

Supplementary Information

The images of patterned films with high-molecular weight were processed with image software (image J) in order to derive quantitative data from the images. In this series of image processing steps, it is illustrated how the images are converted in a suitable form and filtered with a circular and elliptical filters, respectively, in order to eliminate specific image objects (*i.e.*, either the spherical capsules or fibers). The technique is used on black-and-white 8-bit images with improved edges, that are later converted into black-and-white pictures with a given threshold value.

The original pictures obtained by optical microscopy were color pictures (Figure S1), that are first converted into 8-bit pictures with improved edges (Figure S2). The latter images are transformed into a black-and white picture with selected threshold value that include all specific image objects including spherical capsules, short-fiber structures and long-fiber structures (Figure S3). The threshold value was experimentally selected as such that most of the defined features are well represented. For this image, first a filter with small circular diameter was applied to filter the smallest spherical objects (Figure S4) and a filter with larger circular diameter was applied to filter the larger spherical objects (Figure S5). The latter two separate steps are only illustrative, as all spherical objects were filtered with a single filtering element of maximum diameters (*i.e.*, the total number of spherical objects is determined as the number of objects removed in the Figures S4 and S5). Finally, an elliptical filter element with given mean diameter and ratio was used to remove the short-fiber structures (Figure S6). The shape of the filter element was experimentally determines as to capture as much as possible significant image objects. In the final image ((Figure S6), only the large-fiber structures are left.

From the obtained black-and-white pictures, the relative amount of image objects is determined by the ratio of black pixels and white pixels, which physically correspond to the surface coverage area of each type of objects.

Figure S1. Original image obtained by optical microscopy.

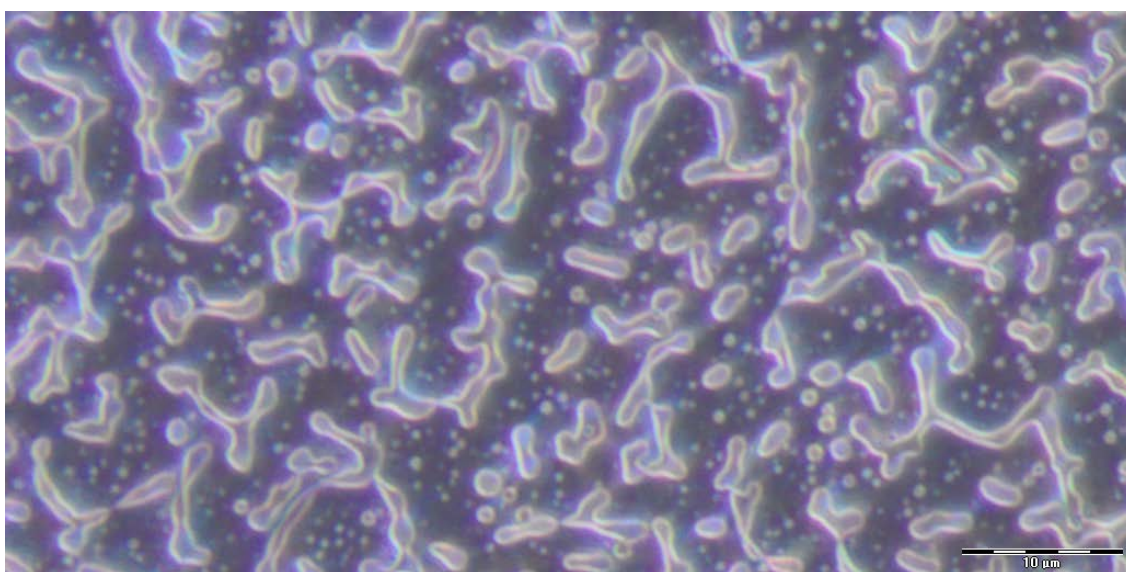


Figure S2. 8-bit image with improved edges (scale bar as Figure S1).

