

# JOINT HI-SCORE AND HYPERCELLS MEETING

ONLINE WORKSHOP

12<sup>th</sup>-14<sup>th</sup> October 2020



Israeli-German  
Research School



Graduate  
School

## Schedule

October 12		
Time	Name	Title
09:00	Organizers	Welcome
<b>1. Session</b>	<b>Chair: Prof. Lioz Etgar</b>	
09:10	Carlos Francisco Pena Camargo	Halide Segregation versus Interfacial Recombination in Bromide-Rich Wide-Gap Perovskite Solar Cells
09:30	Emilio GutierrezPartida	Stable double cation perovskites with 18 $\mu$ s lifetime and high luminescence yield for efficient inverted perovskite solar cells
09:50	Max Grischek	Finding the Most Promising Route for All-Inorganic Perovskites with PL Measurements: The PCE Potential of the Most Relevant Compositions and Transport Layers
<b>10:10 - 10:40</b>	<b>Coffee Break: Stay online and chat with others in breakout rooms!</b>	
<b>2. Session</b>	<b>Chair: Prof. Lioz Etgar</b>	
10:40	Hampus Näsström	Dependence of Phase Transitions on Halide Ratio in Inorganic CsPb(BrxI1-x)3 Perovskite Thin Films
11:00	Ibrahim Simsek	Chalcogenide-perovskite thin films as absorber materials
11:20	Marion Flatken	The Colloidal Nature in Halide Perovskite Precursor Solutions
<b>11:40 - 13:10</b>	<b>Lunch Break: Stay online and chat with others in breakout rooms!</b>	

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<b>3. Session</b>	<b>Chair: Prof. Roel van de Krol</b>	
13:10	Fatima Akhundova	Combinatorial exploration of novel perovskite solar cell materials
13:20	Ke Xu	Finding a suitable high bandgap stable perovskite material for tandem application by slot die coating
13:40	Hans Koebler	Stability of PIN perovskite solar cells
<b>14:00 - 14:30</b>	<b>Coffee Break: Stay online and chat with others in breakout rooms!</b>	
<b>4. Session</b>	<b>Chair: Prof. Roel van de Krol</b>	
14:30	Bat-El Cohen	Photoelectronic properties and energy losses in low dimensional perovskite
14:50	Stav Rahmany	Two dimensional or passivation treatment: the study of hexylammonium post-deposition treatment on 3D halide-perovskite-based solar cells
15:10	Yahel Soffer	Low Frequency Collinear Pre-Resonant Impulsive Stimulated Raman Microspectroscopy
<b>15:20 - 16:00</b>	<b>Coffee Break: Stay online and chat with others in breakout rooms!</b>	
<b>16:00 - 17:00</b>	<b>Meet the experts</b>	

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## Meet the experts

#	Subject	Expert
1	Perovskite and solar water splitting: what can we learn from each other?	Prof. Roel van de Krol
2	How to determine the PLQY and PL lifetimes correctly	Dr. Thomas Unold
3	The Perovskite structure: general chemistry, different compositions their obstacles, binding forces, chemistry in solution, nucleation process	Dr. Oleksandra Shargieieva
4	Diffraction - The secret behind the peaks: General diffraction methods, Rietveld/Le Bail, what can we do with powder XRD patterns?	Prof. Susan Schorr, Dr. Joachim Breternitz
5	Basic Semiconductor Physics - How to apply the general model of a p-n-junction to our well-known perovskite solar cell: energy band model for different cases (dark light doping), transfer to tandem solar cells	Prof. Dieter Neher
6	Current-voltage characteristics - Way more than just efficiency: general information one can get out of it, discussion with the help of weird examples	Dr. Martin Stollerfoht

