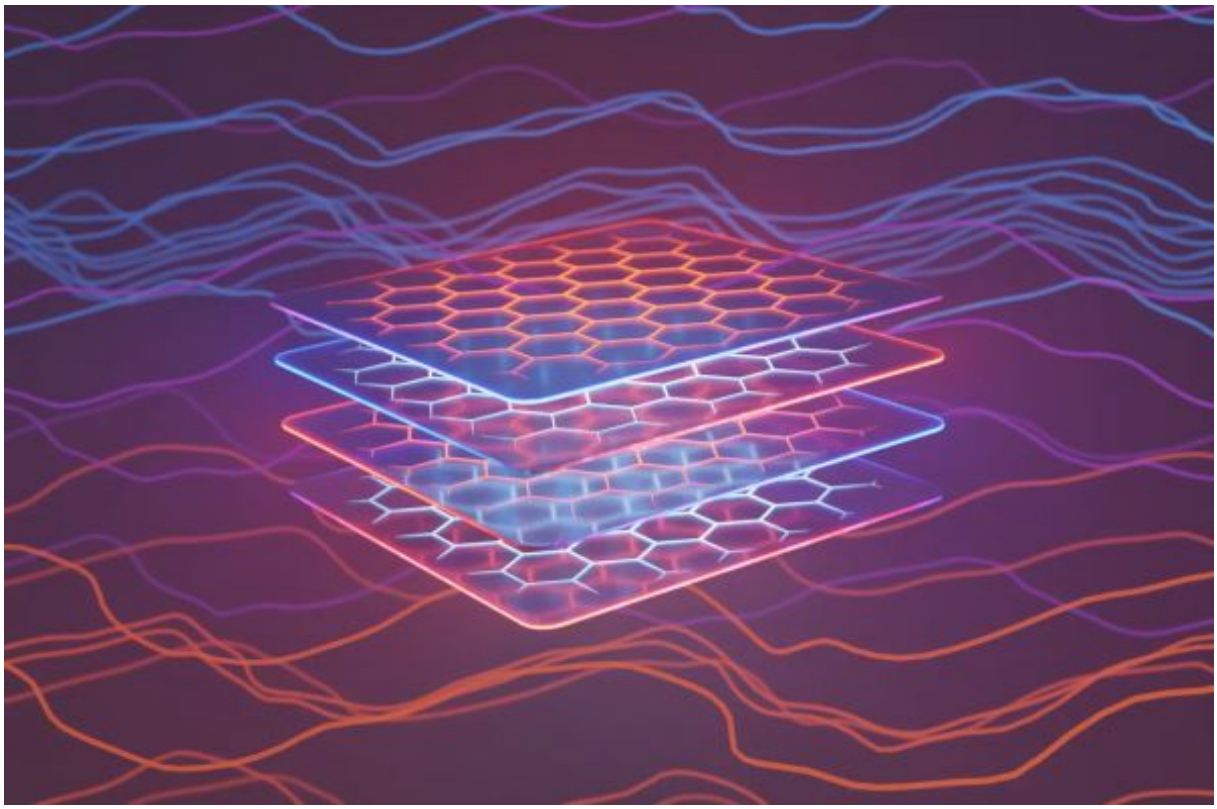


Symposium News from the vdW world

May 16, 2025
ICFO Auditorium

This workshop brings together leading experts in quantum materials and condensed matter physics to discuss emergent phenomena in low-dimensional systems. The event highlights advanced spectroscopic, scanning-probe, nano-mechanical, and nano-optical measurement techniques. These experimental approaches demonstrate their synergy with cutting-edge theoretical perspectives that focus on electron interactions, nano-optical properties, topological order, materials QED, and correlated phases. Through interactive sessions, attendees will explore and discuss groundbreaking advancements in this field, setting the stage for next-generation electronic and photonic technologies.

Invited Lecturers:

Adrian Bachtold, ICFO

ICFO

Carmen Rubio-Verdu, ICFO
Dmitri Basov, Columbia University
Kin Fai Mak, Cornell University
Laura Classen, Max Planck Institute
Marco Polini, University of Pisa
Nurit Avraham, Weizmann Institute of Science
Yuval Oreg, Weizmann Institute of Science

Program:
09:30 Registration

10:00 Intro remarks by organizers: **Frank Koppens (ICFO), Pablo Jarillo-Herrero (MIT), Ady Stern (Weizmann Institute of Science)**

10:10 LECTURE, with **Carmen Rubio-Verdu, ICFO**

10:45 LECTURE, with **Dmitri Basov, Columbia University**

11:20 Coffee Break

11:50 LECTURE, with **Laura Classen, Max Planck Institute**

12:25 LECTURE, with **Nurit Avraham, Weizmann Institute of Science**

13:00 Lunch and discussions

14:30 LECTURE, with **Adrian Bachtold, ICFO**

15:05 LECTURE, with **Yuval Oreg, Weizmann Institute of Science**

15:45 Coffee Break with Poster Session

17:15 LECTURE, with **Marco Polini, University of Pisa**

17:50 LECTURE, with **Kin Fai Mak, Cornell University**

18:30 Closure

Catering provided by ICFO

Organizers:

Frank Koppens, ICFO
Pablo Jarillo-Herrero, MIT
Ady Stern, Weizmann Institute

Participating institutions:

ICFO - the Institute of Photonic Sciences, is a young research institution that aims to advance the very limits of the science and technology of light, tackling important challenges faced by society at large in all areas of life, including health, energy, information, safety, security and caring for the environment. ICFO is a member of BIST, the Barcelona Institute of Science and Technology. More information about ICFO can be found here.

MIT - The Massachusetts Institute of Technology (MIT), founded in 1861, is a world-renowned research university located in Cambridge, Massachusetts. Known for its excellence in science, technology, engineering, and mathematics, MIT fosters innovation and groundbreaking research. The Department of Physics at MIT is one of the leading physics departments globally, renowned for its groundbreaking research in areas such as quantum mechanics, astrophysics, and condensed matter physics. It consistently pushes the boundaries of fundamental science and technology.

Weizmann Institute of Science - the Weizmann Institute of Science is one of the world' leading multidisciplinary basic research institutions in the natural and exact sciences AMOS@Weizmann is a center for quantum physics with atomic, molecular, and optica systems. The center includes 18 research groups and activities ranging across mos contemporary topics in AMO physics - from attosecond pulses and intense lasers, throug precision spectroscopy of ultracold atoms, molecules or ions, to quantum information an quantum optics. More information about Weizmann and AMOS can behere and here.

Columbia University - Founded in 1754, is a prestigious Ivy League institution located in Ne York City. Known for its academic rigor, it offers a wide range of disciplines and ranks amon the world's top universities. The university is also a leader in research, particularly in field like humanities, science, and social sciences. TheDepartment of Physics at Columbi University is renowned for its cutting-edge research in areas such as condensed matte physics, cosmology, and particle physics. It is home to world-class faculty and has mad

significant contributions to both theoretical and experimental physics.

Max Planck Society - MPG, founded in 1948, is a leading German research organization dedicated to advancing scientific knowledge in various fields, including natural sciences, life sciences, and social sciences. It consists of over 80 institutes across Germany and is renowned for its pioneering research. MPG scientists are often at the forefront of discovery, making significant contributions to areas like quantum physics, neuroscience, and climate change.

University of Pisa - Founded in 1343, it is one of Italy's oldest and most prestigiou universities. Located in Pisa, Tuscany, it offers a wide range of programs across variou disciplines, with a strong focus on research and innovation. The university is renowned for it contributions to science, particularly in physics, engineering, and computer science. Mor detailshere.