

Colloquium: July 11th, 2 pm at Max-Born-Hall

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PROBING ULTRAFAST ELECTRON AND SPIN DYNAMICS IN MOMENTUM,
SPACE, AND TIME

Optically excited (hot) electrons play a crucial role for many fundamental chemical and physical phenomena occurring at surfaces, interfaces, and in bulk materials. They, for instance, determine the properties of photo-induced catalysis at surfaces, and the efficiency of charge and spin transfer across interfaces between different materials. For the investigation of such processes, time-resolved photoelectron spectroscopy did turn out to be a very powerful tool through its direct access to transient band-structure dynamics. In particular, very recent progresses in the development of ultrashort pulsed light sources and electron spectrometers have paved the way for a completely new generation of real-time photoemission techniques.

The review concludes with an outlook to the feasibility of future real-time studies in surface and material science.