

Supplementary material: Polariton condensation in S - and P -flatbands in a two-dimensional Lieb lattice

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S. Klembt,^{1, a)} T. Harder¹, O. Egorov¹, K. Winkler¹, H. Suchomel¹, J. Beyerlein¹, M. Emmerling¹, C. Schneider^{1, 1, 2} and S. Höfling^{1, 2}

¹⁾ *Technische Physik and Wilhelm-Conrad-Röntgen Research Center for Complex Material Systems, Universität Würzburg, Am Hubland, D-97074 Würzburg, Germany.*

²⁾ *SUPA, School of Physics and Astronomy, University of St Andrews, St Andrews KY16 9SS, United Kingdom*

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^{a)} Electronic mail: sebastian.klembt@physik.uni-wuerzburg.de

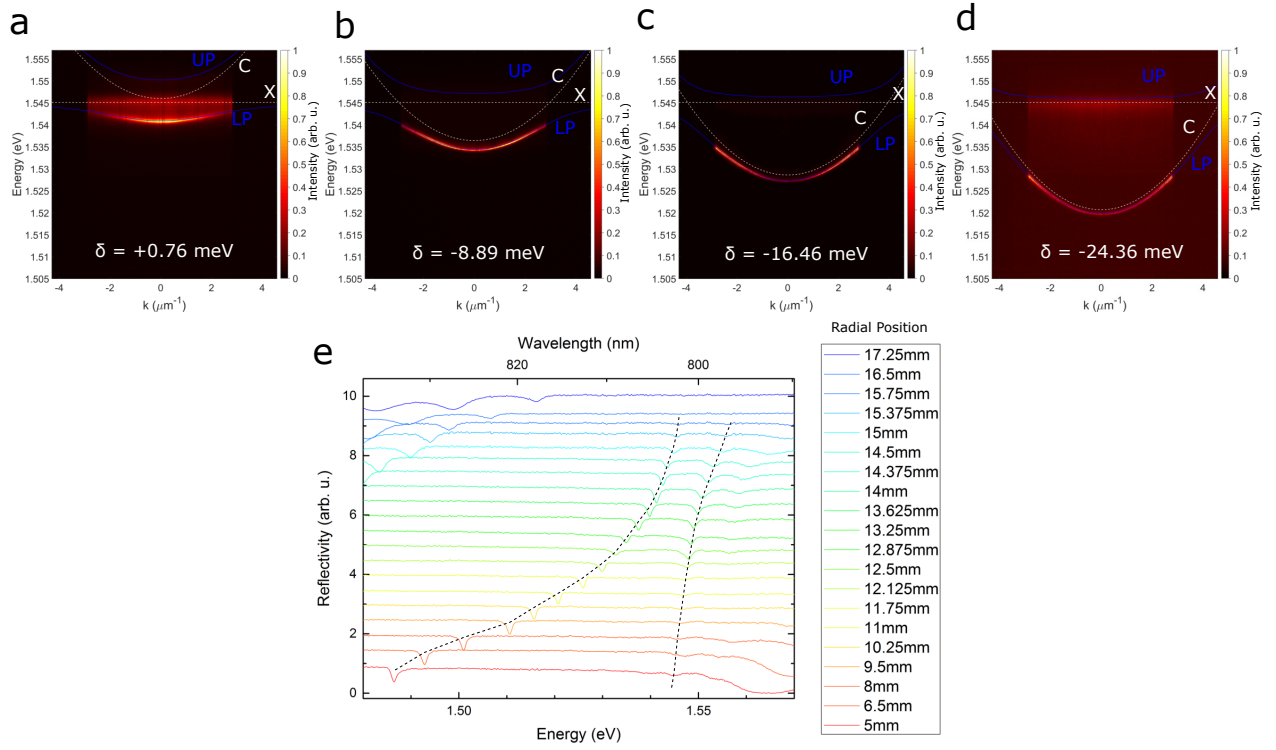


Figure S1. (a)-(d) Photoluminescence measurement showing the lower polariton branch on the planar microcavity sample for increasingly negative detuning (a) $\delta = +0.76$ meV, (b) $\delta = -8.89$ meV, (c) $\delta = -16.46$ meV, and (d) $\delta = -24.36$ meV, respectively. The lower polariton branch shows the typical decrease of effective mass, due to an increasing photonic fraction. (e) White light reflectivity measurements as a function of radial position (detuning). Upper and lower polariton show the typical anti-crossing behavior with a Rabi splitting of $2\hbar\Omega_R = 9.5$ meV.

