

# Rafael-Academia Research Day

## 23/2/22



**Location:** [Technion Physics Department](#)

**Website:** <https://phsites.technion.ac.il/rafael-research-day-2022/>

<[zoom1](https://technion.zoom.us/j/95933283789)>: <https://technion.zoom.us/j/95933283789> - Auditorium 323

Greetings, Plenary - Prof. Raveh, Engineering Sessions, Plenary - Prof. Michaels, Summary.

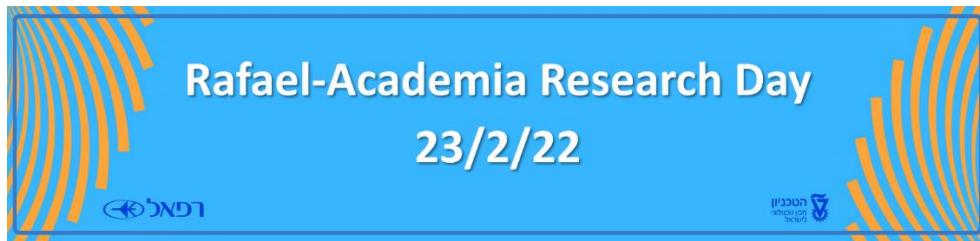
<[zoom2](https://technion.zoom.us/j/93683353997)>: <https://technion.zoom.us/j/93683353997> - Auditorium 001

Science Sessions.

## Program

08:30 – 09:00	Registration	
09:00 – 09:15	< <a href="https://technion.zoom.us/j/95933283789">zoom1</a> > Greetings by Technion President Prof. Uri Sivan Opening Remarks - Technion Physics Dean Ehud Behar	
09:15 – 09:45	Plenary Lecture - <a href="#">Daniella Raveh</a> , Technion – <a href="#">Flexible and Very Flexible Flight Vehicles</a>	
Parallel sessions A – Science A (Lecture Hall 001) < <a href="https://technion.zoom.us/j/93683353997">zoom2</a> > Chair: Raanan Gad		
09:45 – 10:05	<a href="#">Shay Hacoheh-Gourgy</a> , Technion	Quantum computation with bosonic qubits
10:05 – 10:25	<a href="#">Ran Fischer</a> , Rafael	Quantum Technologies – from a vision to products
10:25 – 10:45	<a href="#">Chen Avinaday</a> , Rafael	Quantum sensing and inertial measurements using cold-atom interferometry
10:45 – 11:00	<b>Coffee Break</b>	
11:00 – 11:20	<a href="#">Yoav Sagi</a> , Technion	Quantum computation and simulation with ultracold fermionic atoms
11:20 – 11:40	<a href="#">Ittai Fraenkel</a> , Technion	Configuration and Vibrational Entropies in Glasses
11:40 – 12:00	<a href="#">Iftah Silver</a> , Rafael	Development of a low-Cost 3D Tracker for Particle Physics and Imaging Applications

