Continuous and discontinuous transitions between two types of capillary bridges on a beaded chain pulled out from a liquid.

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Supplementary Movie Captions

Supplementary Movie 1. The process of pulling the chain of spheres with radius $R = 2\,\mathrm{mm}$ out of the $10\,\mathrm{cSt}$ silicone oil with the vertical velocity $v = 0.01\,\mathrm{mm/s}$. The sphere-planar liquid surface bridge transforms into the sphere-sphere bridge continuously. The chain was assembled by gluing the spheres together. Section of the video frame (700px x 620px) was used to measure the projected area S of the spheres and liquid onto a plane parallel to the z axis which was then used in making the inset in Fig. 6.

Supplementary Movie 2. The process of pulling the chain of spheres with radius $R = 25\,\mu\mathrm{m}$ out of the $10\,\mathrm{cSt}$ silicone oil with the vertical velocity $v = 0.01\,\mathrm{mm/s}$. The sphere-planar liquid surface bridge transforms into the sphere-sphere bridge discontinuously. The chain was assembled by employing the alternating electric field. Section of the video frame (300px x 250px) was used to measure the projected area S of the spheres and liquid onto a plane parallel to the z axis which was then used in making the inset in Fig. 6.

Supplementary Animation 1. The process of pulling the chain of spheres with radius $R = 2\,\mathrm{mm} > \lambda/2$, where the capillary length $\lambda = 1.45\,\mathrm{mm}$. The sphere-planar liquid surface bridge transforms into the sphere-sphere bridge continuously. This animation is based on our theoretical analysis and corresponds to Supplementary Movie 1.

Supplementary Animation 2. The process of pulling the chain of spheres with radius $R = 25\,\mu\mathrm{m} < \lambda/2$, where the capillary length $\lambda = 1.45\,\mathrm{mm}$. The sphere-planar liquid surface bridge transforms into the sphere-sphere bridge discontinuously. This animation is based on our theoretical analysis and corresponds to Supplementary Movie 2.