surface	
Michael Laufer, Steven Frankel, David Greenblatt	CFD Predictions Of Load Control Using Steady Blowing On A Thick Airfoil	
Fluid Mechanics / CFD 3 - Chair: Amir Gat		**Time**
Ayelet Goldstein, Amos Ullmann, Neima Brauner	Exact Solutions Of Core-Annular Inclined Laminar Flows	Day 2: 14:00-16:00
Meital Geva, Omri Ram, Oren Sadot	The Non Stationary Convex Surfaces Reflections	
Omri Ram, Eliram Nof, Oren Sadot	Small Scale Study On The Parameters That Govern The Pressure Buildup Inside Stuctures Submitted To External Blast Loading	
Eliram Nof, Omri Ram, Eitan Kochavi, Oren Sadot	Wall Roughness Effects On Blast Attenuation In Tunnel Structures	
Arie Tulchinsky, Amir Gat	Transient Dynamics Of Elastic Hele-Shaw Cell Due To External Forces With Application To Impact Mitigation	
Fluid Mechanics / CFD 4- Chair: Vitaly Haslavsky		**Time**
Lihi Shahar Berman, Yan Ostrovski, Philipp Hofemeier, Josue Sznitman	Transport And Deposition Of Non-Spherical Aerosols In Pulmonary Acinar Flows	Day 2: 16:00-18:00
Shirly Steinlauf, Nardi Asaph, Alex Liberzon, Avrahami Idit	Experimental Study Of Approaches For Treatment Of Aortic Arch Aneurysm	
Yaacov Turgeman, Michal Katz, M. Mintz	A Single-Phase Closed Loop Thermosyphon Flow In Concentric Vertical Annuli With Distributed Heat Sources	
Lior Eshbal, Tom David, Vlad Rinsky, René van Hout, David Greenblatt	Experimental Investigation Of A Sphere Near-Wake Flow Field At Intermediate Reynolds Numbers	
René van Hout, Jerke Eisma, Edwin Overmars, Gerrit E. Elsinga, Jerry Westerweel	Experimental Investigation Of The Interaction Between A Stationary Rigid Sphere And A Turbulent Boundary Layer	

Room no.440

Control of Structures

Control of Structures - Chair: Yoram Halevi		Time
Laura Ierimonti, Annibale Luigi Materazzi, Laura Ierimonti	Adaptive Multiple Active Tuned Mass Dampers For Vibration Control Of High-Rise Building	Day 1: 11:30-13:30
Nicolò Pollini, Oren Lavan, Oded Amir	Optimization-Based Minimum-Cost Design Of Nonlinear Fluid Viscous Dampers And Their Supporting Braces For Seismic Retrofitting	
Nicola Cavalagli, Filippo Ubertini, Yoram Halevi, Luigi Materazzi	Recent Advances In Sloshing Absorbers For The Mitigation Of Seismic Structural Response	
Ilaria Venanzi, Laura Ierimonti, Annibale Luigi Materazzi	Seismic Protection Of Art Objects Using Active Control	
Yoram Halevi	Absolute Vibration Suppression (AVS) Control Of Flexible Structures	

System desgin

System design - Chair: Yoram Reich		Time
Ben-Zion Maytal	Scientific Approaches To Engineering Design Methodology; Didactical Notes	Day 1: 14:30-17:10
Arnon Gilan, Reuven Katz	System Design Of A Small Autonomous Underwater Vehicle (AUV)	
Kfir Cohen, Reuven Katz	A Laboratory for Teaching Practical Mechanical Design Skills	
Yoav Golan, Amir Shapiro	“Krembo” Wrapping Machine For Production Lines Of Delicate Marshmallow Treats	
Evgeny Korchnoy, Moshe Shoham	Learning Autonomous Car Structure Through Robotraffic Competition	
Nimrod Riccardo Sapir	When TECHNOLOGY Meets DESIGN	
Asa Bachnoff, Yaron Ben-Shmuel	SBMD-Simulation Based Mechanical Design	

