אורט בראודה
המכללה האקדמית להנדסה
ORT Braude College

The 15ᵗʰ Interdisciplinary Research Conference

Kfar Blum
October 23-24, 2019

Program

Organizing Committee:
Professor Lavi Karp (Chairman)
Dr. Anat Dahan
Dr. Lilach Iasur Kurach
Kobi Ganor
Henya Ashkenazi

Foreword

The traditional ORT Braude Interdisciplinary Research Conference provides a venue for the College's researchers to present their activities and achievements, and simultaneously it is a social event for our faculty.

The program consists of five plenary talks, one poster session, and lectures held in three parallel sessions. Please note, in this 15$^{\text{th}}$ Interdisciplinary Conference, there are lectures of 15-minute duration, and lectures of 30 minutes in the parallel sessions. All details are indicated in the program.

Another new factor in this year's conference is that it will end on Thursday at 15:15. We kindly request that all the participants not leave before the final presentations end out of respect to all the speakers.

We invite all participants to an Escape Room, Wednesday evening, and after that to have a beer at the bar.

We wish everyone an interesting, fruitful, and enjoyable conference.

Wednesday, October 23

Time	Session	Details	Location
9:00-10:00	Registration		Opera entrance hall
10:00-11:30	Morning session	Chairman: Professor Lavi Karp	Opera B
10:00-10:15	Opening	Professor Arie Maharshak, President of ORT Braude College	Opera B
10:15-11:00	Plenary talk	Professor Joseph Kost, Ben-Gurion University, *Targeted delivery of drugs and gene therapy*	Opera B
11:00-11:30	Plenary talk	Professor Sarit Sivan, ORT Braude College, *Liposomes as effective biolubricants for friction, wear and pain reduction in human synovial joints*	Opera B
11:30-12:15		Coffee break and posters session	Opera entrance hall
12:15-13:15	Noon session	Chairman: Dr. Lilach Iasur Kruh	Opera B
12:15-13:00	Plenary talk	Dr. Uri Roll, Ben-Gurion University, *Broad scale spatio-temporal organization of animals and plants in the service of conservation*	Opera B
13:00-13:15	Informative talk	Professor Sammar Marei, Head of the Research Authority, ORT Braude College, *Research funding: Current status, challenges and future approach*	Opera B
13:15-14:30		Lunch	
14:30-15:45		Check-in	Hotel reception desk
15:45-17:00		Parallel sessions	Opera A,B,C
17:00-17:10		Break	
17:10-18:25		Grant award ceremony and an open discussion with Prof. Arie Maharshak, Prof. Sarit Sivan and Ahiav Golan.	Opera B
19:30-20:30		Dinner	
20:30-22:00		Social activities: Escape Room	Opera
22:00-23:00		Beer on the bar	Opera

Thursday, October 24

7:00-9:00		Breakfast	
9:00-10:00		Parallel sessions	Opera A,B,C
10:00-10:15		Break, check-out	Hotel reception desk
10:15-11:15		Parallel sessions	Opera A,B,C
10:15-11:45		Coffee break	Opera entrance hall
11:45-13:00	Noon session	Chairman: Dr. Dvora Toledano-Kitai	Opera B
11:45-12:30	Plenary talk	Professor Alfred M. Bruckstein, Technion, *The mathematics of multi-a(ge)nt interactions, or how to coordinate a swarm of simple robots*	Opera B
12:30-13:00	Plenary talk	Dr. Emil Saucan, ORT Braude College, *Persistent homology of networks and hypernetworks via discrete Morse theory*	Opera B
13:00-14:00		Lunch	
14:00-15:00		Parallel sessions	Opera A,B,C
15:00-15:10		Closing	Opera B
15:15		Departure	

Poster session

- Eitan Kribu, Nirit Gavish, Avi Weiss and Uri Ben-Hanan, *The effect of using a familiar interface to operate an unfamiliar system*

- Anat Dahan, *Functional connectivity curing interpersonal synchrony: An fNIRS Study*

- Nirit Gavish, Eran Shlomi and Eran Reuveni, *The effect of using a virtual reality platform on travel sharing willingness*

- Ayelet Goldstein and Ofer Eyal, *Modes of movements of a rigid body with friction*

- Crystal Hoyt, *Representations of the Lie superalgebra $W(\infty)$*

- Lilach Iasur Kruh, *Endophytes, originating from chickpea seeds, as a solution against diseases caused by phytopathogenic fungi*

- Lavi Karp, *On the global existence of the Nordström-Euler system*

- Haggai Katriel, *The dynamics of two-stage contagion*

- Navit Roth, Adham Salih and Orit Braun Benyamin, *The sounds of motion*

- Julia Sheidin, *Time series visualizations of emotions*

- Naomi Unkelos-Shpigel, *Climb your way to the model: Teaching UML to software engineering students*

Parallel sessions

Parallel sessions, Wednesday, October 23, 15:45-17:00

Mechanical Engineering and Physics   Opera A
Chairman: Atef Shalabney

15:45-16:00	Jorge Berger Physics	*Mechanics of hearing*
16:00-16:15	Michael Regev Mechanical Engineering	*Microstructure, thermal stability during creep and mechanical properties study of friction stir processed AA2024-T3 aluminum alloy*
16:15-16:45	Ofer Eyal and Ayelet Goldstein Physics and Mechanical Engineering	*Potential problems on surfaces with or without a boundary, subjected to discrete distributed sources*
16:45-17:00	Adham Salih Mechanical engineering	*Many-objective topology and weight evolution of artificial neural networks*

