

Supporting Information

Multiscale Bio-inspired Honeycomb Structure Material with High Mechanical Strength and Low Density

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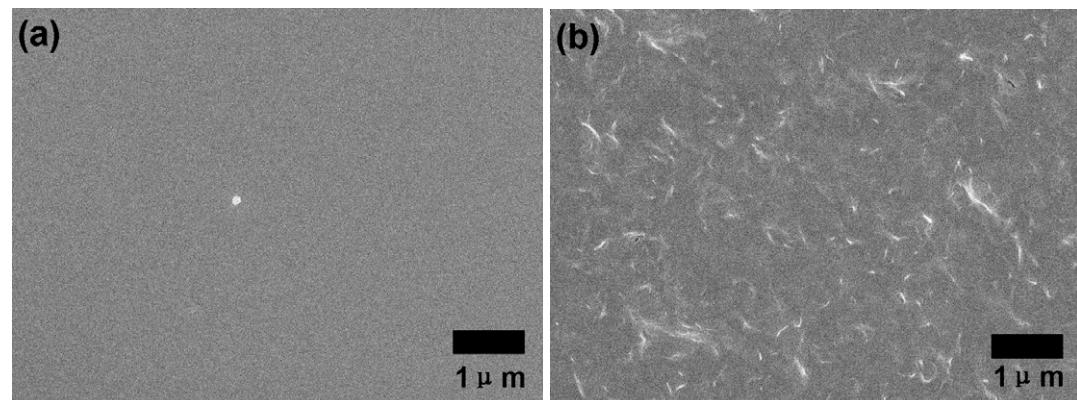


Figure S1. The SEM images of two smooth films. (a) is the film without clay and (b) is the film fabricated with the polymer solution containing 0.9wt% clay. From the images we can find the clay layers in image (b). We examined these layers under the SEM, and found these layers are about 300-600 nm long and about 50-80 nm thick.

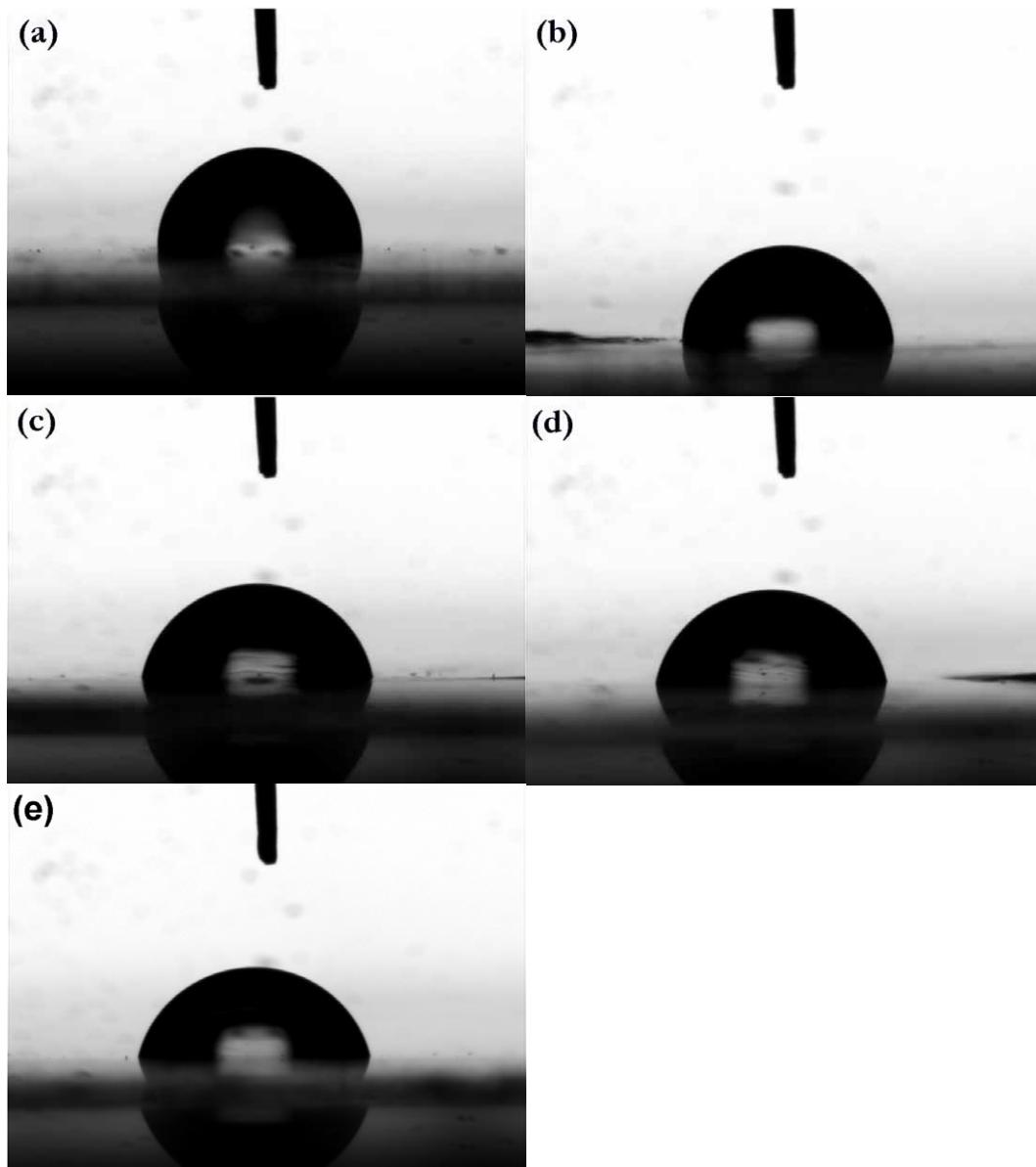


Figure S2. The CA photos of the smooth films which were prepared with the PI solution containing different clay content of 0wt%, 0.3wt%, 0.5wt%, 0.75wt% and 0.9wt%, and table 1 shows the exact data. The decrease of CAs shows that the hydrophilicity of the films is increasing when more clay is added, which are thought to make the pores more uniform.

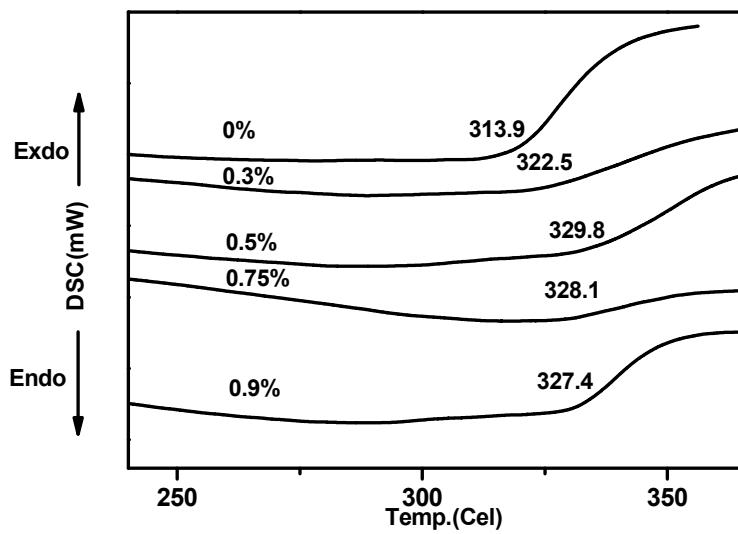


Figure S3. The curves of DSC test of PI-clay smooth films prepared with different clay content polymer solution.