



## Ido Kaminer – Short BIO

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Ido is an Associate Professor at the Technion. In his Ph.D. research, Ido discovered new classes of accelerating beams in nonlinear optics and electromagnetism, for which he received the 2014 American Physical Society (APS) Award for Outstanding Doctoral Dissertation in Laser Science. Ido was the first Israeli ever to win an APS award for his Ph.D. thesis. As a postdoc at MIT, he established the foundations of macroscopic quantum electrodynamics (MQED) for photonic quasiparticles and used it to find a way to enable forbidden electronic transitions in atoms. As a faculty member, Ido created a paradigm shift in the understanding of free-electron radiation, connecting it to the field of quantum optics. He performed the first experiment on free-electron interaction with quantum light, demonstrating that the quantum statistics of photons can be imprinted on the electron. Ido has won multiple awards and grants, including the ERC Starting Grant, the Krill Prize, and the **2022 Schmidt Science Polymath Award**. Ido is the laureate of the **2021 Blavatnik Award** in Physical Sciences & Engineering in Israel, the **2022 Adolph Lomb Medal**, the top international award for a young scientist (age 35 or younger) in the field of optics, and the **2024 ACS Photonics Young Investigator Award**. For his achievements as a faculty member, Ido was elected to the Israeli Young Academy, a nonprofit organization dedicated to addressing essential national and international issues by advancing young researchers and scientists from a wide variety of academic disciplines.

**Research Interests:** Ido is a physicist and electrical engineer who studies the frontiers of photonics, quantum optics, and laser-driven electron acceleration, by developing novel theoretical and experimental methods. He is head of the AdQuanta Lab at the Technion, whose research established the foundations of quantum electrodynamics with photonic quasiparticles. His discoveries predict new phenomena that arise from engineering the wavefunctions of matter and of photons in specific ways that yield physical situations not encountered in natural settings. Ido's lab employs femtosecond lasers in transmission electron microscopes for new kinds of experiments – they developed a unique microscope that combines record resolution in space & time. Their work on light–matter interactions in nanophotonics and 2D materials is leading to disruptive applications for novel light sources (e.g., X-ray sources for spectroscopy) and ultrafast detectors (e.g., scintillators for medical imaging).