



IVS-IPSTA 2020 - 38th Annual Conference - ONLINE December 13, 2020

Please click on the hyperlink to each session (underlined in blue) to be directed to the respective Zoom sessions

9:15 [Opening Remarks](#) – Gilbert Daniel Nessim (BIU), IVS President

Plenary Session I: IVS Research Excellence Awardees: Hossam Haick and Ernesto Joselevich (joint winners)

9:30 **Hossam Haick (Technion)**

A multifunctional electronic skin with advanced self-healing capabilities

9:50 **Ernesto Joselevich (Weizmann Institute of Science)**

Kinetics and mechanism of guided nanowire growth

10:10 **Break**

10:20 **Parallel Sessions I**

Morning Program

[Plasma Science I](#)

[Energy and Catalysis](#)

[Nanomaterials, Thin films, and Surface Science I](#)

[Nanoelectronics and Spintronics](#)

Chair: Yoav Hadas (Rafael)

Chair: Malachi Noked (BIU)

Chair: David Zitoun (BIU)

Chair: Elad Koren (Technion)

10:20 **Yakov Krasik (Technion) Keynote**
Research of underwater electrical explosion of wires and strong shock waves generation

Wolfgang Zeier (Muenster) Keynote
Inductive effects or not; do they exist in solid ionic conductors?

Luis M. Liz-Marzán (CIC biom) Keynote
Nanomaterials with Plasmonic Chirality

Shahal Ilani (WIS) Keynote
Visualizing the Quantum Phases of Strongly Interacting Electrons

10:40 **Yitzhak Maron (WIS) Invited**
Experimental determination of the thermal and turbulent ion motion in a stagnating plasma

Alex Schechter (Ariel U.) Invited
Dimethyl Ether (DME) Oxidation in a Promising New Fuel Cell Technology

Nicola Pinna (Berlin) Invited
Gas sensing of NiO-CNTs core-shell heterostructures: optimization by radial modulation of the hole-accumulation layer

Eilam Yalon (Technion) Invited
Phase change materials and their applications

10:55 **Dan Lev (RAFAEL) Invited**
From Plasma Science to Space Electric Propulsion

Michal Leskes (WIS) Invited
Sensitivity enhanced NMR spectroscopy for probing bulk and interfacial properties of energy storage materials

Mark Schwartzman (BGU) Invited
Directly nanoimprinted sub-wavelength antireflective structures

Beena Kalisky (BIU) Invited
Imaging phase transitions with scanning SQUID

11:10 **Galia Faingold (Technion) Contributed**
A Numerical Investigation of NH₃/O₂/He Ignition Limits in Non-Thermal Plasma

David Eisenberg (Technion) Contributed
Hydrazine Oxidation Electrocatalysis on Multi-Doped Carbons: Who Does What?

Alla Zak (HIT) Contributed
Synthetic Route Towards Pure Phase of WS₂ & MoS₂ Inorganic Nanotubes and their Unusual Properties

Itai Epstein (TAU) Contributed
Nanometer-Scale Cavities for Mid-infrared Light Based on Graphene Plasmons

11:20 **Amnon Fruchtman (HIT) Contributed**
Mass Separation by Oscillating Electromagnetic Fields

Shahar Dery (HUJI) Contributed
Intra-Particle Hydrogen Spillover from the Oxide-Metal Interface Triggers Site-Independent Hydrogenation Reactions within Single Particles

Igor Rahinov (OUI) Contributed
Following the microscopic pathways to energy dissipation and adsorption in molecule-metal surface encounter

Subhrajit Mukherjee (Technion) Contributed
Monolithic Integration of Coplanar Ferroelectric-Semiconductor Heterojunction Phototransistor on Two-Dimensional In₂Se₃

11:30 **John G. Leopold (Technion) Contributed**
A split-cathode as a novel type of virtual electron source for relativistic magnetrons

Hannah-Noa Barad (Max Plank Inst.) Contributed
Composition and nanostructure variation in a multinary materials library: effect on electrocatalytic properties of oxygen evolution

Yonatan Calahorra (UC) Contributed
Enhanced Piezoelectricity and Electromechanical Efficiency in Nanoporous GaN

Sudipto Chakrabarti (WIS) Contributed
Magnetic control over the fundamental structure of atomic wires

Marko Cvejić (WIS) Contributed
Effects of plasma rotation in an experiment of magnetic flux compression by an imploding plasma