Naval Architecture and Ocean Engineering 1-2

Naval Architecture and Ocean Engineering 1 - Chair: Nitai Drimer		Time
Nitai Drimer, Or Neuberg, Yahav Moshkovich	Limit State Rational Design Of Fast Boats	Day 2: 11:00-13:00
Allaka Himabindu, Morel Groper	Motion Assessment Of A Planing Craft In Seaway	
Omri Pedatzur	Management Of Weight Design Margins In Naval Ships Design	
Nicolas Bialystocki	Vessel's Inclining Experiment – Improved Testing Procedure Based On The Intact Stability Code	
Roy Gafter, Nitai Drimer	The Delta Type VLFS - Hydrodynamic Aspects	
Naval Architecture and Ocean Engineering 2 - Chair: Morel Groper		**Time**
Shlomo Eshed	Waterjet Modeling To Calculate High Speed Vessels Performance	Day 2: 14:00-16:00
Sharon Farber, Morel Groper	Rapid Analysis And Prototyping Propeller For An Autonomous Underwater Vehicle (AUV)	
Morel Groper, Yevgeni Gutnik	Maneuvering Performance And Comparison Between a Torpedo Shaped X-Form Rudder AUV and a Hovering Type AUV	
Arik Voronov, Boris Rabencov ,Yuri Trakht, Lev Dunaevich	Shock Analysis - Shock Response Spectrum Approach For Complicated Systems	
Alex Kogan, David Tuati, Oren Lotan, Shai Peles	The Effect Of An Underwater Explosion On A Double-Hulled Vessel	

Room no.440

Manufacturing Technologies

Manufacturing Technologies - Chair: Rafi Wertheim		Time
Dor Shabat, Y. Rosenthal, A. Berger, A. Stern	Mechanical Properties Of ABS Manufactured Using FDM	Day 2: 16:00-18:00
Brigit Mittelman, Elad Priel, Nissim Navi	Investigation Of Friction Conditions In Metal Forming Processes: A Computational Study Validated By Ring Compression Tests And Extrusion Experiments	
Omer Vikinski, Anath Fischer, Yoram Retter, Rafi Faibish	Design For Metal Additive Manufacturing Of A Bicycle Truss	
Rinat Katz, Nir Nagar, Nir Moscovitch, Boris Bronfin	MRI 240D A New Creep Resistant HPDC Magnesium Alloy With Superior Combination Of Strength And Ductility	
Isak Lopatukhin	Introduction To Dimensional Chain Calculation Theory In Assembly And Technology In Machine Production (Methods Of Accuracy Achievement In Assembly And Tooling)	
Yoram Mass, Oded Amir	Topology Optimization For Additive Manufacturing: Accounting For Overhang Limitations Using A Virtual Skeleton	
M. Putz, R. Wertheim, H.J. Koriath, Y. Bogachevb	Adaptive Spindle Damping System with Active Electromagnetic Bearing	
G. Meichsner, M. Hackert-Oschätzchen, M. Krönert, J. Edelmann, A. Schubert, M. Putz	Fast Determination of the Material Removal Characteristics in Pulsed Electrochemical Machining	

Room no.441

Micro Nano Oscillators

Micro Nano Oscillators - Chair: Yoav Linzon		Time
Lior Medina, Rivka Gilat, Slava Krylov	Latching In Electrostatically Actuated Bistable Prestressed Curved Micro Beam	Day 1: 11:30-13:30
Shai Maayani, Samuel Kaminski, Leopoldo L. Martin, Tal Carmon	Ripplon Laser	
Erez Bemjamin, Slava Krylov, Stella Lulinski	Bistable Force\Acceleration Sensor Based On Pull-In Voltage Monitoring	
Hui Wang, Eyal Buks	The fractional phase locking in optmechanical system	
Vijay Kumar, Yoav Linzon	Compressed Microbridge Resonator Dynamics	
Yoav Kessler, Alex Liberzon, Slava Krylov	Analyzing the Direction of Flow for Convective Heat Transfer Based MEMS Flow Sensor	

