

IVS-IPSTA 42nd Annual Meeting Scientific Program

	Covered Garden
09:00-09:30	Registration & Gathering
	Hall Rayman Central
09:30-09:50	Introduction & Welcome
09:50-10:25	Plenary Session I
	Covered Garden
10:25-10:45	Coffee Break, Poster Viewing
	Parallel Halls
10:45-13:00	Morning Parallel Sessions
	Covered Garden
13:00-14:45	Lunch with Poster Presentations
	Parallel Halls
14:45-17:00	Afternoon Parallel Sessions
	Covered Garden
17:00-17:20	Coffee Break, Poster Viewing
	Hall Rayman Central
17:20-17:55	Plenary Session II
17:55-18:15	Conclusions & Prizes
18:15-18:30	IVS General Assembly

MORNING PARALLEL SESSIONS

Keynote | Invited | Contributed

10:45-13:00	Energy and Sustainability: Materials, Methods, and Breakthroughs
	Hall Rayman Central
	<i>Chair: Iris Visoly-Fisher (BGU)</i>
10:45	Operando characterization of charge extraction and recombination profiles in photovoltaic cells and photoelectrochemical cells with nanoscale resolution Gideon Segev (TAU)
11:10	Interfaces in photovoltaic materials: from perovskites to chalcogenides Hanna Noa Barad (BIU)
11:35	Depth-resolved mapping of charge collection in photovoltaic and photoelectrochemical systems Daniel Grave (BGU)
11:55	Development of Bi₂Te₃-based materials for thermoelectric energy harvesting in tandem solar cells Yaron Amouyal (TIIT)
12:15	What can chemical bonding tell us about photoinduced phase transition reactions in inorganic semiconductors? Insight from bismuth-antimony selenide Anchal Vashishtha (BGU)
12:30	Kinetic control of metastable Bi₂O₃ phases: unlocking superior properties through sub-millisecond processing Ronen Gottesman (HUJI)
12:45	Enzyme design principles applied to heterogeneous electrocatalysts: breakthroughs in the nitrogen cycle David Eisenberg (TIIT)

10:45-13:00	Bio Applied Surfaces and Materials
	Hall Rakefet
	Chair: <i>Maya Kleiman (Volcani)</i>
10:45	From Biomineralization to functional bio-inspired materials and coatings Boaz Pokroy (TIIT)
11:10	Bridging biology and electronics through peptide self-assembly Nurit Ashkenasy (BGU)
11:35	TBA Lihi Adler-Avramovich (TAU)
11:55	Amphiphobes and amphiphiles: harnessing nature's toolkit for drug delivery Dan Lewitus (Shenkar)
12:15	Electrospun vascular-mimetic scaffolds as platforms for organoid development Hagay Shpaisman (BIU)
12:30	Bioinspired design of hybrid films for wet adhesion Gali Fichman (HUJI)
12:45	Electrospun vascular-mimetic scaffolds as platforms for organoid development Nitzan Livni (WIZ)

10:45-13:00	Low Dimensionality Materials
	Hall Yasmin
	<i>Chair: Jonah Waissman (HUJI)</i>
10:45	2D photonic integration for advanced active functionalities on-chip Eli Goykhman (HUJI)
11:10	Interacting bands of magic angle twisted bilayer graphene revealed by the Quantum Twisting Microscope Jiewen Xiao (WIS)
11:35	Optoelectronic modulation via inter-coupled ferroelectricity in 2D In₂Se₃ based heterostructures Elad Koren (TIIT)
11:55	Extreme polaritonic confinement in indirectly patterned hexagonal boron nitride Hanan Herzig Sheinfux (BIU)
12:15	From 3D to 1D structures: Curvature and chirality induced properties of WS₂ and MoS₂ nanotubes Alla Zak (HIT)
12:30	Angular emission properties of strained transition-metal dichalcogenides Moshe Harats (BGU)
12:45	hBN alignment orientation controls moiré strength in rhombohedral graphene Matan Uzan (WIS)

10:45-13:00	Nanoscience for Future Quantum Technologies: Novel Materials, Devices, and Characterizations
	Hall Conhiya
	<i>Chair: Yoram Selzer (TAU)</i>
10:45	Hyperpolarization of local and bulk ^{13}C nuclei in diamond with nitrogen-vacancy centers at high magnetic fields Ilia Kaminker (TAU)
11:10	Diamond-based quantum technologies Aharon Blank (TIIT)
11:35	Diamond quantum science and technology Nir Bar-Gil (HUJI)
11:55	Relaxation and decoherence spectroscopy of quantum materials using a single qubit Amit Finkler (WIS)
12:15	Coherent control of phonon anharmonicity Alon Ron (TAU)
12:30	Sensing single molecule magnets with nitrogen vacancy centers Ariel Smooha (WIS)
12:45	Hyperpolarization with NV centers in diamonds at 7 and 14 T Eyal Laster (WIS)

