

Figure 1. Si shadow masks (cross-sectional view): (a) 200  $\mu\text{m}$  mask, (b) 500  $\mu\text{m}$  mask; (c) Simplified sketch of MBE growth chamber displaying orientation of shadow mask in contact with substrate (cross-sectional view) during in-plane GPM synthesis process (reproduced from<sup>3</sup>); (d) 2D orientation of substrate with respect to the elemental cells during in-plane GPM synthesis process (top view).

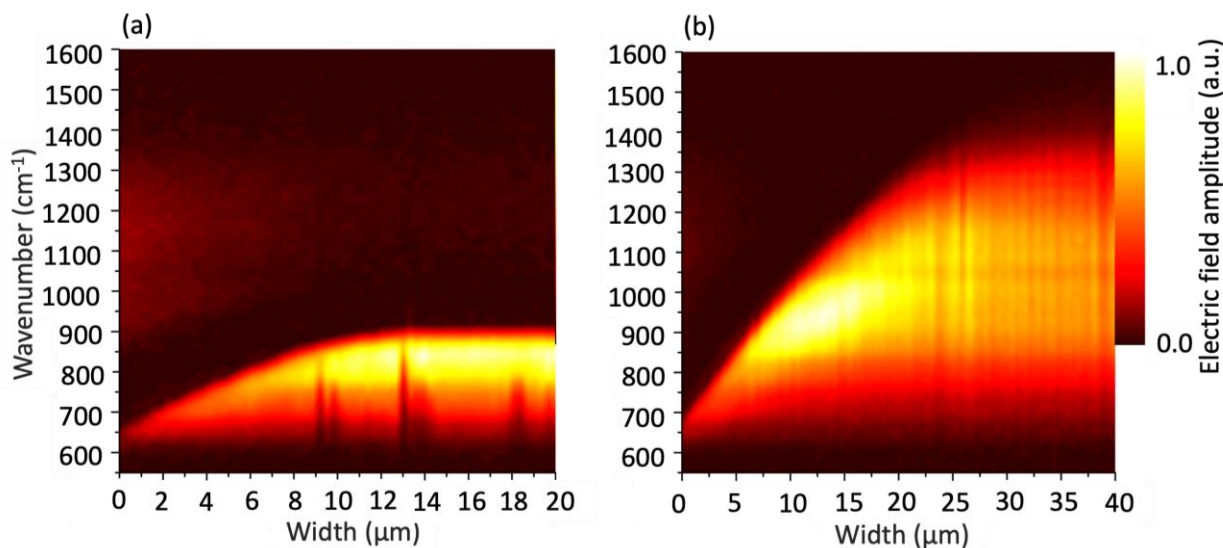


Figure 2. Nano-FTIR spectra obtained by scattering-type scanning near-field optical microscopy (s-SNOM) using a mid-IR nano-FTIR module ( $\sim 650\text{ cm}^{-1} - 1400\text{ cm}^{-1}$ ), illustrating the GPMs are localizing and enhancing different infrared light wavelengths: (a) GPM synthesized with 200  $\mu\text{m}$  mask. Wavelength-dependent light enhancement is observed and indicated by the gradient in wavenumber ( $\sim 650\text{ cm}^{-1}$  to  $900\text{ cm}^{-1}$ ) with respect to the GPM width of  $\sim 13\text{ }\mu\text{m}$ . (b) GPM synthesized with 500  $\mu\text{m}$  mask. Wavelength-dependent light enhancement is observed and indicated by the gradient in wavenumber ( $\sim 650\text{ cm}^{-1}$  to  $1450\text{ cm}^{-1}$ ) with respect to the GPM width of  $\sim 30\text{ }\mu\text{m}$ .