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Spontaneous elastocapillary deformations driving the formation of 2D microcoils

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We report on the elastocapillary deformation of flexible microfibers in contact with bubbles trapped at the surface of a liquid bath resulting in stunning 2-dimensional microfiber coils. Microfibers are placed on top of bubbles and are found to migrate to and wrap around the perimeter of the deformed liquid surface for certain bubble-fiber size combinations. A simple model incorporating surface and bending energies is used to describe the winding process.

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