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## **Supplementary information**

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# **Excitons bound by photon exchange**

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# Excitons bound by photon exchange: Supplementary Information

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## DATA ON THE REFERENCE SAMPLE

We have fabricated samples containing an identical, albeit non intentionally doped, active region. This permits to precisely determine the cavity modes of the cold cavity. The measurements are presented below (Fig. 1)

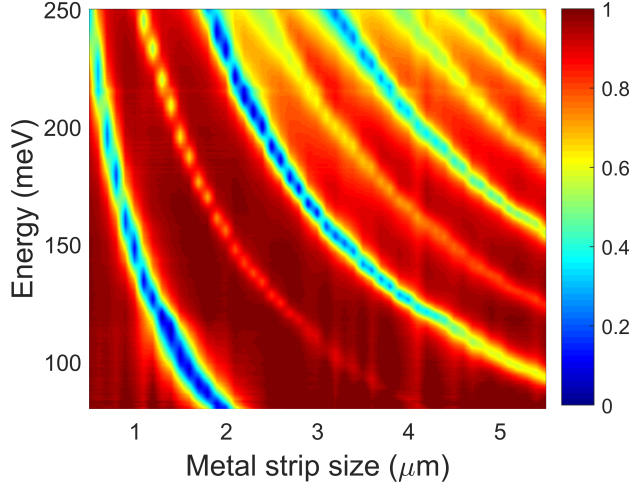


FIG. 1: Experimental micro-reflectivity ( $T=78K$ ) of the reference sample as a function of the metal strip size. The measurement is performed at an incidence angle close to the normal. For this reason, the  $TM_{0(2n-1)}$  modes ( $n \in \mathbb{N}$ ) are not very visible, as they do not couple to radiation at normal incidence. We operate on the  $TM_{02}$  mode.

## DATA ON SAMPLE HM4229

We present here the 78K reflectivity data on sample HM4229 (Fig. 2), the same one presented in the text of the paper. However, the data are reported here as a

function of the metal strip size.

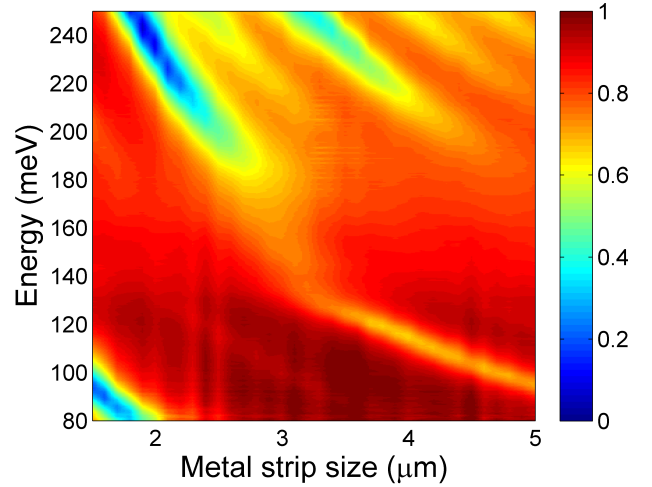


FIG. 2: Experimental micro-reflectivity ( $T=78K$ ) of sample HM4229 as a function of the metal strip size. The measurement is performed at an incidence angle close to the normal. The anticrossing with the  $TM_{02}$  mode takes place around a metal strip size of  $3 \mu m$ .

## DATA ON SAMPLE HM4230

We present here the 78K reflectivity data on sample HM4230 (Fig. 3). The data are reported as a function of the metal strip size. These data confirm the conclusions derived in the main body of the paper from the analysis of sample HM4229.

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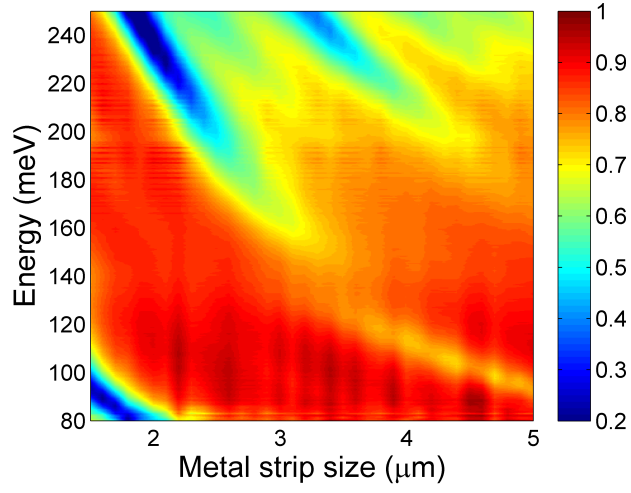


FIG. 3: Experimental micro-reflectivity ( $T=78\text{K}$ ) of sample HM4230 as a function of the metal stripe size. The measurement is performed at an incidence angle close to the normal. The anticrossing with the  $\text{TM}_{02}$  mode takes place around a metal strip size of 3  $\mu\text{m}$ .