Prof. Nirit Dudovich
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Nirit Dudovich is an associate professor at the Department of Physics of Complex Systems at the Weizmann institute. She completed her PhD in 2004, focusing on studying quantum coherent control in nonlinear optics. In 2004 she received the Rothschild Fellowship for postdoctoral studies and joined the group Prof. Paul Corkum. In 2007 she joined the Weizmann Institute of Science and established a research group for attosecond science in Israel. Nirit Dudovich received the Alon award (2008), the IUPAP Young Scientist Prize (2012), the IPS Prize for Young Physicist (2012), and the Krill prize for excellence in scientific research (2013). In 2013 she received the ERC Starting investigator grant. Nirit is married to Boaz and a mother of three – Tomer, Tal and Yarden.

Prof. Dudovich works on generating and applying ultra-short pulses of laser-produced light to probe extremely fast processes in nature, atoms, and molecules. Using these light bursts, she hopes to capture snapshots of phenomena never before observed—electron dynamics in atomic and molecular systems, which are at the heart of chemical and physical reaction. Light has always been a tool for scientific investigation, and a better understanding of light, and manipulating light, could have an impact on a variety of scientific fields.

Publications:

1. N. Dudovich, D. Oron and Y. Silberberg, “Single-Pulse Coherently-Controlled Nonlinear Raman Spectroscopy and Microscopy”, Nature 418, 512 (2002).

2. N. Dudovich, O. Smirnova, J. Levesque, M. Yu. Ivanov, D. M. Villeneuve, P. B. Corkum “Measuring and controlling the birth of attosecond pulses”, Nature Physics 2, 781 (2006).

3. D. Shafir, Y. Mairesse, D. M. Villeneuve, P. B. Corkum, and N. Dudovich, "Atomic wavefunctions probed through strong-field light–matter interaction", Nature Physics 5, 412 (2009).

4. D. Shafir, H. Soifer, B. D. Bruner, M. Dagan, Y. Mairesse, S. Patchkovskii, M. Yu. Ivanov, O. Smirnova and N. Dudovich, "Resolving the time when an electron exits a tunneling barrier, Nature 485, 343 (2012). Also see News and Views: M. Lein, "Electrons get real", Nature 485, 313 (2012).

5. O. Raz, O. Pedatzur, B. D. Bruner and N. Dudovich,"Spectral Caustics in Attosecond Science", Nature Photonics 6, 170 (2012). Also see News and Views: E. Goulielmakis "Attosecond photonics: Extreme ultraviolet catastrophes", Nature Photonics 6, 142 (2012).