

## Programmable Fabrication of Sub-micron Bent Pillar Structures by Adopting Photo-responsive Azopolymer

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Anisotropic small structures found throughout living nature have unique functionalities as exemplified by Gecko lizards. Here, we present a simple yet programmable method for fabricating anisotropic, sub-micron-sized bent pillar structures by using photo-reconfiguration of azopolymer. A slant irradiation of p-polarized light on the pillar structure of photo-responsive azopolymer simply results in a bent pillar structure. By combining the field-gradient effect and directionality of photo-fluidization, a control of bending shape and curvature is achieved. With the bent pillar patterned surface, anisotropic wetting and directional adhesion are demonstrated. Moreover, the bent pillar structures can be transferred to other polymer, highlighting the practical importance of the method. We believe that the pragmatic way to fabricate bent pillars can be used for many applications requiring systematic variation of bent pillar structure in a reliable manner.