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October 13		
Time	Name	Title
09:00	Organizers	Welcome
<b>5. Session</b>	<b>Chair: Dr. Thomas Unold</b>	
09:10	Amran Al-Ashouri	Advancing perovskite photovoltaics through holeselective contact design
09:30	Ivona Kafedjiska	NiOx as an inorganic hole-transporting material for monolithic CIGS-Perovskite tandem solar cells
09:50	Gopinath Paramasivam	Semitransparent cells to Mini Modules for 4terminal Tandem application
10:10	Bor Li	Optimizing and Upscaling Perovskite/Silicon Tandem Solar Cells with Industrial Bottom-Cells
<b>10:20 - 11:00</b>	<b>Coffee Break: Stay online and chat with others in breakout rooms!</b>	
<b>11:00 - 12:00</b>	<b>HyPerCells Meeting</b>	
<b>12:00 - 13:10</b>	<b>Lunch Break: Stay online and chat with others in breakout rooms!</b>	
<b>6. Session</b>	<b>Chair: Prof. Iris Visoly-Fisher</b>	
13:10	Johannes Sutter	Tailored Light Management Nanostructures in Perovskite-Silicon Tandem Solar Cells
13:30	Markus Schleuning	A new perspective on kinetics and thermodynamics in Photoelectrochemical cells
13:50	Ekaterina Shabratova	EPR-on-a-Chip as a new technology for operando materials characterization
<b>14:10 - 14:30</b>	<b>Coffee Break: Stay online and chat with others in breakout rooms!</b>	

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<b>7. Session</b>	<b>Chair: Prof. Iris Visoly-Fisher</b>	
14:30	Patrick Schnell	Understanding the interface of metal oxide photoanodes for direct solar water splitting
14:50	Radu Bors	Using Simulation Tools for Advancing the Development of Solar Water Splitting Devices
15:10	Carolin Rehermann	In-situ Spectroscopy to study perovskite thin formation processes: (In)homogeneity in mixed halide perovskite and future measurement possibilities
<b>15:30 - 16:00</b>	<b>Coffee Break: Stay online and chat with others in breakout rooms!</b>	
<b>16:00 - 17:00</b>	<b>Meet the experts</b> (possible topics as on Monday)	

October 14		
Time	Name	Title
09:00	Organizers	Welcome
<b>8. Session</b>	<b>Dr. Martin Stolterfoth</b>	
09:10	Lucas BodensteinerDresler	Concepts for evaluating large XPS datasets of combinatorial libraries: the CuxNi1-xOy system studied as a HTL candidate material
09:30	Dorothee Menzel	Advanced Valence Band Spectroscopy at the CsMAFA/ETL Interface

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09:50	Yoni Tsadikov	Metal sulfide-oxide electrocatalysts with low overpotentials towards efficient OER
10:10 - 10:40	<b>Coffee Break: Stay online and chat with others in breakout rooms!</b>	
10:40 - 11:40	<b>HI-SCORE meeting</b>	
11:40 - 13:00	<b>Lunch Break: Stay online and chat with others in breakout rooms!</b>	
13:00 - 16:30	<b>Transferable Skills Sessions (only students)</b>	

## Transferable Skills Sessions

We will divide the students into two groups.

Time	Sessions for group 1	Time	Sessions for group 2
13:00 - 13:30	<b>Prof. Maya Schuldiner</b> (Department of Molecular Genetics at WIS, Israel) <i>Post-Doc Opportunities in Israel</i>	13:00 - 13:45	<b>Prof. David Cahen</b> (WIS & BIU, Israel) <i>Thoughts on Scientists in Society, in War &amp; Peace, their Egos &amp; Prizes and some...</i>
13:30 - 14:00	<b>Dr. Paul Harten</b> (Dept. for Technology Transfer, HZB) <i>Ingredients for a Successful Startup Company</i>	13:45 - 14:10	<b>PD Dr. Daniel Abou-Ras (HZB)</b> <i>Dealing with supervisors and how to be a good supervisor in the future</i>
14:00 - 14:30	<b>Dr. Nir Klein-Kedem</b> (formerly WIS, now: StoreDot, Israel) <i>Personal notes from moving from researcher to group leader in an R&amp;D based company</i>	14:10 - 14:30	<b>Hannah Funk (PhD-student, HZB)</b> <i>What a recent Leadership Course has taught me</i>
14:30-15:00	<b>Coffee Break</b>	14:30-15:00	<b>Coffee Break</b>

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	<b>Wrap up and Good bye.</b>		