

Figure S1. SEM images of PS bead monolayers acquired at the top (a) and bottom (b) end of a tilted (10°) glass substrate after drying of an aqueous dispersion of PS beads.



Figure S2. Tilted SEM images (25°) of the quasi-3D metallo-dielectric arrays shown in Figure 3.



Figure S3. EDAX composition analysis for honeycomb structures formed in the low microsphere packing density. The spectra were acquired at the centre of the PS bead (**A**), at the same location after removal of the etched PS bead (**B**), and at the location of the "honeycomb" wall in the area between the beads (**C**). Spectrum A shows the etched PS beads are mostly carbon, spectrum B shows strong oxygen and silicon, consistent with the composition of the glass substrate, and spectrum C confirms that the honeycomb wall consists mostly of carbons. We attribute the fluorine in the EDAX spectra to RIE residues from RIE

gases (CF₄ and CHF₃), sodium to a by-product deposited during sample handling, and Au to the evaporated Au films (D = 40 nm). Scale bars in SEM images are 1 µm.