Environment and Medical Aspects   Opera B
Chairman: Iris S. Weitz

15:45-16:00	Sivan Klas and Barak Snir Biotechnology Engineering	*Ammonia recovery from livestock housing emissions*
16:00-16:15	Isam Sabbah Biotechnology Engineering	*The fate of microplastics in the mainstream of wastewater treatment*
16:15-16:30	Zakharia Frenkel and Zeev Volkovich Software Engineering	*Fake edges: an improvement of the protein connectivity network*
16:30-16:45	Dafna Knani Biotechnology Engineering	*In silico study of the co-assembly of the hydrogelator DBSCOOH and peptide amphiphiles*

Industrial Engineering and Management Opera C
Chairman: Tamar Gadrich

15:45-16:00	Shuki Dror Industrial Engineering and Management	*House of quality: Quality by design vs. quality of conformance*
16:00-16:15	Hussein Naseraldin and Eden Davarashvily Industrial Engineering and Management	*Implications of 3D printing on the spare parts supply chain*
16:15-16:30	Boris Shnits Industrial Engineering and Management	*Adaptive scheduling in an FMS environment*
16:30-17:00	Hilla Peretz Industrial Engineering and Management	*When in Rome, manage accordingly: The cultural intelligence effect*

Parallel sessions, Thursday, October 24, 9:00-10:00

Computer Science Opera A
Chairman: Elena Kleiman

9:00-9:15	Miri Weiss Cohen Software Engineering	*A Spatio-temporal forecasting for renewable energy systems*
9:15-9:30	Sarai Sheinvald Software Engineering	*Learning deterministic variable automata over infinite words*
9:30-10:00	Dan Lemberg and Zeev Volkovich Software Engineering	*A "sentimental analysis" of computer-generated papers*

Mathematics

Chairman: Haggai Katriel

9:00-9:30	Ofir Schnabel Mathematics	*On gradings of finite dimensional semi-simple algebras*
9:30-10:00	Yaniv Almog Mathematics	*On the stability of Laminar flows between plates*

Industrial Engineering and Management, and Therapeutic

Chairman: Hussein Naseraldin

9:00-9:15	Tamar Gadrich, Yariv Marmor and Emil Bashkansky Industrial Engineering and Management	*Some properties of geodesic distance-based preference chain aggregation*
9:15-9:30	Navit Roth Mechanical Engineering	*Mapping the characteristics of Essential Tremor and its implications on the functional abilities of individuals' upper limbs*
9:30-10:00	Eitan Kribu, Nirit Gavish, Avi Weiss and Uri Ben-Hanan Industrial Engineering and Management	*Wheelchair users' views on an automatic assistive device*

Parallel sessions, Thursday, October 24, 10:15-11:15

Mechanical Engineering and Physics

Chairman: Samy Abu Salih

10:15-10:45	Victor Chernov Mechanical Engineering	*Analysis of sooting flames using a digital camera in the visual range*
10:45-11:15	Atef Shalabney Physics	*Leaky coupled plasmon-waveguide modes for enhanced light-matter interaction*

Mathematics and Industrial Engineering and Management   Opera B
Chairman: Ofir Schnabel

10:15-10:30	Mark Berman Mathematics	*Combinatorial methods in the study of subgroup growth*
10:30-10:45	Mark Elin and Fiana Jacobzon Mathematics	*Coefficient body for non-linear resolvents*
10:45-11:00	Rachel Ravid Industrial Engineering and Management	*A new look at the shortest queue system with jockeying*
11:00-11:15	Aviv Gibali Mathematics	*Superiorization as an acceleration technique for optimization problems and beyond*

Environment and Medical Aspects   Opera C
Chairman: Dafna Knani

10:15-10:30	Sammar Marei Biotechnology Engineering	*Cloning expression and characterization of Galectin-14, a key player in pregnancy*
10:30-10:45	Iris S. Weitz Biotechnology Engineering	*Synthesis and characterization of gold-copper nanocomposite for a dual-modal imaging contrast enhancing material*

Parallel sessions, Thursday, October 24, 14:00-15:00

Mechanical Engineering   Opera A
Chairman: Michael Regev

14:00-14:30	Avishag Pelosi Mechanical Engineering	*Film cooling of a blunt body in supersonic high-enthalpy flows*
14:30-15:00	Yitzchak Yifrach, Koby Ben Dahan and Erez Dahan Mechanical Engineering	*Temperature prediction in the cutting zone and temperature distribution along the cutting tool by slot milling*

Teaching and Electrical Engineering   Opera B
Chairman: Mario Berman

14:00-14:15	Samuel Kosolapov Electrical Engineering	*Cloud-based logistics of in-class micro exams*
14:15-14:30	Yael Furman-Shaharabani, Victor Chernov and Sivan Klas Teaching, Mechanical and Biotechnology Engineering	*Incorporating Kahoot! in engineering content-heavy courses*
14:30-15:00	Nitzan Shitrit, Bar Amsalem and Evgeny Gershikov Electrical Engineering	*Automatic recognition of speaker's language and age group - comparison of different recognition methods and influence of noise on prediction results*

Industrial Engineering and Management   Opera C
Chairman: Rachel Ravid

14:00-14:15	Vladimir Turetsky and Emil Bashkansky Mathematics and Industrial Engineering and Management	*Item response function in antagonistic situations*
14:15-14:30	Illana Bendavid Industrial Engineering and Management	*The due date assignment problem for a single machine with stochastic processing times*