Dynamical Systems

Dynamical Systems - Chair: Oleg Gendelman		Time
Dotan Ilssar, Izhak Bucher, Henryk Flashner	Accurate Vertical Positioning Of Near-Field Acoustically Levitated Objects, Using Model Based, Gain-Scheduling Control	Day 1: 14:30-17:10
Maor Farid, Oleg Gendelman	Mitigation Of Nonlinear Liquid Sloshing In Partially Filled Tanks Using Passive Energy Absorbers	
Ofer Katsir, Uri Tamir	Integrated Method For Impact Force Estimation In Multibody	
Itzhak Shiroky, Oleg Gendelman	Discrete Breathers In An Array Of Self-Excited Oscillators: Exact Solutions And Stability	
Ben Farkash, Izhak Bucher, Harel Plat, Ran Gabai	Switching Between Buckling Modes Using Dynamic Excitation	
Nathan Perchikov and Oleg Gendelman	Symmetry-Induced Dynamic Localization In Lattice Structures	
Itay Grinberg, Oleg Gendelman	Multi-Site Discrete Breathers in Finite Vibro-Impact Chain	
Shachar Tresser, Izhak Bucher	Balancing High Speed Flexible Rotors Using Low Rotation Speed via Parametric Excitation	
Solomon Davis	Automatic Mode Selection And Excitation; Combining Modal Filtering With Autoresonance	

Room no.441

Solid Mechanics and Materials

Solid Mechanics - Chair: Samy Abu salih		Time
Gil Steinbrecher, Eli Altus, Boaz Cohen	Hygromechanical Coupling And Transverse Failure Of Laminated Composites	Day 2: 11:00-13:00
Rami Masri	Cavitation In Solids And Ballistic Limit Predictions For Perforation Of Metal Targets By Nose-Pointed Projectiles	
Shmuel Katz, Sefi Givli	The Post-Buckling Behavior Of A Beam Constrained By Springy Walls	
Stella Lulinsky, Tsvi Shmilovich, B. Robert Ilic, Slava Krylov	Parametric Amplification of Acoustically Actuated Micro Beams using Fringing Electrostatic Fields	
Samy Abu salih	Electromechanical Buckling And Postbuckling Of Micro Spherical Thin Film Bonded To An Elastic Foundation	
Eyal Avriel, Zev Lovinger, Roni Nemirovsky, Avraham Dorogoy, Yehzkel Ashuach, Dani Rittel	Investigating Strength Of Materials At Very High Strain Rates Using Magnetically Driven Expanding Cylinders	
Solid Mechanics and Materials 1 - Chair: Dan Mordehai		**Time**
Elad Priel, Shlomo Haroush	A Computational And Experimental Study Of The Small Punch Test Method Applied To Non-Standard SS-316L Metallic Foils	Day 2: 14:00-16:00
Roman Kositski, Alon Malka-Markovitz, Zvi Rosenberg	Deep Indentation Tests Highlight The Resistance To Penetration Of Thick Targets By Rigid Projectiles	
Alon Malka-Markovitz, Dan Mordehai	An Analytical Calculation of the Energy Barrier for Cross-slip in Face Centered Cubic Metals	
Roman Kositski, Oleg Kovalenko, Seok-Woo Lee, Julia R. Greer, Eugen Rabkin, Dan Mordehai	Strength Of Fe Single-Crystalline Nanoparticles Under Compression	
Eran Landau	Design By Analysis Of A Double-Barrier Pressure Flask For The Containment Of A Single Rod Loss Of Coolant Accident Experiment By RCC-Mrx Code Rules	
Alexander Shapiro, Anatoly Parahovnik, Yotam Ziser, Kfir Arbel	Characterization Of Moisture Absorption And Permeability Coefficient In Nylon 12 Treated With Different Coatings	
Solid Mechanics and Materials 2 - Chair: Alon Shonberger		**Time**
Galit Kipervaser-Levit, R. Moshe, Igor Sofer, L. Klebanov, Arie Elka, Zeev Sherf	Tactical Transporation Vibration Characterization And Comparison To MIL-STD-810G	Day 2: 16:00-18:00
Shlomo Djerassi	Planar Collision-Type Direct Determination By Incident Angle And Coulomb's Coefficient Of Friction	
Zeev Sherf, Yaakov Cohen, Arie Elka, P. Hopstone	Aspects Of Stationary And Non-Stationary Flight Vibration Analysis, With Application To The Formulation Of Vibration Simulation Programs	
Yacov Cohen Zeev Sherf, Igor Sofer, Arie Elka, P. Hopstone	Derivation Of Testing Conditions For Multi Axis , Multi Shaker Laboratory Vibration Simulation	
Zeev Sherf, Yaakov Cohen, P. Hopstone, Igor Sofer, Arie Elka	Helicopter Vibration Measurement Analysis And Generation Of Laboratory Vibration Simulation Programs Based On Energy Considerations	
Uria Heller, Arie Elka	Environmental Engineering Application In The Development Of An Airborne Store	

