Electronic Supplementary Material (ESI) for RSC Advances.

Ordered Growth of Metal Oxides in Patterned Multi-Angle Microstructures

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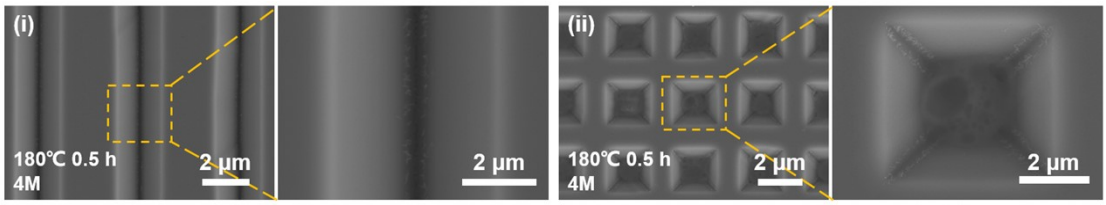

Fig. S1 (i) The morphology of TiO_2 nanostructure on linear template substrate (reaction concentration: 4 M). (ii) SEM image of the TiO_2 nanostructures on inverted-pyramid arrays substrate (reaction concentration: 4 M). Scale bars: 2 μm.

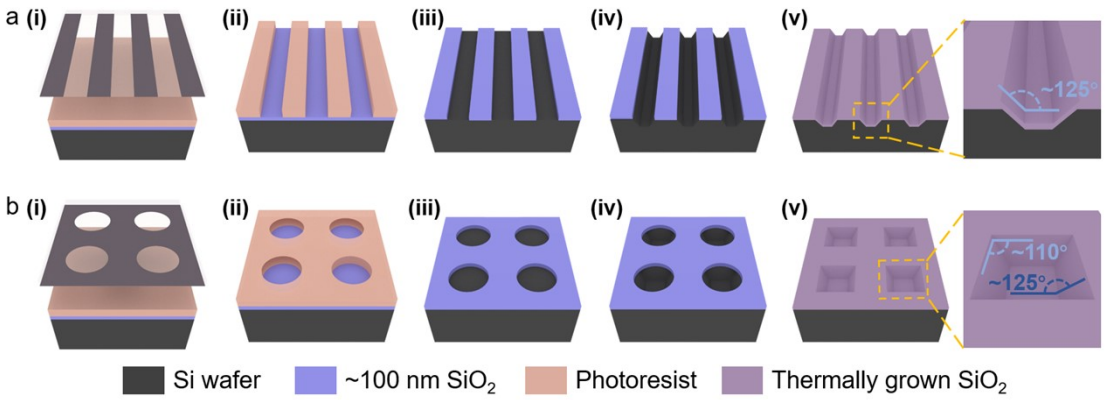

Fig. S2 The schematic details the different substrate templates developed using the traditional top-down approach. (a) The linear composite template. (b) The toroidal composite template. (i) Transferring the pattern from the mask to the photoresist on the silicon substrate by UV light using photolithography. (ii) After development, patterned photoresist is formed on the silicon substrate. (iii) The exposed silicon dioxide film is etched through dry etching method. (iv) After a period of wet-etching in a hot alkaline solution, nanostructures are produced on the surface of the silicon wafer. (v) The substrate surface is cleaned and then calcined in a muffle furnace to form a SiO_2-Si template.