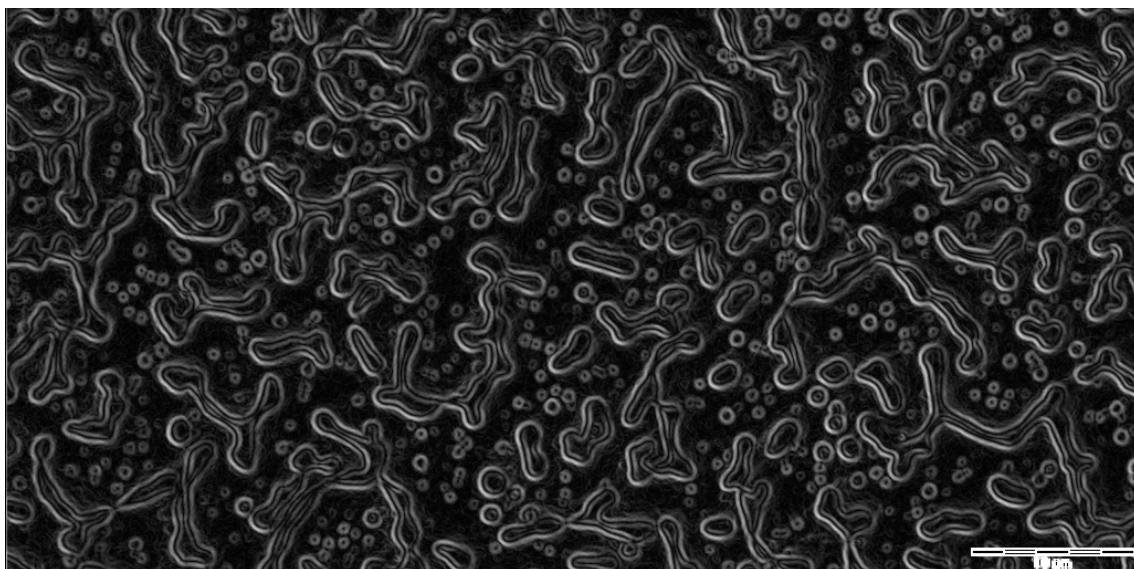


Figure S3. Black-and-white threshold image (scale bar as Figure S1).

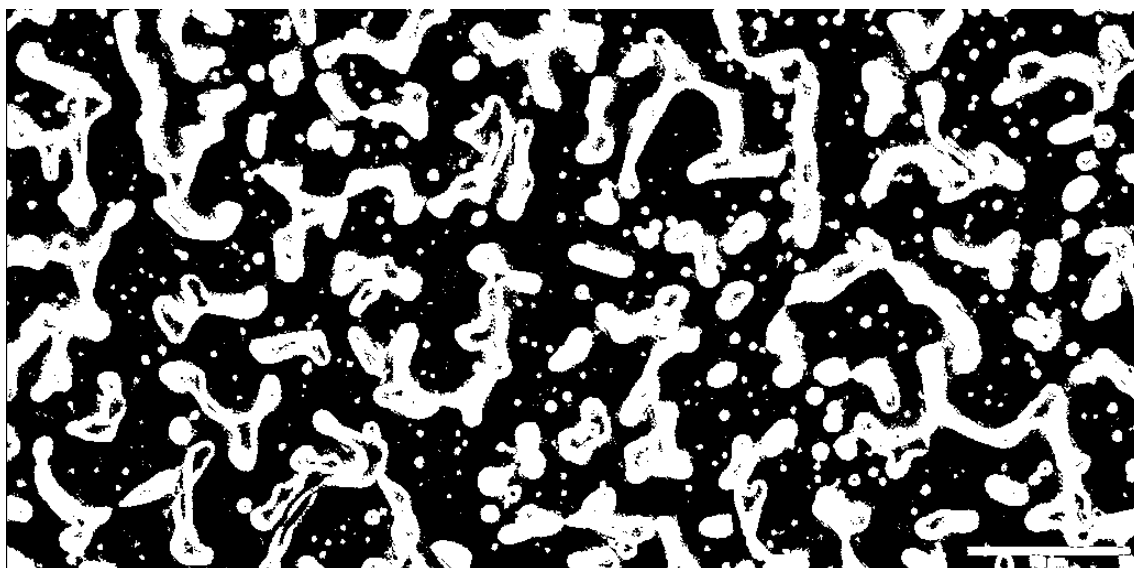


Figure S4. Filtered image, using filter with small spherical diameter (scale bar as Figure S1).

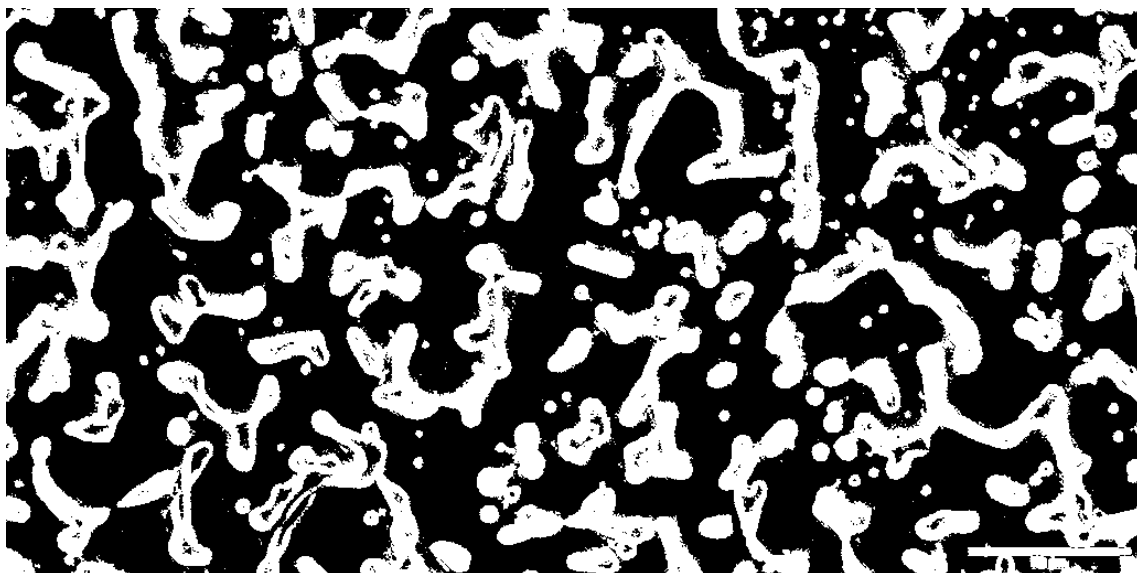


Figure S5. Filtered image, using filter with larger spherical diameter (scale bar as Figure S1).