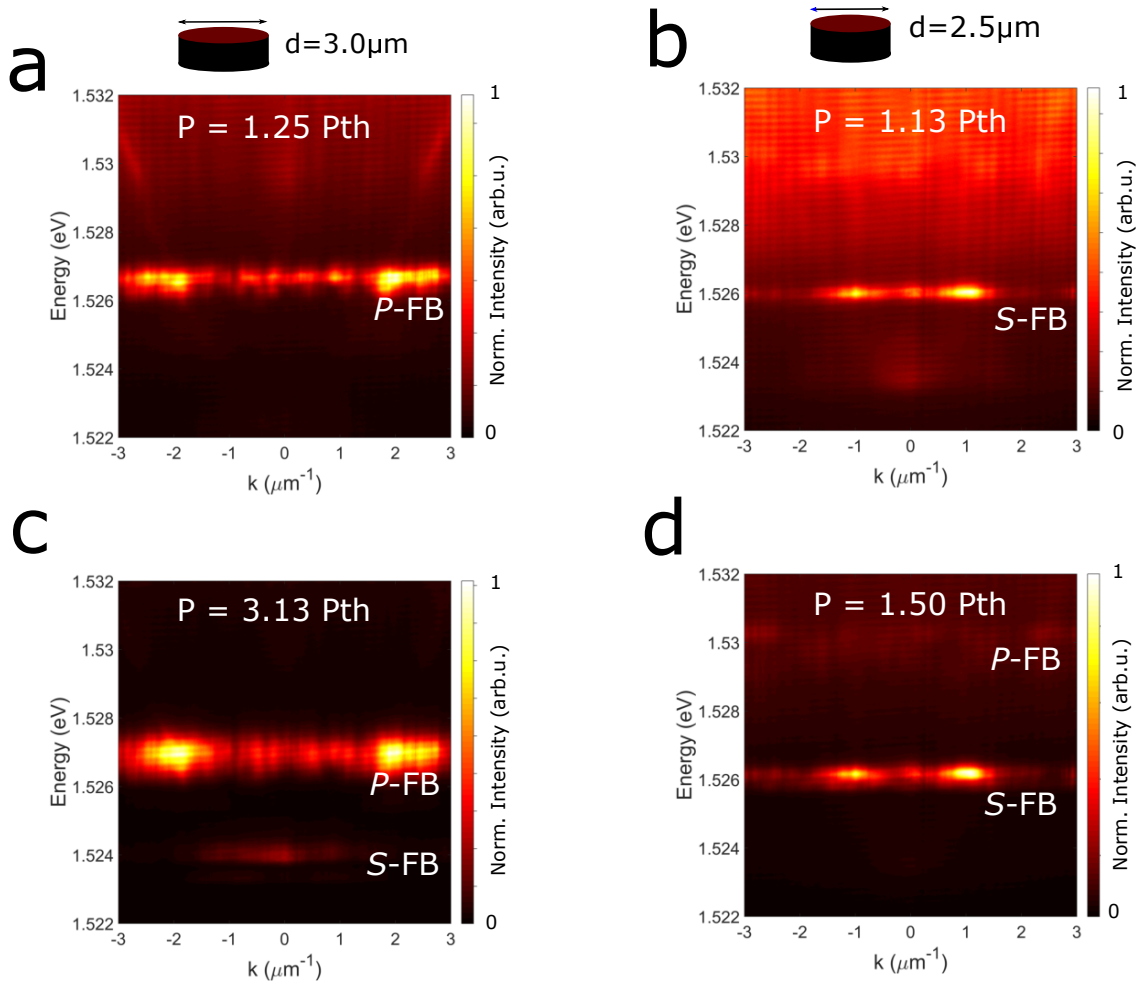


Figure S2. (a), (c) P -flatband dispersion for the lattice with diameter $d=3.0\ \mu\text{m}$ at an excitation power of $1.25\ P_{th}$. At around $3.13\ P_{th}$ a weak signature of a S -flatband becomes visible. (b), (d) S -flatband dispersion for the lattice with diameter $d=2.5\ \mu\text{m}$ at an excitation power of $1.13\ P_{th}$. At around $1.50\ P_{th}$ a weak signature of a P -flatband becomes visible.