

# Quantum Electron Optics

770. WE-Heraeus-Seminar

27 – 30 June 2022

at the Nahsholim Seaside resort, Israel

**WILHELM UND ELSE  
HERAEUS-STIFTUNG**



# Program

**Monday, 27 June 2022**

**Bus transfer to the venue:**

08:30 am	First pickup point: <i>Hayarkon Street 287, Tel Aviv, near Tal Hotel</i>
09:00 am	Second pickup point: <i>Gate no. 4, Tel Aviv University</i>
10:00 – 10:30	<b>Registration for the seminar</b>
10:30	Scientific organizers <b>Welcome words</b>
10:40	Jürgen Mlynek <b>Welcome words</b>
11:00	Stefan Jorda <b>About the Wilhelm and Else Heraeus-Foundation</b>
11:15 – 12:00	Nahid Talebi <b>Phase-locked photon-electron spectroscopy</b>
12:00 – 12:20	Osip Schwartz <b>Controlling electrons with CW lasers</b>
12:30	<i>LUNCH</i>

# Program

**Monday, 27 June 2022**

14:00 – 14:45	Wolfgang Schleich	<b>Quantum electron optics and analogies to atom optics</b>
14:45 – 15:30	Claus Ropers	<b>Interfacing photonics with electron microscopy</b>
15:30 – 16:30	<i>COFFEE BREAK and ROOM CHECK-IN</i>	
16:30 – 17:15	Javier Garcia de Abajo	<b>Quantum aspects of the interaction between free electrons, light, and photonic nanostructures</b>
17:15 – 17:35	Catherine Kealhofer	<b>Nanotip sources for time-resolved electron diffraction</b>
17:35 – 17:55	Iva Brezinova	<b>Exchange-mediated mutual correlations and dephasing in free-electron and light interactions</b>
18:00 – 19:00	Discussion time	
19:00	<i>DINNER</i>	

# Program

**Tuesday, 28 June 2022**

06:30 – 07:00	<i>Beach run/walk</i>	
07:30	<i>BREAKFAST</i>	
08:30 – 09:15	Ido Kaminer	<b>Quantum optics with free electrons</b>
09:15 – 09:35	Andrea Konečná	<b>Entangling free electrons and optical excitations</b>
09:35 – 09:55	Valerio Di Giulio	<b>Quantum optics and electron beams</b>
10:00 – 10:30	<i>COFFEE BREAK</i>	
10:30 – 11:15	Roy Shiloh	<b>Nanophotonic on-chip acceleration of free electrons</b>
11:15 – 11:35	Sophie Meuret	<b>Ultrafast electron microscopy with a parabolic mirror: Cathodoluminescence and PINEEM</b>
11:35 – 11:55	Yiming Pan	<b>PINEM synthetic dimensions using ultrafast free electrons</b>
11:55 – 12:00	Group photo	
12:30	<i>LUNCH</i>	

# Program

**Tuesday, 28 June 2022**

13:30 – 15:00	<b>Poster flashes</b>	
15:00 – 15:30	<i>COFFEE BREAK</i>	
15:30 – 16:15	Rafal Dunin-Borkowski	<b>Opportunities for studies of electron-light-matter interactions in the transmission electron microscope</b>
16:15 – 17:00	Jacob Scheuer	<b>Enhanced light-electron interactions via plasmonic metasurfaces</b>
17:00 – 19:00	<b>Visit Tel Dor and Glazier Museum</b>	
19:00	<i>DINNER</i>	
20:00	<b>Poster session</b> with beer and wine	

# Program

Wednesday, 29 June 2022

06:30 – 07:00	<i>Beach run/walk</i>	
07:30	<i>BREAKFAST</i>	
08:30 – 08:45	<b>Poster prize announcement</b>	
08:45 – 09:30	Mathieu Kociak	<b>Deciphering the fate of optical excitations with photons and electrons</b>
09:30 – 10:15	Avraham Gover	<b>Quantum electron-optics</b>
10:15 – 10:45	<i>COFFEE BREAK</i>	
10:45 – 11:30	Nirit Dudovich	<b>Attosecond interferometry</b>
11:30 – 11:50	Aviv Karnieli	<b>Quantum sensing of strongly coupled light-matter systems using free electrons</b>
11:50 – 12:10	Yonatan Israel	<b>Multi-pass and quantum limits to electron microscopy</b>
12:30	<i>LUNCH</i>	
14:00 – 14:45	Ebrahim Karimi	<b>Structured quantum waves: Concepts and applications.</b>
14:45 – 17:00	<b>Discussion time</b>	
18:00	<i>Bus transfer to a restaurant Caesarea</i>	
	<i>HERAEUS DINNER in Caesarea Port followed by a night tour in Caesarea</i>	

# Program

Thursday, 20 June 2022

06:30 – 07:00	<i>Beach run/walk</i>	
07:30	<i>BREAKFAST</i>	
08:30 – 09:15	Martin Kozák	<b>Optical ponderomotive control of free electrons – from inelastic scattering to quantum coherent interactions</b>
09:15 – 10:00	Peter Baum	<b>Attosecond electron microscopy and free-electron qubits</b>
10:00 – 10:30	<i>COFFEE BREAK</i>	
10:30 – 10:50	Freyja Ullinger	<b>The logarithmic phase singularity in the inverted harmonic oscillator</b>
10:50 – 11:10	Marius Constantin Chirita Mihaila	<b>Electron beam shaping with light</b>
11:10 – 11:20	<b>Poster prize winner talk</b>	
11:20 – 11:30	<b>Poster prize winner talk</b>	
11:30 – 11:40	<b>Poster prize winner talk</b>	
12:30	<i>LUNCH</i>	
	End of the seminar and departure	
14:00	<b>Bus transfer to Tel Aviv</b>	

Dinner will not be served on Thursday