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
	Chair: Iris Visoly-Fisher (BGU)
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 Bi 2 Te 3 -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 Bi_2O_3 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: *Maya Kleiman (Volcani)*
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	**Tunable supramolecular biomaterials for regenerative medicine** 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
	Chair: Jonah Waissman (HUJI)
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 WS 2 and MoS 2 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
	Chair: Yoram Selzer (TAU)
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)
12:15	**Water flows and phase transitions generated by strip-line sub-microsecond time-scale discharges** Ron Grikshtas (TIIT)
12:35	**Propagation HPMs through a gas-filled waveguide in the presence of an axial magnetic** Adi Haim (TIIT)

AFTERNOON PARALLEL SESSIONS

Keynote | Invited | Contributed

14:45-17:00	**Nanophotonics & Spintronics**
	Hall Rayman Central
	Chair: Dan Oron (WIZ)
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 Marelly (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
	Chair: Amos Sharoni (BIU)
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
	Chair: Ofer Neufeld (TIIT)
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 BiVO 4** 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
	Chair: Alex Laikhtman (HIT)
14:45	**Applications of non-toxic inorganic WS_2 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 Abrahami (WIZ)

14:45-16:45	**Plasma Science II**
	Hall Ilan
	Chair: Asher Yahalom (Ariel University)
14:45	**Rotating electric and magnetic fields for space propulsion** Amnon Fruchtman (HIT)
15:15	**Prevention of tokamak disruptions with feedback** Henry Strauss (HRS Fusion)
15:45	**Spiral generator as a compact pulse power source for sub-ns pulses** Yan Zeltser (TIIT)
16:05	**Plasma formation produced by HMP in the gas-filled waveguide** Vladislav Maksimov (TIIT)
16:25	**Thresholds for plasma formation at the surface of different materials under interaction with high current electron beam** Sagi Turiel (TIIT)