Room no.442

Microfluidics

Microfluidics - Chair: Gilad Yossifon		Time
Ofer Manor	Pattern Deposition on an Ultrasonic Actuator	Day 1: 11:30-13:30
Hagit Stauber, Dan Waisman, Netanel Korin, Josué Sznitman	Red Blood Cell Dynamics In Microfluidic Models Of Pulmonary Capillary Networks	
Rami Fishler	Aerosol Dispersion In The Pulmonary Acinus, Lessons From Microfluidic Experiments	
Neta Leibowitz, Jarrod Schiffbauer, Sinwook Park, Gilad Yossifon	The Transient Response Of A Non-Ideal Ion Selective Microchannel-Nanochannel Devices	
Nadya Ostromohov, Govind V. Kaigala, Moran Bercovici	Delivery Of Minimally Dispersed Liquid Interfaces For Sequential Surface Chemistry Using The Microfluidic Probe	
Ben Ukrainsky, Guy Z. Ramon	Direct In-Situ Observation Of Membrane Formation In A Microfluidic Platform	

Nano-Optics

Nano-Optics - Chair: Yuri Gorodetski.		Time
Cyriaque Genet, Gabriel Schnoering	Inducing Dynamical Bistability By Reversible Compression Of An Optical Piston	Day 1: 14:30-17:10
Luat Vuong	Multi-Phase Dynamics of Plasmonic Nanofluids	
Tal Carmon	Water-Walled Nano-Devices For Optical Interrogation, Excitation And Cooling Of Water Waves.	
David Lewis	Integrating Nano-Mechnaics with Chemistry	
Zeev Zalevsky, Asaf Shahmoon, Johannes Strauss, Hadar Hazan, Michael Schmidt	Usage Of Picosecond Laser And Controlled Deposition Of Gold Nanoparticles For Fabrication Of Photonic And Electronic Nanostructures	
Alina Karabchevsky	Glowing Microfluidics Without External Light Source	
Konstantin Bliokh	Extraordinary Momentum and Spin in Structured Light	

Room no.442

Bio- and Cell Mechanics

Bio- and Cell Mechanics - Chair: Shelly Tzlil		Time
Ayelet Lesman, Jacob Notbohm, Guruswami Ravichandran, David A.Tirrell	Biomechanical Interaction Between Cells And Their Non-Linear Elastic Environment	Day 2: 11:00-13:00
David Kamoun, Yael Yaniv	Bioenergetic Feedback Between Mitochondrial 3D Deformations And Heart Cell Contractile Machinery	
Ohad Cohen, Samuel Safran	Dynamical Response And Synchronous Beating Of Cardiac Cells	
Hen Viner, Shelly Tzlil	Dynamics And Synchronization Of Mechanically-Coupled Beating Cardiomyocytes	
Anat Marom, Yulia Berkovitch, Samer Toume, Amit Gefen and Daphne Weihs	Effect Of Honey And External Deformation On Kinematics Of Cell Migration During Gap Closure	