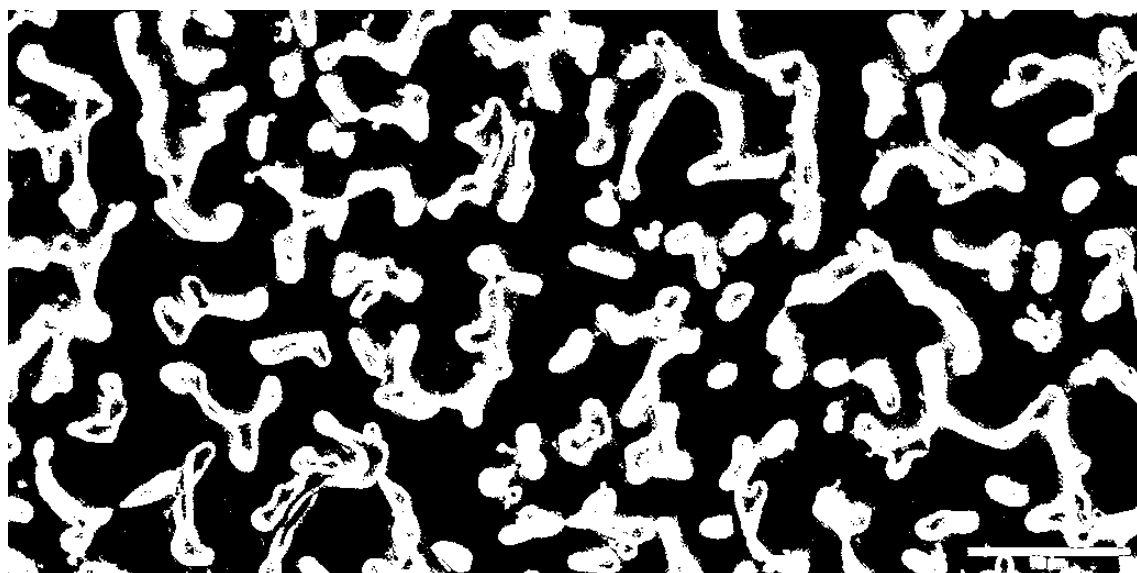
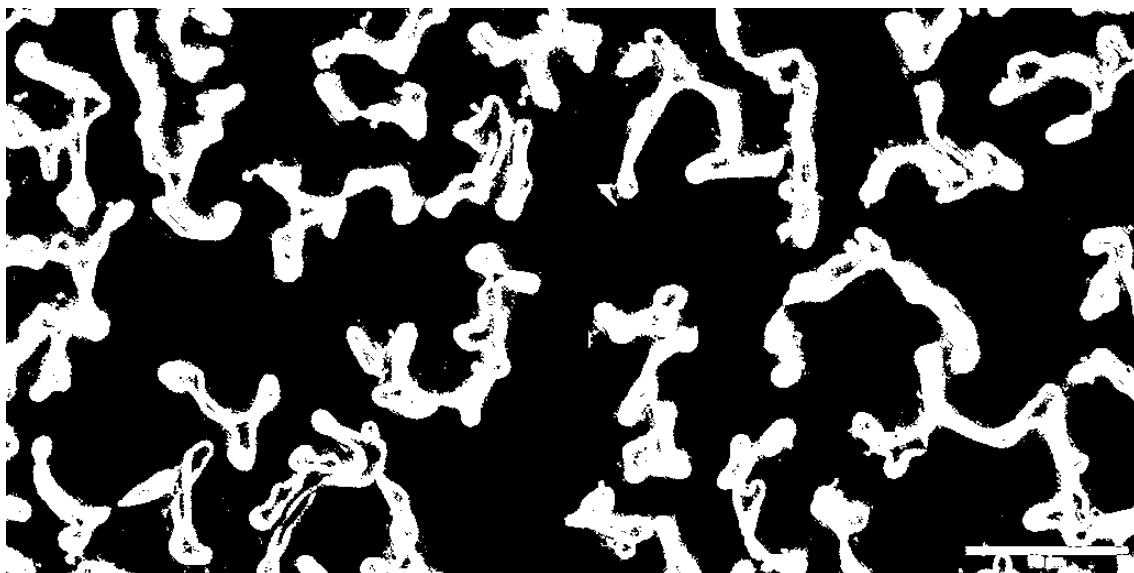


Figure S6. Filtered image, using filter with elliptical diameter (scale bar as Figure S1).



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