10:45-12:55	Plasma Science I
	Hall Ilan
	Chair: Yosef Pinhasi (Ariel University)
10:45	Derivation of stationary MHD solutions using variational variables Asher Yahalom (Ariel University)
11:15	Exploring Laser-Induced Strong-Field Ionization Phenomena: Toward Dynamic 4D Imaging and Beyond Eugene Frumker (BGU)
11:45	Pushing the Limits of THz FEL Sources: Tapering-Enhanced Superradiance Ariel Nause (Ariel University)
12:10	Water flows and phase transitions generated by strip-line sub-microsecond time-scale discharges Ron Grikshtas (TIIT)
12:25	Propagation HPMs through a gas-filled waveguide in the presence of an axial magnetic Adi Haim (TIIT)
12:40	Thresholds for plasma formation at the surface of different materials under interaction with high current electron beam Sagi Turiel (TIIT)

AFTERNOON PARALLEL SESSIONS

Keynote | Invited | Contributed

14:45-17:00	Nanophotonics & Spintronics
	Hall Rayman Central
	<i>Chair: Dan Oron (WIZ)</i>
14:45	Tuning Quantum Properties through Coupling of Molecular Lattices to 2D Materials Thomas Kempa (Johns Hopkins University)
15:10	Clocking and controlling attosecond currents in scanning tunneling microscopy Michael Kruger (TIIT)
15:35	Turning color into distance: a nanometric axial ruler for 3D optical metrology Adi Salomon (BIU)
15:55	A sensitive optical Hall effect technique at visible wavelengths: insights into the spin orbit coupling Amir Capua (HUJI)
16:15	Spin lifetime measurements using high frequency response Offek Marely (HUJI)
16:30	Solid-state superradiance enabled through collective dipole–dipole interactions in perovskite quantum dot superlattices Shai Levy (TIIT)
16:45	Photoelectron chiral dichroism induced by lasers without helicity via chiral hole wave-packets Gal Bouskila (TIIT)

14:45-17:00	Surface Science & Films
	Hall Rakefet
	<i>Chair: Amos Sharoni (BIU)</i>
14:45	Symmetry breaking and enantioselective adsorption in chiral inorganic nanocrystals Gil Markovitch (TAU)
15:10	TBA Lior Kornblum (TIIT)
15:35	Harnessing substrate morphology to tune lattice and thermal mismatch strain in thin films Yoav Kalchaim (TIIT)
15:55	Atomic layer processes for UV-stable polymers: synergistic effects of infiltration and deposition of ZnO Gil Menasherov (TIIT)
16:10	Lithography free gradient-index antireflective optical surface via capillary colloidal assembly Sanjay Singh Eswara Singh (BGU)
16:25	Vibrational energy transfer upon the collision of NO with VO₂ thin films across the insulator-to-metal transition Igor Rahinov (The Open University of Israel)
16:40	Crystals as architects: organic templates for 3D nanostructured thin films using atomic layer deposition processes BatEl Rephael-Zilberstein (BIU)

14:45-17:00	Computational Modeling and Data Science for New Materials
	Hall Yasmin
	<i>Chair: Ofer Neufeld (TIIT)</i>
14:45	Time-density functional approach to open system electron dynamics using a master equation with stochastically bundled dissipators Roi Baer (HUJI)
15:10	Modeling mismatched material interfaces Maytal Caspary Toroker (TIIT)
15:35	From DFT to correlated wavefunction methods: predicting materials properties Tamar Goldzak (BIU)
15:55	Molecular dissociation and error decomposition in density functional theory: an ensemble perspective Tamar Stein (HUJI)
16:15	Simulating Cu-Mn alloy stability Nadav Moav (TAU)
16:30	Many-Body effects in lattice dynamics: A case study of the displacive phase transition in BiVO₄ Matan Menahem (WIZ)
16:45	Inhomogeneous strain-induced exciton propagation in 2D transition-metal dichalcogenides - a study from first principles Amir Kleiner (WIZ)

14:45-17:00	Smart and Multifunctional Materials and Devices: Transducers, Sensors, and Actuators
	Hall Conhiya
	<i>Chair: Alex Laikhtman (HIT)</i>
14:45	Applications of non-toxic inorganic WS₂ nanotubes: from nanocomposite bioresorbable scaffolds for cardiovascular diseases and tissue engineering to artificial vision system Alla Zak (HIT)
15:10	Organic Magnetoresistance – a test bed for Field-Spin interactions Paul Ben Ishai (Ariel University)
15:35	Highly selective photocatalytic degradation of organic pollutants by core-shell nanoparticles via superoxide radical pathway Lena Yadgarov (Ariel University)
15:55	Multifunctional optical platforms for selective detection of metal ions in aqueous systems Mindy Levine (Ariel University)
16:15	Graphene sensory reinforcement for structural health monitoring Anat Menkin (BGU)
16:30	Non-Linear Transmission lines for pulse compression Yoav Sintov (Soreq NRC)
16:45	From centro-symmetric racemic organic crystals to pyroelectric and ferrielectric analogues Shir Abrahams (WIZ)

14:45-17:00	Plasma Science II
	Hall Ilan
	<i>Chair: Asher Yahalom (Ariel University)</i>
14:45	Rotating electric and magnetic fields for space propulsion Amnon Fruchtman (HIT)
15:20	Prevention of tokamak disruptions with feedback Henry Strauss (HRS Fusion)
15:55	Spiral generator as a compact pulse power source for sub-ns pulses Yan Zeltser (TIIT)
16:25	Plasma formation produced by HMP in the gas-filled waveguide Vladislav Maksimov (TIIT)