

IVS-MRS 2020 Student Conference

9:15 Opening Remarks (IVS president Prof. Daniel Nessim)

9:30 Plenary Session I: Materials of The Future
Speaker: **Prof. Andrew Rappe**, University of Pennsylvania

10:10 **Break**

10:20 **Parallel Sessions I**

Energy and Sustainability: New Materials

Chair: Eliran Evenstein, BIU

10:20 **Ayan Mukherjee** (BIU)
Rationally Designed Spherical V₂O₅ as High Capacity Insertion Material for Mg-ion battery

10:40 **Tirupathi Rao Penki** (BIU)
Solid Mercury (Hg) Nanoparticles at Ambient Conditions and Their Applications

Soft and Biological Matter

Chair: Kusha Sharma, BIU

10:20 **Elad Arad** (BGU)
Forgetting Catalysis: the Possible Catalytic Nature of Alzheimer's

10:40 **Yulia Shmidov** (BGU)
Effect of Crosslinker Topology on Enzymatic Degradation of Hydrogels

Nanomaterials I

Chair: Jonathan Tzadikov, BGU

10:20 **Nitzan Shauloff** (BGU)
Porous Graphene Oxide-Metal Ion Composite for Selective Sensing of Organophosphate Gases

10:40 **Dr. Maruthapandi Moorthy** (BIU)
Fluorescent Carbon Dots as an Initiators for Polymerization and its applications

11:00 **Break**

11:10 **Parallel Sessions II**

Surface Modification

Chair: Sarah Taragin, BIU

11:10 **Rosy** (BIU)
Why Surface Engineering of Interface is an Important Protection Strategy for Enhancing the Efficacy of Next Generation Batteries? Li and Mn Rich LiNi_xMn_yCo_z Oxide (NCM) as a Test Case

11:30 **Awad Shalabny** (BGU)
Low Temperature Shallow Doping on Silicon Nanowire Surfaces by Annealing Pulses

Spectroscopy and Microscopy I

Chair: David Svetlizky, TAU

11:10 **Shira Haber** (WIS)
Unravelling the Structure and Function of Artificial Cathode-Electrolyte Interphases by ssNMR Spectroscopy

11:30 **Thomas Zacharias** (TAU)
Light Beams With Volume Superoscillations

Nanomaterials II

Chair: Amram Azulay, Technion

11:10 **Yarden Danieli** (WIS)
Surface Guided Growth of CdTe Nanowires for Narrow-Bandgap Applications

11:30 **Assael Cohen** (TAU)
Ultra-High Optical Quality WS₂ Atomic-Layers via a Growth-Etch MOCVD Approach

11:50 **Break**

12:00 Round Table Discussion: Career Path Choices

Participants: **Dr. Mahdi Halabi** (Intel); **Dr. Elad Mentovich** (NVIDIA); **Dr. Tamar Van der Boom and Dr. Anat de Picciotto** (Pearl Cohen Zedek Latzer Baratz); **Prof. Maya Bar-Sadan** (BGU); **Dr. Malachi Noked** (BIU); **Mr. Nadav Douani, Dr. Elena Meirzadeh, Dr. Hanna Noa Barad, Dr. Ronen Gottesman** (ScienceAbroad - ארגון המדענים הישראליים בחו"ל)

12:40 Company Designated Rooms

Intel NVIDIA Pearl Cohen Zedek Latzer Baratz ScienceAbroad: Postdoc Abroad Academia

13:20 **Break**

13:30 **Parallel Sessions III**

Energy and Sustainability: Catalysis

Chair: Shahar Dery, HUJI

13:30 **Tarik Aziz** (BIU)
Electrochemically Overall Water-Splitting: Catalyzed by Rationally Assembled Copper Phosphide with g-Carbon Nitride (Cu₃P@g-C₃N₄) Composites Loaded on 3D-Graphene Electrode

13:50 **Adi Azoulay** (BGU)
New Paradigm for Materials Design: Synthesis of Carbon Nitrogen Phosphorus Materials Based on Melamine-Phosphate Single Crystals with Sequence Encoded Properties

Spectroscopy and Microscopy II

Chair: Ayat Asleh, BGU

13:30 **Adi Cohen** (WIS)
Do Anharmonic Structural Dynamics Screen Traps in Halide Perovskites?

