



THE HEBREW UNIVERSITY OF JERUSALEM



THE HARVEY M. KRUEGER FAMILY CENTER FOR NANOSCIENCE AND NANOTECHNOLOGY



מכון ויצמן למדע WEIZMANN INSTITUTE OF SCIENCE



The Alexander Kofkin Faculty of Engineering Bar-Ilan University



Faculty of Exact Science Department of Chemistry Bar-Ilan University



BINA Bar-Ilan Institute of Nanotechnology & Advanced Materials



Sustainability And Energy Research Initiative

IVS 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

Ayan Mukherjee (BIU)

Rationally Designed Spherical V₂O₅ as High Capacity Insertion Material for Mg-ion battery

Tirupathi Rao Penki (BIU)

Solid Mercury (Hg) Nanoparticles at Ambient Conditions and Their Applications

11:00 **Break**

Soft and Biological Matter

Chair: Kusha Sharma, BIU

Elad Arad (BGU)

Forgetting Catalysis: the Possible Catalytic Nature of Alzheimer's

Yulia Shmidov (BGU)

Effect of Crosslinker Topology on Enzymatic Degradation of Hydrogels

Nanomaterials I

Chair: Jonathan Tzadikov, BGU

Nitzan Shauloff (BGU)

Porous Graphene Oxide-Metal Ion Composite for Selective Sensing of Organophosphate Gases

Dr. Maruthapandi Moorthy (BIU)

Fluorescent Carbon Dots as an Initiators for Polymerization and its applications

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

Shira Haber (WIS)

Unravelling the Structure and Function of Artificial Cathode-Electrolyte Interphases by ssNMR Spectroscopy

Thomas Zacharias (TAU)

Light Beams With Volume Superoscillations

Nanomaterials II

Chair: Amram Azulay, Technion

Yarden Danieli (WIS)

Surface Guided Growth of CdTe Nanowires for Narrow-Bandgap Applications

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

Adi Cohen (WIS)

Do Anharmonic Structural Dynamics Screen Traps in Halide Perovskites?

Maor Asher (WIS)

Side Chain Effect on the Lattice Dynamics of Organic Semiconductors

Nanomaterials III

Chair: Lotem Alus, WIS

Lea Javitt (WIS)

The Role of Ions On Ice Nucleation

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

Chair: Eliran Evenstein, BIU

15:10 **Nagaprasad Reddy Samala** (BIU)

Mn-corroles as Electrocatalysts for Oxygen Reduction Reaction: A First Principles Study

15:20 **Samuel Hardisty** (BIU)

Carbon Nanotube Encapsulation for HOR/HER Catalysts

15:30 **Melina Zysler** (BIU)

Tunable PtNiPt/C NPs Synthesized by Multi-Step Solvothermal Methodology for Electrocatalysis Application

Soft and Biological Matter

Chair: Kusha Sharma, BIU

Molhm Nassir (BIU)

Development of NPP1 Inhibitors as Potential Drugs for the Treatment of Osteoarthritis/CPD Disease

Sharada Govinda (WIS)

Effect of Biotin Binding On The Electron Transport via Streptavidin

Nuphar Bianco-Stein (Technion)

Helical Microstructures of The Mineralized Coralline Red Algae Determine Their Mechanical Properties

Nanomaterial I

Chair: Jonathan Tzadikov, BGU

Rajashee Konar (BIU)

Scalable Synthesis of Few-Layered 2D Tungsten (W) Foil Using Ambient Vapor Deposition

Yosef Lang (AU)

Solvent Based Sectioning of Aluminum Single Crystals

Evgeniy Mervinetsky (HUJI)

Oxytocin-Derived Metal Ion Biosensors

Energy Storage

Chair: Sarah Taragin, BIU

Ran Attias (BIU)

Solvent Effects on The Reversible Intercalation of Magnesium-Ions Into Metal Oxide Cathodes

Liel Abisdri (BGU)

Formation of Carbon Nitride Films Using Electrophoretic Deposition of Supramolecular Assemblies for Photoelectrochemical Cells

Or Shafir (BIU)

Mo Substitution in Ferroelectric Perovskite Oxides Towards Transparent Photovoltaic Applications

Spectroscopy and Microscopy

Chair: David Svetlizky, TAU

Vinayaka H. Damle (BIU)

Microcavity Enhanced Raman Spectroscopy of Fullerene C60 Particles

Lior Beck (WIS)

Optical Study of Isoxanthopterin Particles via Electron Microscopy

Pola Shriber (BIU)

Tunable Synthesis of Sn(II)S by Reaction of Liquid Tin With Sulfur Vapor Using Atmospheric Pressure Chemical Vapor Deposition

Nanomaterials II

Chair: Shahar Dery, HUJI

Shiva Udachan (RCUB)

Impact of Thickness on Microstructure of Chromium Nanofilms

Mykola Shatalov (AU)

Mechanisms of Formation and Morphology of Co-Sputtered YZO Films at Ultralow Yttrium Concentration

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