**Supporting Information**

# Anticrossing Behavior in Nanolayered Heterostructures Caused by Coupling between a Planar Waveguide Mode in an Anthracene Single Crystal and a Silver Surface Plasmon Polariton Mode: Implications for Attenuated Total Reflection Spectroscopy

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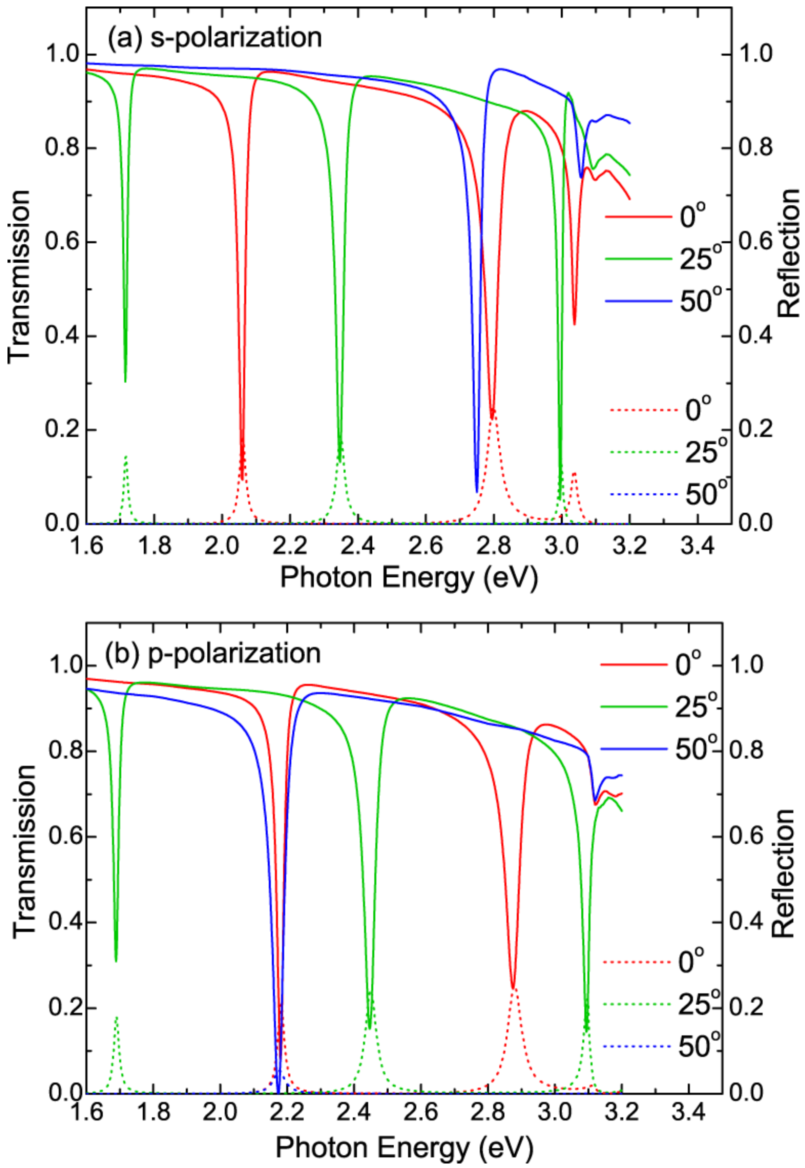


**Figure S1**. **(**a) and (b) show the calculated angle-resolved transmission spectra and reflection spectra. The s- and p-polarized spectra when the incident angles are 0, 25, and 50° are shown in **Figure S1**a and b, respectively. The solid and the dotted curves are the reflection and the transmission spectra. As shown in **Figure S1**, in the energy region below the exciton resonance (~ 3.1 eV) of the anthracene crystal, the peak energy of the transmission spectrum and the dip energy of the reflection spectrum coincide each other. For the s-polarized spectra, there is no transmission peak at the energy position of the reflection dip appearing for 50°. This is because in the case of s-polarized spectrum, transmitted light does not couple on the larger wavenumber than the air light line.

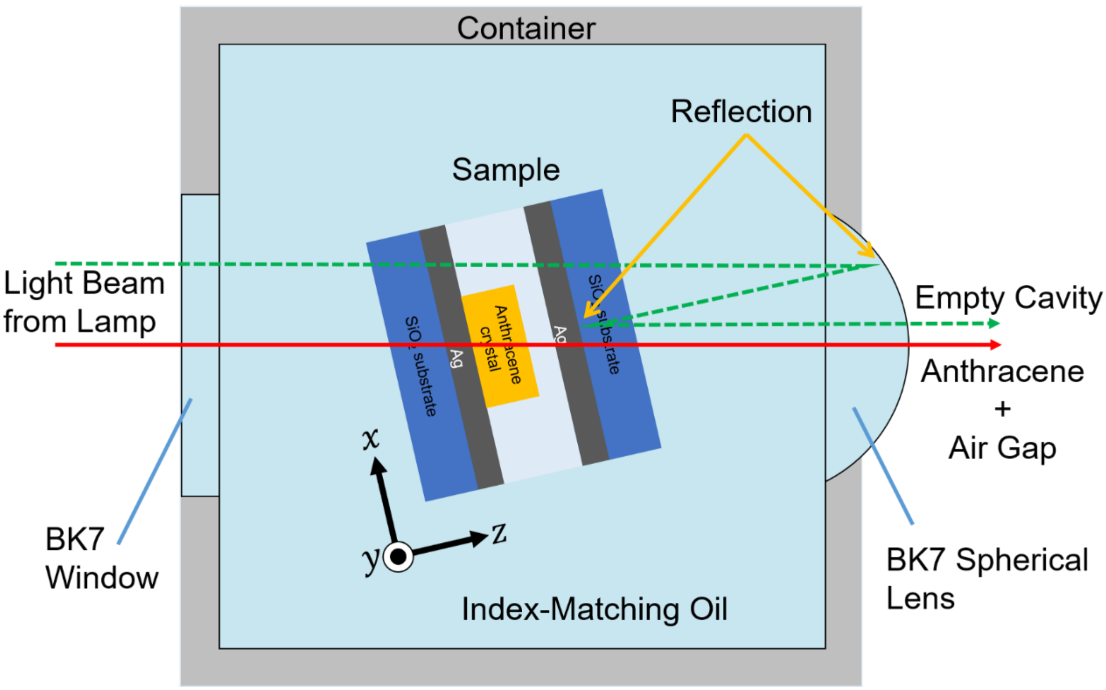


**Figure S2**. Multiple reflection of the light beam from the Xe lamp through the sample in the container with the BK7 spherical lens functioning as an optical window. The solid red line shows the path of the light beam that passes directly through the anthracene crystal. The green dashed line shows the path of light transmitted through the empty cavity near the anthracene crystal. A part of the light beam passing through the empty cavity is reflected by the BK7 spherical lens and the Ag surface of the sample, so that the light path is shifted. The peaks due to the empty cavity shown in **Figure 3** are observed on the spectra by overlapping the multiple reflected light beam with the light beam passing directly through the anthracene crystal.