13:50 **Maor Asher** (WIS)
Side Chain Effect on the Lattice Dynamics of Organic Semiconductors

Nanomaterials III

Chair: Lotem Alus, WIS

13:30 **Lea Javitt** (WIS)
The Role of Ions On Ice Nucleation

13:50 **Evgeniy Makagon** (WIS)
Electro-Chemo-Mechanical Coupling: A Novel Approach to Micro Actuation

14:10 **Break**

14:20 Plenary Session II: From Gutenberg Bible to 4D printing
Speaker: **Prof. Shlomo Magdassi**, Hebrew University of Jerusalem

15:00 **Break**

15:10 **Flash Talk Session**

Catalysis Soft and Biological Matter Nanomaterial I Energy Storage Spectroscopy and Microscopy Nanomaterials II

15:10 **Chair: Eliran Evenstein, BIU** **Chair: Kusha Sharma, BIU** **Chair: Jonathan Tzadikov, BGU** **Chair: Sarah Taragin, BIU** **Chair: David Svetlizky, TAU** **Chair: Shahar Dery, HUJI**

15:10 **Nagaprasad Reddy Samala** (BIU)
Mn-corroles as Electrocatalysts for Oxygen Reduction Reaction: A First Principles Study **Molhm Nassir** (BIU)
Development of NPP1 Inhibitors as Potential Drugs for the Treatment of Osteoarthritis/CPPD Disease **Rajashee Konar** (BIU)
Scalable Synthesis of Few-Layered 2D Tungsten (W) Foil Using Ambient Vapor Deposition **Ran Attias** (BIU)
Solvent Effects on The Reversible Intercalation of Magnesium-Ions Into Metal Oxide Cathodes **Vinayaka H. Damle** (BIU)
Microcavity Enhanced Raman Spectroscopy of Fullerene C60 Particles **Shiva Udachan** (RCUB)
Impact of Thickness on Microstructure of Chromium Nanofilms

15:20 **Samuel Hardisty** (BIU)
Carbon Nanotube Encapsulation for HOR/HER Catalysts **Sharada Govinda** (WIS)
Effect of Biotin Binding On The Electron Transport via Streptavidin **Yosef Lang** (AU)
Solvent Based Sectioning of Aluminum Single Crystals **Liel Abisdri** (BGU)
Formation of Carbon Nitride Films Using Electrophoretic Deposition of Supramolecular Assemblies for Photoelectrochemical Cells **Lior Beck** (WIS)
Optical Study of Isoxanthopterin Particles via Electron Microscopy **Mykola Shatalov** (AU)
Mechanisms of Formation and Morphology of Co-Sputtered YZO Films at Ultralow Yttrium Concentration

15:30 **Melina Zysler** (BIU)
Tunable PtNiPt/C NPs Synthesized by Multi-Step Solvothermal Methodology for Electrocatalysis Application **Nuphar Bianco-Stein** (Technion)
Helical Microstructures of The Mineralized Coralline Red Algae Determine Their Mechanical Properties **Evgeniy Mervinetsky** (HUJI)
Oxytocin-Derived Metal Ion Biosensors **Or Shafir** (BIU)
Mo Substitution in Ferroelectric Perovskite Oxides Towards Transparent Photovoltaic Applications **Pola Shriber** (BIU)
Tunable Synthesis of Sn(II)S by Reaction of Liquid Tin With Sulfur Vapor Using Atmospheric Pressure Chemical Vapor Deposition **Evgeniy Makagon** (WIS)
Mechanical and Electrochemical Study of Acceptor Doped BaZrO₃: The Effects of Hydration and Dopant Ionic Radius

15:40 **Break**

15:55 Closing Remarks & Awards
Presentation 3 Awards

1st prize by Intel
2nd prize by Pearl Cohen Zedek Latzer Baratz
Flash Talk 3 Awards