



Hybrid Inorganic/Organic Systems
for Opto-Electronics

Collaborative Research Centre 951



Special Colloquium Announcement

of the Collaborative Research Centre 951

“Hybrid Inorganic/Organic Systems for Opto-Electronics”

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Ultrafast two-dimensional electronic spectroscopy of photovoltaic materials

Time: Friday, May 10, 2019, **10 a.m., c.t.**

Place: IRIS Adlershof, Zum Großen Windkanal 6,
Room 007 (ground floor).



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Ultrafast two-dimensional electronic spectroscopy of photovoltaic materials

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Light-induced energy and charge transfer in nanomaterials are fundamental for many biological processes as well as highly relevant for artificial devices, such as e.g., solar cells. It is well-known that such processes typically take place on extremely short, femtosecond timescales. Yet at present, the microscopic mechanisms underlying the energy conversion, in particular the relevance of coherent dynamics, are still a matter of debate. Here we will show a few examples of how ultrafast two-dimensional electronic spectroscopy can provide detailed new insight into the first steps of the light-initiated dynamics in technologically-relevant materials. Specifically, we will discuss (i) the role of strongly coupled electronic and nuclear motion and, in particular, the possible role of conical intersections for intermolecular charge transfer dynamics in organics and (ii) the interplay between excitons and charge carriers on an ultrafast, <30 -fs timescale in halide perovskite single crystals.