11:40 **Discussion**

12:00 **Break + [IPSTA Member Meeting](#)**

[Intel Tutorial](#)

12:20 **A bird's view on problem-solving in microchip manufacturing**
Anatoly Agulyansky (Intel)

Followed by a discussion with Yuli Chakk (Intel)



13:20 **Break**

13:30 **Parallel Sessions II**

Afternoon Program

[Plasma Science II](#)

[Soft and Biological Matter](#)

[Nanomaterials, Thin films and Surface Science II](#)

[Materials Assembly & Sensors](#)

Chair: Ido Barth (HUJI)

Chair: Ulyana Shimanovich (WIS)

Chair: Maya Bar-Sadan (BGU)

Chair: Amit Sitt (TAU)

13:30 **Nat Fisch (Princeton) Keynote**
Energy Transformations in Plasma

Fritz Vollrath (University of Oxford) Keynote
Spider's droplet silk, a most intriguing class of materials

Sarah Haigh (U. Manchester) Keynote
Enabling 2D heterostructure development with atomic resolution imaging: studies of twist reconstruction and degradation

John Hart (MIT) Keynote
Ultrathin Flexography and Digital Transfer Printing Using Engineered Carbon Nanotube Surfaces

13:50 **Eli Sarid (BGU, CERN) Invited**
The quest for precision measurements of antihydrogen atoms

Filipe Natalio (WIS) Invited
Semi-synthetic biological fabrication of cellulose fibers with tailored properties

Adi Salomon (BIU) Invited
Cathodoluminescence Nanoscopy of Plasmonic Structures

Gili Bisker (TAU) Invited
Fluorescent single-walled carbon nanotubes for sensing and imaging in the near-infrared

14:05 **Yecheil Frank (LLNL) Invited**
Bands method for pre-calculating NLTE material properties

Raya Sorkin (TAU) Invited
The soft side of extra-cellular vesicles

Ido Kaminer (Technion) Invited
Extreme Light-Matter Interactions in the Ultrafast Transmission Electron Microscope

Roie Yerushalmi (HUJI) Invited
Water-Compatible Electronic Tunneling Spectroscopy Detectors enabled by Nano-Floret Hybrid Nanosystems

14:20 **Omri Hamo (Technion) Contributed**
2D Particle-in-Cell Simulation of the Narrow Channel Hall Thruster Plume

Ronit Bitton (BGU) Invited
Macroscopic sacs and membranes of hierarchically assembled biopolymers and peptides

Sidney Cohen (WIS) Contributed
Nano-Mechanical/Spectroscopic Characterization of Organic Micro-Inclusions in Flint

Rakefet Ofek Almog (Azrieli College of Engineering) Contributed
Decorating ZnO Nanowalls with AuNP for Bio-Sensing Applications

14:30 **Meytal Siman Tov (Technion) Contributed**
Generation of Periodic Bunches Produced by a Squeezed Electron Beam in a Resonant Cavity

Irit Rosenhek-Goldian (WIS) Contributed
Mechanical properties of fibrillar materials: the role of H-bond formation in amyloid peptides

Asmita Dutta (Ariel Univ.) Contributed
Surface modifications of carbon nanodots reveal the chemical source of their bright fluorescence

Ehud Greenberg (BIU) Contributed
3D Material Deposition by a Laser Induced Photo-Thermal Reaction

14:40 **Tal Queller (WIS) Contributed**
Radial current distribution of a gas-puff self imploding plasma close to stagnation

Chiara Daraio (CalTech) Keynote
Organic temperature and IR sensors

Ashish Prajapati (BGU) Contributed
Omnidirectional Absorption with Submicrometer-Scaled Compound Parabolic Light Concentrator Arrays

Thomas Gilmore (Impedans Ltd) Contributed
On modern fault detection methods for industrial plasmas using intelligent sensors

Tal Miller (HUJI) Contributed
Rate Equations Model of Multiple Mirror Systems

14:50 **Discussion**

15:10 **Break**

[Plenary Session II:](#)

15:30 **Paul S. Weiss (UCLA)**

Atomically Precise Chemical, Physical, Electronic, and Spin Contacts

Chair: **David Cahen (WIS, BIU)**

16:10 [IVS Awards and Closing Remarks](#)

16:30 [IVS General Assembly](#)