

# **Light-Driven Chemistry in Optical Microcavities**

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Optical microcavities offer a powerful platform for manipulating molecular behavior at the mesoscale. These resonators utilize highly reflective mirrors to concentrate electromagnetic fields, enabling strong light-matter interactions that can significantly influence the reactivity, conductivity, and thermodynamic properties of molecular systems. This talk will present our recent findings on molecular excited-state energy transport and chemical reactivity within microcavities. We will discuss mechanistic insights gained from our theoretical studies and draw connections to recent experimental observations. Our findings reveal design principles for light-matter systems with potential applications in devices with enhanced capabilities for energy harvesting, transport and conversion.