Biomechanics 1

Biomechanics 1 - Chair: Moshe Brand		Time
Elyasaf Leybovitch, Saar Golan, Moshe Brand	Mechanical Interaction Between Overlapping Stents And Artery	Day 2: 14:00-16:00
Hila Ben Gur,Gábor Kósa, Moshe Brand, Saar Golan	Hemodynamics In The Abdominal Aorta Post Chimney Endovascular Aneurysm Repair	
Yann Delorme, Saar Golan, Moshe Brand, Steven Frankel	Large Eddy Simulation Of Flow Inside An Idealized Arteriovenous Fistula	
Dana Solav, Henri Meric, Frédéric Lofaso, Alon Wolf	Chest Wall Kinematics Using Triangular Cosserat Point Elements In Healthy And Neuromuscular Subjects	
Olga Polovinets, Alon Wolf, Ronit Wollstein	Force Transmission Through The Wrist During Performance Of Pushups On A Hyperextended And A Neutral Wrist	
Hadar Shaulian	The Effect Of The Ground Reaction Force Manipulation On The Cop With Emphasis On The Shear Forces	
Biomechanics 2 - Chair: Idit Avrahami		**Time**
Mahmoud M. Safadi, M.B. Rubin	A New Analysis Of Stresses In Arteries Based On An Eulerian Formulation Of Growth In Tissues	Day 2: 16:00-18:00
Barak Even Chen, Alex Liberzon, Idit Avrahami	The Impact Of The Flow Pattern In The Aortic Sinuses On The Coronary Perfusion During The Diastole Phase	
Tamir Grunberg	Designing Dual Component Electrodes To Fabricate Engineered Heart Valves	
Ilana Nisky, Amit Milstein	Surgeon-Centered Control Considerations Of Robot-Assisted Surgical Grippers	
Avi Marcovici, Randy Lee, George Stetten	The Hand-Held Force Magnifier & One-Dimensional Haptic Rendering Using An Audio Speaker	
Ziv Marom, Ilana Shtein, Benny Bar-On	Micro-To-Macro Mechanics Of Leaf Stomata	

Room no.443

Energy and Fuels 1-4

Energy and Fuels 1 - Chair: Ayelet Goldstein		Time
Maya Livshits, Abraham Kribus	Optimization Of Convective Heat Transfer In Solar Receivers	Day 1: 11:30-13:30
Ayelet Goldstein, Amos Ullmann, Neima Brauner	The Benefits Of Adding A Lubricating Phase For Transportation Of A Viscous Fluid In Inclined Cafs	
Alexander Zibitsker, Jonathan Fuchs, Eran Sher	Cryogenic Engine For MAV-F	
Anna Shvartzfarb, Joshua Dayan	Gasification Of Biomass Organic Waste And Low-Grade Fossil Fuels – Overview And Research Description	
Alexander Golberg, Rui Jiang, Yoav Linzon, Edward Vitkin, Zohar Yakhini, Alexandra Chudnovsky	Thermochemical Hydrolysis Of Macroalgae Ulva For Biorefinery	
Moty Kuperberg	The New Energy Era	
Energy and Fuels 2 - Chair: Gidi Goldwine		**Time**
Oren Elishav, Gennady E. Shter, Daniel R. Lewin, Gideon S. Grader	Nitrogen-Based Fuels: A Novel Approach For A Sustainable Energy Grid Of The Future	Day 1: 14:30-17:10
Sharon Gat, Gideon Goldwine	The Effect Of Methanol Fuel Blends On PA 11/12	
Zeev Wiesman, Paula Berman, Charles Linder	Proton Spin-Spin Relaxation Biosensor For Monitoring Biodiesel Shelf-Life Stability And Compositional Changes	
Shani Elitzur, Valery Rosenband, Alon Gany	Concept And Application Of Hydrogen And Energy Production On-Demand	
Rotem Avin, Gideon Goldwine, Tehila Feiglin, Eran Sher, Zeev Wiesman	Elastomers In Gasoline-Methanol Fuel Blends	
Yuval Dagan , David Katoshevskvi, Barry J. Greenberg	Spray Dynamics And Combustion In Unsteady Vortex Flows	
Gideon Goldwine, Eran Sher	Formaldehyde Emissions From Internal Combustion Engines Fueled With Alternative Fuels	
Energy and Fuels 3 - Chair: Victor Chernov		**Time**
Yigal Evron, Khaled Gommed, Gershon Grossman	Absorption Heat Transformer For Temperature Boosting Of Low-Grade/Waste Heat	Day 2: 11:00-13:00
Yinon Yavor, Sam Goroshin, Jeff Bergthorson, David Frost	Metal-Water Reactions For Energetic Systems	
Ilai Sher, Eran Sher	Improving The Diesel Cycle Efficiency By Using An Internal Steam Reforming Arrangement	
Offir Dahan, Idan Dayee, Alex Schechter, Idit Avrahami	Integration of Energy Case Including Hydrogen Generator	
Shahar Wollmark, Yinon Yavor	Burning Rate Investigation Of Solid Aluminum-Water Propellants Under Various Pressure Condition	
Daniel Komornik, Alon Gany	Thermochemical Computations Of A Paraffin-Aluminum Hybrid Rocket	

