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Supporint information figures for Coupling of molecular vibration and metasurface modes for efficient mid-infrared emission

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Supporting information

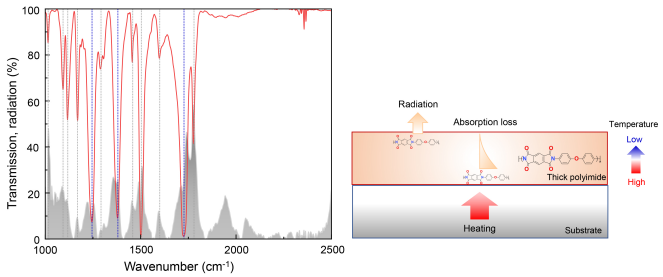

Figure S1.Transmission(red-line) and thermal radiation (shaded-profile) of a 3 μm thick polyimide film.

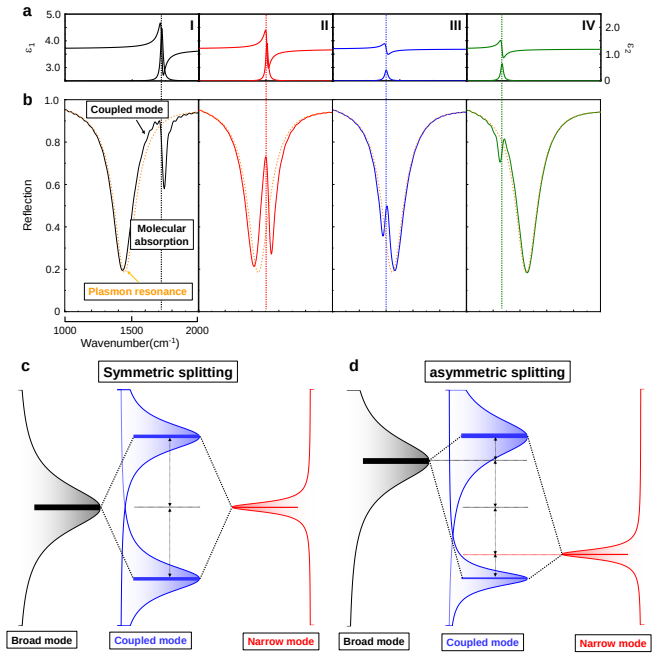

Figure S2.a The model of single Lorenz mode. b The resonance behaviour of plasmon mode and single Lorenz peak. c,d Qualitative model of symmetric/asymmetric coupling mode.

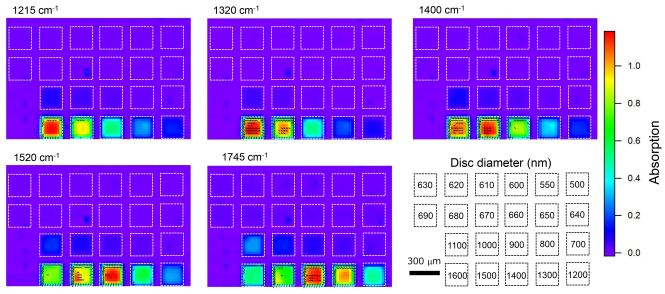

Figure S3. The reflection spectra at four orientations of the linear polarisation $(0, \pi/4, \pi/2, 3\pi/4)$ and chemical mapping at selected peaks (I-V). The color map represents the amplitude Amp and the black lines are the orientation angle θ_{orient} of the best fit $\propto Amp \times \cos 2(\theta - \theta_{orient})$. Polyimide prepared by vapor deposition polymerization was the insulator layer of MIM structure; thickness was 60 nm determined by ellipsometry. A square has pattern of triangular lattice of nanodisks of diameter D and period $\Lambda = 1.5D$ with D values shown in the sample schematics (right-bottom corner). The orientation at the angle $\theta_O = 0^\circ$ is aligned with x-axis (horizontal). The length of the orientation line is proportional to the amplitude of the fit Amp.