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【564】Cavity Exciton-Polariton Condensates in Engineered Potential Landscapes at Room Temperature

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We create exciton-polariton condensates in engineered potential landscapes at room temperature by optically exciting a ladder-type conjugated polymer placed inside a tunable optical microcavity. In the upper mirror of the cavity we define multiple in-plane structures (from single defects to lattices). By exciting the system above threshold, we observe polariton condensation. Condensation features such as non-linear emission and linewidth narrowing are shown. Energy dispersions in k-space as well as temporal and spatial coherence are studied for different states by detuning the cavity. Our results represent a step towards the realization of a polariton simulator at ambient conditions.

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