Energy and Fuels 4 - Chair: Matthew Suss		Time
Anatoly Golovnev	Theoretical Models Of Electric Conductivity In Suspension Electrodes	Day 2: 14:00-16:00
Nir Druker, Gidi Goldwine, Eran Sher	Theretical and Experimental Study of Breakdown Voltage Across General Shape Electrodes	
Nir Gavish, Keith Promislow	Generalized Mean-Field Theories For Highly Concentrated Electrolytes And Their Prediction Of Differential Capacitance	
Eric Guyes, Matthew Suss	Effect of an array of channels on the pressure drop and desalination performance of a capacitive deionization cell	
Ilya Loiferman, Boris Shvartsev, Matthew Suss	Zinc-Bromine RFB with novel carbon fluidized bed electrode	
Youri Gendel, Oana David, Korcan Percin, Hannah Roth, Alexandra Rommerskirchen, Pompilia Buzatu, Matthias Wessling	Development of Tubular Electro-Fenton Reactor and Vanadium Redox Flow Batteries	

Room no. 450

Thermodynamics

Thermodynamics Chair: Tali Bar		Time
Erez Boukobza, Helmut Ritsch, David J Tannor	Thermodynamics Of Light-Matter Interactions: Attenuation, Amplification, The Carnot Limit And Beyond	Day 1: 11:30-13:30
Tali Bar-Kohany	Depressurization Of Liquids To Low Or Negative Pressure; What Is It Good For?	
Zeev Porat	Formation Of Gallium Micro- And Nano- Particles By Ultrasonic Cavitation	
Yahav Moshkovich, Yeshayahou Levy, Eran Sher	Energy Distribution Model In Homogenous Flash Boiling Process	
Alon Lidor, Daniel Weihs, Eran Sher	Fluctuation Analysis Of The Explosion Limits Of A Hydrogen-Oxygen Mixture	
Yaniv Gelbestein	Methods Of Thermoelectric Efficiency Enhancement For Power Generation Applications	

Cryogenics

Cryogenics . Chair: Ben Zion Maytal		Time
Sergey Riabzev, Avishai Filis, Dorit Livni, Itai Regev, Victor Segal, Dan Gover	RICOR Cryogenic Refrigerators In Space	Day 1: 14:30-17:10
Alexander Veprik, Baruch Shlomovich	Multi-Slope Warm-Up Calorimetry Of Integrated Dewar-Detector Assemblies	
Dmitry Radchenko, Gershon Grossman	Passive Mechanical Device For Phase Shifting In A Pulse Tube Cryocooler	
Anatoly Parahovnik, Ralbag Gilad, Zvi Lapp, Alexander Shapiro	Enhanced Joule Thomson Mini Cryocooler	
Gershon Peleg	Cryopreservation History And Future	
Motti Raizner, Gershon Grossman	A Numerical Investigation Of Heat And Mass Transfer Phenomena In A Tapered Channel With Reciprocating Flow	
Ben-Zion Maytal	Cryocoolers Of Isentropic Expanders Via The Unified Model Of Cryocoolers	

