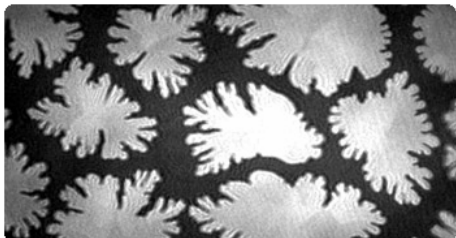


Brewster Angle Microscopy

BAM sample images



DMPE

This is an image of DMPE (dimyristoyl phosphatidyl ethanol amine). This phospholipid is an important component of biological membranes.

These are domains of liquid-condensed DMPE in an ambient phase of liquid-expanded DMPE during a first-order phase transition.

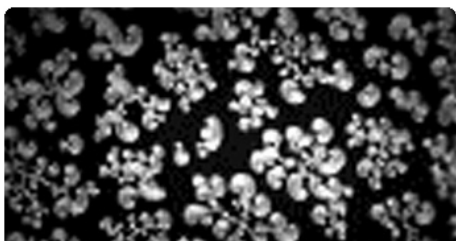
(Conditions: room temperature, subphase: water)



Sphingomyelin

This phospholipid is an important component of biological membranes. These are domains of liquid-condensed sphingo in a liquid-expanded ambient phase during a first-order phase transition.

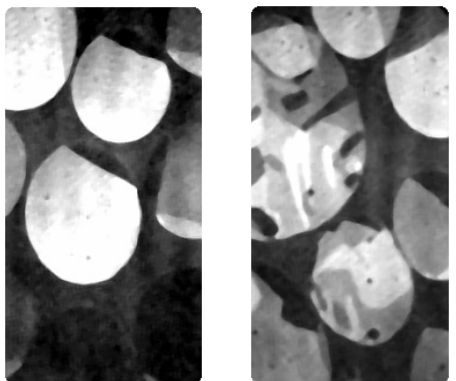
(Conditions: room temperature, subphase: water)



DPPC

These are images of DPPC (dipalmitoyl phosphatidyl choline), an important component of biological membranes. Interestingly, the chirality of the molecule is also expressed in a macroscopic chirality of the domain shape during a first order phase transition.

The racemic mixture (LD) does not show chiral domains. (Conditions: room temperature, subphase: water)



Pentadecanoic Acid

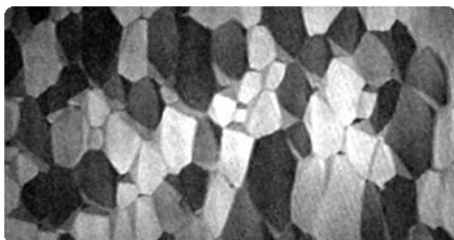
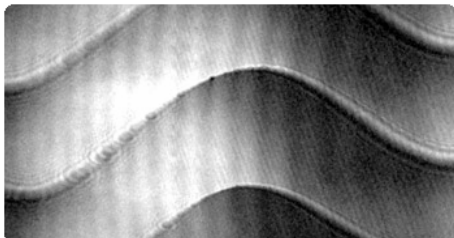
These are images of pentadecanoic acid (C15), a simply fatty acid with 15 C-atoms in a straight chain.

These are domains of liquid-condensed C15 in a liquid-expanded ambient phase during a first-order phase transition, at two different surface pressures.

Using the analyzer of the EP³-BAM reveals the internal structure of the domains due to long range orientational order of the molecules.

(Conditions: room temperature, subphase: water)

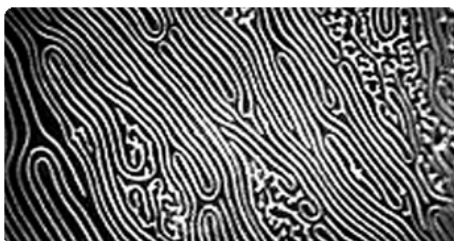
Brewster Angle Microscopy



Palmitic Acid

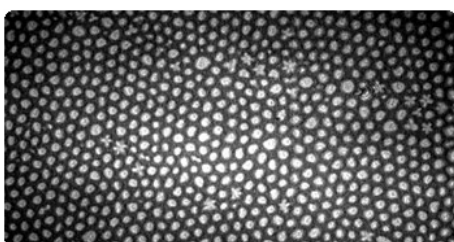
These are images of palmitic acid (C16), a simply fatty acid with 16 C-atoms in a straight chain. These are domains of liquid-condensed C16 in a liquid-expanded ambient phase during a first-order phase transition, at two different surface pressures. Using the analyzer of the EP³-BAM reveals the internal structure of the domains due to long range orientational order of the molecules.

(conditions: room temperature, subphase: water)



Fluorinated Stearic Acid

This is an image of omega-fluorinated stearic acid(F3C18), a straight chain fatty acid with 18 C atoms, where the terminating CH₃ group has been replaced by CF₃. This molecule has a strong dipolar moment, producing a long-range repulsive force between liquid-condensed domains during a first-order phase transition. During compression this leads to a "spaghetti" phase. (Conditions: room temperature, subphase: water)



Mixed monolayer DPPC / NBD-DPPC

This is an image of a DPPC monolayer mixed with 30%NBD-DPPC, a fluorescence labeled molecule.

Usually, NBD is used in low concentration (typ. 1%) for fluorescence microscopy. Here it was used to study the effect of light absorption in the monolayer. Within the domains the NBD concentration is lowered. To see the effect on the domain shape, compare these images with the images of pure DPPC.

(Conditions: room temperature, subphase: water)