

SEM 1 shows an experiment where a silicon oil drop is deposited upon a dry foam. The contrast of optical indices between the two liquid phases (organic and aqueous) being small, we add a small quantity of fluorescent dye into the oil. With this set-up and under illumination with excitation at 488 nm, the oil is luminous while the aqueous foam - only constituted of air and aqueous solution - is not visible. The movie demonstrates that in a real 3D foam, the oil can impregnate the foam structure via successive topological rearrangements as observed in the elementary foam. The movie is slowed down by a factor of two and the height of the frame is 10 mm.

SEM 2 shows the creation of a soap film in a oil laden foam. The contrast of optical indices between the two liquid phases (organic and aqueous) being small, we add a small quantity of fluorescent dye to the oil. With this set-up and under illumination with excitation at 488 nm, the oil is luminous while the aqueous foam - only constituted of air and aqueous solution - is not visible. A few seconds after the freshly created film has been pulled, the rupture and retraction of an oil film trapped inside the water film is observed. The movie is real time and the height of the frame is 3 mm.