Heat Transfer 1

Heat Transfer 1 Chair: Gennady Ziskind		Time
Yoram Kozak, Gennady Ziskind	New Enthalpy Method Coupled With Solid Bulk Motion	Day 2: 11:00-13:00
Simon Julius, Ronald Gold, Boris Leizeronok, Beni Cukurel	Thermophone - Heat Driven Sound Production	
Liel Ishay, Alex Rashkovan, Ulrich Bieder, Gennady Ziskind	Nozzle Jet Erosion Of A Stably Stratified Layer	
Michal Sasi, Ory Gabay, Yosef Aharon	Characterization behavior of home boiler heater	
Jeong-Heon Shin, Tomer Rozenfeld, Ashwin Vutha, Yingying Wang, Gennady Ziskind, Yoav Peles	Heat Transfer in Nitrogen Gas Micro Jet Impingement	
Eli Barami, Semion Sukoriansky, A. Kapusta, E. Zemach, B. Mikhailovich	Analitical And Numerical Study Of Heat Transfer Enhancement In Liquid Metal By Rotating Magnetic Field	

Heat Transfer 2

Heat Transfer 2 Chair: Herman Haustein		Time
Avi Rozenfeld, Tomer Rozenfeld, Yoram Kozak, Gennady Ziskind	A Novel Latent Heat Storage Unit	Day 2: 14:00-16:00
Elad Weinberg, Herman D Haustein	Submerged Jet Array Cooling With Distributed Inter-Jet Returns: Preliminary Results Of Flow Field And Heat Transfer	
Vadim Dubovsky, Ruth Letan	Heat Transfer Enhancement On Plates Extended To Two-Sided Rectangulars	
Adi Amir, René van-Hout	Nocturnal Radiative Cooling For Small-Scale Industrial Facilities	
Yedidia Haim, Yeshayahu Weiss, Ruth Letan	A Simplified Analytical Model For The Thermal Performance Predication Of A Radial Multi-Foil Insulation	

Nuclear Thermal Hydraulics

Nuclear Thermal Hydraulics Chair: Ezra Elias		Time
Erez Gilad, Marat Margulis	THERMO-T: A Dynamic System Code For Accident Analysis In Research Reactors	Day 2: 16:00-18:00
Ezra Elias, Yuri Nekhamkin, Dov Hasan	Thermochemical Heat Generation during Loss of Flow Accident (LOFA)	
Alon Davidi	CFD Analysis Of Molten Core Concrete Heat Transfer Interactions During Nuclear Accidents	
Niv Moran, Michal Katz, Eran Sher	Characterization Of Thermosiphon Flow In Enclosure With Non-Uniform Boundary Conditions	
Michal Katz, Hadas Shenha, Dmitri Gitelman, Roni Sarusi, Lionel Ferry	Thermohydraulic Analysis Of A Displacement Device Failure In The LORELEI Test Device	

Room no. 430

Tactical Vehicles and Military Systems

Tactical Vehicles and Military Systems Chair: Col. Tal Aharon		Time
Colonel Tal Aharon, Ltc. Ofer Ben Avraham, Capt. Marat Feldman, Capt. Sagie Medina	Introduction Of Hybrid/ Electrical Propulsion Technology In Tactical Vehicles	Day 1: 11:30-13:30
Maj. Shiran Papo, Capt. Andy Thawho	Military Vehicles Performance Analysis Using Automotive Tests At The IDF	
Ltc Leon Altarac, Daniel Meltz, Hugo Guterman	Safety Verification Of Unmanned Ground Vehicles Algorithms With Simulation	
Maj. Felix Shuv, Maj. Avi Katz	Design Verification And Validation Of New Artillery System	
Maj. Dani Shapira, Lt. Asaf Cohen	Methodology And Advances: On The Failures In Powerpacks Of Heavy Armored Vehicles	

Armored Vehicles Technologies

Armored Vehicles Technologies - Chair: Col. Nissim Levi		Time
Nissim Levi	Armored Vehicles Technologies - Trends And Solutions - The Broader View	Day 1: 14:30-17:10
Maor Gabbai	Developing Belly Armor For Wheeled APC/IFV – "EYTAN"	
Eran Schwarz	Fighting With Closed Hatches - A Complex Concept	
Uriel Hochmann	Unmanned Turrets – Armored Vehicles Evolution	
Or Cesana	Power Pack For Wheeled Vehicle	

