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Nichtgleichgewichtsdynamik kondensierter
Materie in der Zeitdomäne

UNIVERSITÄT
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ESSEN

Open-Minded

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Molecular polaritonics: Using cavities to modify material properties

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When the interaction of material excitations with confined light modes reaches the so-called strong coupling regime, they hybridize to form mixed light-matter eigenstates. These polaritons inherit properties of both light and matter excitations and also display fundamentally new phenomena, opening a rich playground for novel functionalities. Organic molecules are particularly interesting matter components due to their large dipole moments and stability at room temperature. I will discuss several applications both in wavelength-scale cavities where polaritons are delocalized states involving macroscopic numbers of molecules, and in subwavelength cavities where extreme light confinement enables strong coupling at the few-molecule level. For such systems, I will also discuss how to connect nanophotonics and quantum optics, i.e., how to correctly map the optical response of complex nanophotonic structures to simple quantum optical models with a few modes.

Für diese Zeit steht eine Kinderbetreuung nach vorheriger Anmeldung zur Verfügung.

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