<b>Parallel sessions A – Engineering A (Lecture Hall 323) &lt;zoom1&gt;</b> Chair: Adi Minikes		
09:45 – 10:05	<a href="#">Ofir Shor</a> , Rafael	Scale and Architecture Effects on Damage Evolution in Carbon/Epoxy Composite Laminates
10:05 – 10:25	<a href="#">Ido Kaminer</a> , Technion	Quantum Optics with Free Electrons
10:25 – 10:45	Zev Lovinger, Rafael	Shear localization in pore collapse under shock compression
10:45 – 11:00	<b>Coffee Break</b>	
11:00 – 11:20	<a href="#">Daniel Rittel</a> , Technion	Impact response of thermoreversible methylcellulose hydrogels
11:20 – 11:40	<a href="#">Yuval Harduf</a> , Rafael	Characterization and Optimization of Particle Dampers Embedded in Additive Manufacturing-Based Designs
11:40 – 12:00	<a href="#">Amit Ross, Rafael</a>	Obstacle-Aided Locomotion of a Robot Manipulator: Modeling, Path Planning, Simulation, and Experiments
12:00 – 13:15	<b>Lunch + Posters</b>	
<b>Parallel sessions B – Science B (Lecture Hall 001) &lt;zoom2&gt;</b> Chair: Yoav Sagi		
13:15 – 13:35	<a href="#">Noam Soker</a> , Technion	Hydrodynamical simulations of common envelope jets supernovae
13:35 – 13:55	<a href="#">Eric Akkermans</a> , Technion	A promenade along quantum condensed matter
13:55 – 14:15	<a href="#">Yakov Krasik</a> , Technion	High Power Microwaves – past, present and future research
14:15 – 14:35	<a href="#">David Eisenberg</a> , Technion	Can Electric Cars Run on Urine? Developing Electrocatalysts for Urea Oxidation
14:35 – 14:55	<a href="#">Yuval Zertal</a> , Technion	Alkyl Vinyl Imidazolium Ionic Liquids as Fuel-binders for Photo-curable Energetic Propellants
<b>Parallel sessions B – Engineering B (Lecture Hall 323) &lt;zoom1&gt;</b> Chair: Dan Michaels		
13:15 – 13:35	<a href="#">Erez Hasman</a> , Technion	Toward atomic-scale spinoptical light sources
13:35 – 13:55	<a href="#">Roman Kositski</a> , Rafael	A physically-based dynamic strength model for Tantalum
13:55 – 14:15	<a href="#">Martin Weiss</a> , Technion	A design methodology for complex guidance laws based on linear quadratic control
14:15 – 14:30	<a href="#">Roman Malits</a> , Rafael	GNN based Reverse Engineering aiming at Detecting security attacks on embedded systems
14:30 – 14:45	<a href="#">Dani Kogan, Leonid Azriel</a> , Technion	Dynamic detection of security attacks on real-time systems
14:45 – 15:05	<a href="#">Tsvi Dvorkind</a> , Rafael	Source localization with feedback beamforming
15:10 – 15:40	<zoom1> Plenary Lecture - <a href="#">Dan Michaels</a> , Technion – <a href="#">Scramjet engines – combustion in supersonic flows</a>	
15:40 – 15:50	Summary and Prizes - Amit Ben Kish, Rafael	
15:50	Ending and Coffee	



## Posters

#	<u>Title</u>	<u>Name</u>
<b>Technion</b>		
1	<a href="#">Possible applications of underwater electrical wire explosions in high energy density physics</a>	Daniel Maler
2	<a href="#">Non-linear Interaction of High-Power Microwave with Plasma</a>	Yang Cao
3	<a href="#">Ionization Distributions in Outflows of Active Galaxies: Universal Trends and Prospect of Future XRISM Observations</a>	Noa Keshet
4	<a href="#">Canonical X-Ray Fluorescence Line Intensities</a>	Roi Rahin
5	<a href="#">Calibration Parameters Of GALI A Gamma Ray Burst Localizing Instrument</a>	Julia Salh
6	<a href="#">Supplying angular momentum to the jittering jets explosion mechanism</a>	Dmitry Shishkin
7	<a href="#">Formation of the heaviest elements in the Universe in CEJSNe jets</a>	Aldana Grichener
8	Generalized Laws of Refraction and Reflection at Interfaces between Different Photonic Artificial Gauge Fields	Moshe-Ishay Cohen
9	Minimum-Effort Guidance with Impact-Time and Angle Constraints	Gleb Merkulov
10	Tuning Macroporosity in Carbons for Environmental Applications	Shir Tabac
11	Urea Oxidation Electrocatalysis on Nickel Hydroxide: The Role of Dispersion	Siniya Mondal
12 *	Simulating the outcome of binary neutron star merger in common envelope jets supernovae	Muhammad Akashi
13 *	Compact high-current pulse generator for laboratory studies of high energy density matter	Sergey Efimov
<b>Rafael</b>		
14	Multi-Rotor Acoustics-Constrained Flight Path Optimization	Barak Deutscher
15	Maximum Efficiency or Wireless Power Transfer System using Additional Winding	Shay Borenstein
16	Experimental Constitutive Model of a Thermoset Polymer	Alex Rabinovich
17 *	Shaping asymmetric planetary nebulae	Ron Schreier
18	Identification of Rotating Structures using Autoresonance	Afik Lifshitz
19	Deep DNA Storage: Scalable and Robust DNA Storage via Coding – Theory and Deep Learning	Dvir Ben Shabat
20	Securing attacks of real-time systems – simulation and detection	Or Feldman
21	The use of GNN for Reserve Engineering	Kfir Girshtein
22	Can Hydrodynamic Lubrication Help Protect the Environment?	Roman Goltsberg
23	Robust and Sparse Design of Broadband Arrays	Dr. Yaakov Buchris
24	Software Verification based on Use Case Requirements	Dor Cohen
25	Distributed Identification of Leader Agents in Semi-autonomous Networks	Liat Peled
26	Viscoelastic properties prediction of fluoropolymers through multiscale modeling	Erez Tamir
27	Local temperature measurement for shear load investigation	Itamar Benichou & Roman Kositski

(\*) Not part of the competition