Tribology 1 - 3

Tribology 1 - Chair: Isaac Garbar		Time
Isaac Garbar	Abrasive Wear Resistance	Day 2: 11:00-13:00
Yuri Kligerman, Peter Breitman	Energetic Criterion For Evaluation Of Local Wear Distribution Through The Frictional Contact Area	
Roman Yasinov, Gal Peled, Nir Karasikov	Tribology In The Service Of Precise Motion- Optimization Of Friction Drive For Ultrasonic Motors	
Eido Zelikov, Yuri Kligerman	Model Of Contact And Wear Between High-Speed Moving Parts Of Piezo-Drives	
Haytam Kasem, Yossi Cohen	Effect Of Counter-Face Roughness On The Friction Of Biomimetic Wall-Shaped Hierarchical Microstructure For Gecko-Like Attachments	
Tribology 2 - Chair: Izhak Etsion		**Time**
Roman Goltsberg, Izhak Etsion	Contact Area And Maximum Equivalent Stress In Elastic Spherical Contact With Thin Hard Coating	Day 2: 14:00-16:00
Zhou Chen, Roman Goltsberg, Izhak Etsion	Plasticity Evolution In A Coated Sphere Compressed By A Rigid Flat	
Zhou Chen, Roman Goltsberg, Izhak Etsion	A Universal Model For An Elastic-Plastic Coated Sphere Contact With Moderate To Large Coating Thickness	
Shai Ronen, Roman Goltsberg, Izhak Etsion	Elastic-Plastic Model For A Coated Sphere Compressed By A Rigid Flat Under Full Stick Contact Conditions	
Meir Bar-Hen, Izhak Etsion	Experimental Study Of The Effect Of Coating Thickness And Substrate Roughness On Turning Tool's Wear	
Tribology 3 - Chair: Yuri Kligerman		**Time**
Avishai Dov, Morel Groper, Yuri Kligerman	Experimental Study Of A Water Lubricated Journal Bearing	Day 2: 16:00-18:00
Peter Breitman, Yuri Kligerman	Development of Clean Biomimetic Dry Adhesive	
Alexey Moshkovich, Vladislav Perfilyev, Louisa Meshi, Igor Lapsker, Lev Rapoport	Structure And Plastic Deformation Of Copper And A/B Brass Rubbed In The BL Conditions	
Oleg Korchevnik, Yuri Kligerman, Roman Goltsberg, Izhak Etsion	The Effect Of Bi-Layered Spherical Contact On Electrical Contact Resistance	
Alexey Moshkovich, Vladyslav Perfilyev, Igor Lapsker, Yishay Feldman, Lev Rapoport	Study Of The Transition From EHL To BL Regions Under Friction Of Ag And Ni. I. Analysis Of Acoustic Emission	

Room no. 443

Propulsion and Vehicles

Propulsion and Vehicles - Chair: Leonid Tartakovsky		Time
Arnon Poran, Leonid Tartakovsky	Internal Combustion Engine With Gaseous Fuel Direct Injection Of Reformed Alcohols	Day 2: 16:00-18:00
Amnon Eyal, Leonid Tartakovsky	Using Thermo-Chemical Recuperation as an HCCI Control Tool	
Netanel Dabush, Tal Kipshitz, Danny Brudner, Daniel Ganon	Dry Sump Lubrication System For The, 2016 Formula SAE Car	
Netanel Dabush, Tal Kipshitz, Danny Brudner, Daniel Ganon	Powertrain For The 2016, SAE Student Car	
Tamir Plachinsky	Motorsport As The Engine Of Growth For The Automotive Industry In Israel	
Ran Amiel, Leonid Tartakovsky	Knock Occurrence In SI Turbocharged Engine Of An Unmanned Aerial Vehicle	
Rafael Fleischman , Ran Amiel, Leonid Tartakovsky	Effects Of Diesel Particle Filter On Nanoparticle Emissions And Energy Efficiency Of In-Use Buses	

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