Universität Bielefeld Fakultät für Physik

Physikalisches Kolloquium

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Ultrafast coupling of light with quantum emitters

The modification of light-matter interaction by metal nanostructures has gained a considerable attention across a broad range of topics. Our interests focus on the interrogation of single quantum emitters, where we have shown that huge enhancements of the spontaneous emission rate can coexist with large quantum efficiencies. This makes such hybrid systems appealing for exploring ultrafast quantum phenomena on the nanoscale and for developing quantum technologies. We discuss configurations that strongly increase light-matter interaction and address quantum coherence and nonlinear optical processes that occur despite the existence of large dephasing rates. Next, we propose approaches that combine these findings with ultrafast techniques in order to enable the investigation of short-lived coherence and quantum effects in nanoscopic systems under ambient conditions

Montag, 04.11.2019, 16:15 Uhr
Ort: Hörsaal 6