

Electronic supplementary information (ESI) for Study of Molecular Adsorption of Cationic Surfactant on Complex Surfaces with Atomic Force Microscopy

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Chemical composition and structure of cetyltrimethylammonium chloride

This structure is shown in Fig.S1. The sizes are as follows: $a=2.53\text{nm}$, $b=0.51\text{nm}$, $b'=0.67\text{nm}$,
 $c=0.46$, $c'=0.41\text{nm}$.

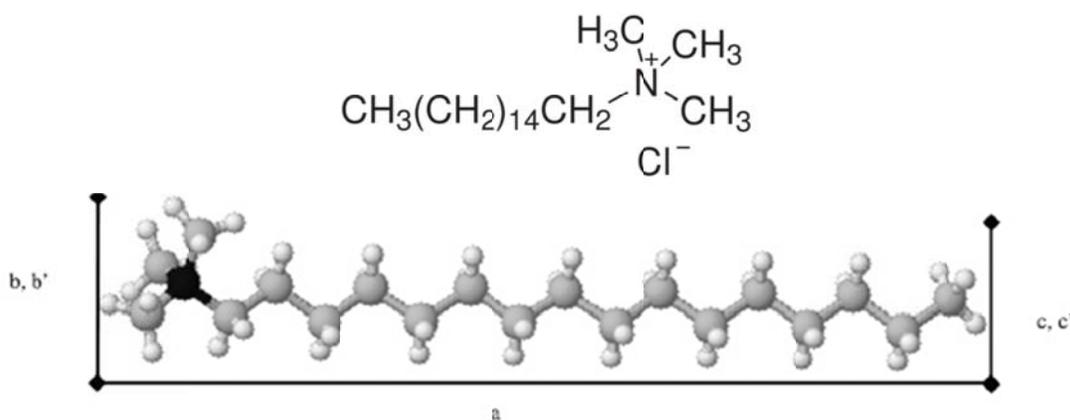


Figure S1. Chemical composition/structure of cetyltrimethylammonium chloride, a test molecule to test their ability of AFM method to detect adsorption of organic molecules. Physical sizes of cetyltrimethylammonium cation are shown.

Images of artifacts and artifact-free parts of sample surface

A $10 \times 10 \mu\text{m}^2$ area of the membrane which was scanned with AFM in contact mode in water is shown in Fig.S1a. When using the relatively dull pyramidal AFM probes for the imaging, a few artifacts can be easily recognized when a side of the probe (not the apex) touches the fiber surface. In Fig.S2a several easily identifiable artifacts as well as good areas of the image (shown with arrows) can be observed. Figure S2b shows a small area of $2 \times 2 \mu\text{m}^2$, in which a considerable part of the image is suitable for the force measurements (“good” part of the image). The force analyses identifying adsorption of molecules were done on areas which are free from the artifacts.

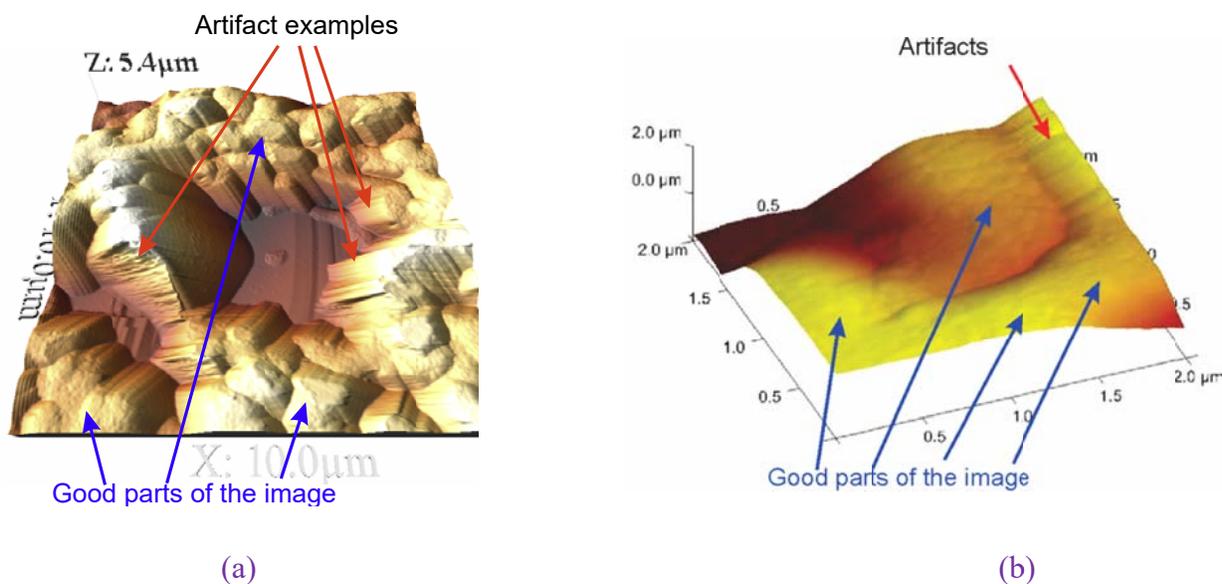


Figure S2. Representative AFM images of a membrane fiber scanned in contact mode in water. (a) $10 \times 10 \mu\text{m}$ area of the membrane. (b) $2 \times 2 \mu\text{m}$ area of the membrane. Artifacts and good areas of the image are shown.