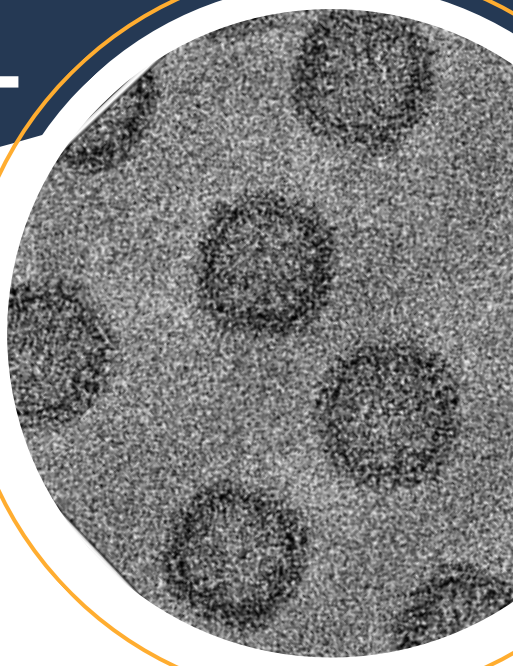
WEIZMANN INSTITUTE OF SCIENCE

ThermoFisher SCIENTIFIC

JOINT POSTDOCTORAL POSITION



Simulated images of a protein (apoferritin) revealed by the laser phase plate

Laser-enhanced transmission electron microscopy

Transmission Electron Microscopy (TEM) has revolutionized structural biology by revealing the 3D structures of biological macromolecules. In this project at the intersection of quantum physics and life sciences, we further expand the capabilities of biological TEM by increasing its signal-to-noise ratio. To this end, we control the wave function of free-space electrons inside a TEM using high-power lasers.

This 2-year postdoctoral/Scientist II position is at the center of the science-industry collaboration between WIS and Thermo Fisher, a leading TEM manufacturer, with time split 50/50 between the two locations.

Thermo Fisher Scientific (Eindhoven, The Netherlands)
The Operational TEM Technologies group in Eindhoven is one of the technology pillars of Advanced Technologies, the global Research organization for Materials and Structural Analysis Division (MSD) of Thermo Fisher. This group is responsible for proof of principle and proof of concept of new high-tech innovations in, and around, electron microscopy (EM).

Thermo Fisher – Weizmann Institute collaboration
An exciting new collaboration is a novel development project together with the Weizmann Institute of Science (WIS), one of the world's leading multidisciplinary basic research institutions in the natural and exact sciences in Israel. The collaboration started in March 2024 with the research group of Dr. Schwartz at WIS. His group is situated in the Free Electron Lab in the department of Physics of Complex systems and the general research theme is the interaction of free-space electron waves with light. The objective of this collaboration is to advance the development and commercialization of laser-based devices for TEM. The focus will be on the further development of a laser-based phase plate (LPP), which is expected to play a pivotal role in cryo electron microscopy (cryoEM) by drastically improving image contrast. Such contrast improvement is needed to visualize fragile biomolecules at high resolution.

Further information

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