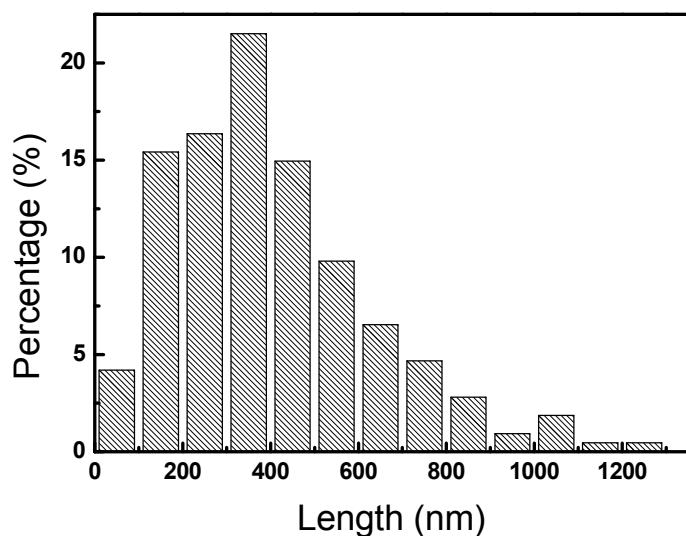
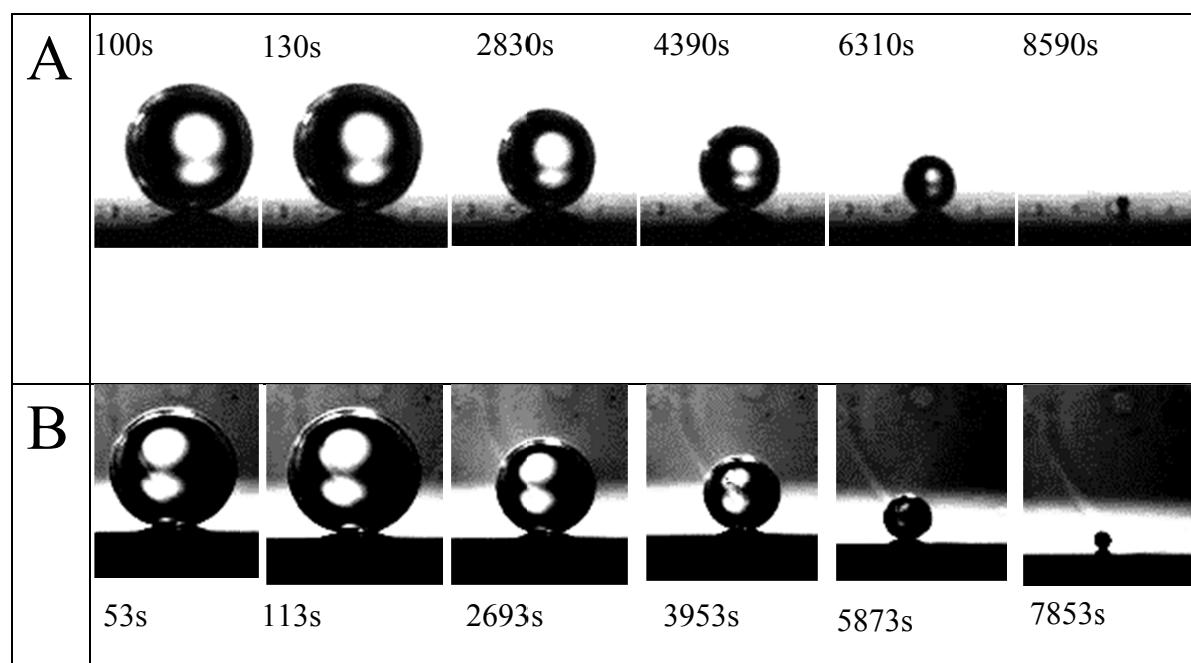


S1. Size distribution of GO nanosheets.

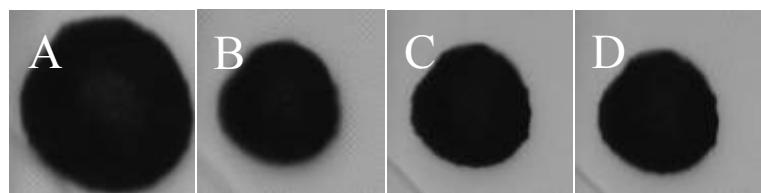


S2. A series of typical side-view images of the evolution of GO aqueous droplet in (A) 5% and (B) 10% ethanol/toluene solution.



In 5% ethanol solution, the first image was taken 100s after the droplet deposition. The third and fourth frames showed the droplet had shrunk by 49% and 73% in the volume (2830s and 4390s), respectively. After the final frame of the droplet (8590s) no further shrinkage of the droplet was observed and the GO concentration reached 300.4 mg/ml. In 10% ethanol solution, the first snapshot was taken 53s after the deposition, and the third and fourth frames showed the droplet volume shrunk by 50% and 71%. The final size of the droplet was 99.75% of the initial volume and the concentration of GO reached 200 mg/ml. After the completion of dissolution, the final diameter of all the droplets remained constant for hours for the droplets left in a capped chamber.

S3. A serial of optical microscopy images of sponge microballs' shrinkage in air with the natural evaporation of ternary solution. The time interval is 5 seconds and the magnification is 20X.



S4. Analysis SEM images with ImageJ software to calculate the average peak numbers per micrometer

All cross sectional curves were analyzed with “ImageJ” software. We first draw a level line across the whole SEM image at a selected place, and then plot the curve with the function of “plot profile”. As the result, the profile of this selected place displayed in a window with the unit of the horizontal axis of pixel and gray value for the vertical axis. We counted all peaks no matter how tiny it is since any fluctuation of the GO sheets surface can result in the enlargement of the surface area to volume ratio of the assembled nanostructure. And the average peak number was calculated by dividing the peaks numbers by the horizontal length of the profile.

S5. SEM images for GO snowballs assembled in other organic solvent, such as ethyl acetate with ethanol (A to C) and hexane with chloroform (D to F) at different resolution.

