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Elastocapillary bending of microfibers around liquid droplets KARI DALNOKI-VERESS, RAFAEL SCHULMAN, Department of Physics Astronomy, McMaster University, Hamilton, Canada, AMIR PORAT, Laboratoire de Physico-Chimie Theorique, UMR CNRS Gulliver 7083, ESPCI Paris, PSL Research University, 75005 Paris, France, KATHLEEN CHARLESWORTH, ADAM FORTAIS, Department of Physics Astronomy, McMaster University, Hamilton, Canada, THOMAS SALEZ, ELIE RAPHAEL, Laboratoire de Physico-Chimie Theorique, UMR CNRS Gulliver 7083, ESPCI Paris, PSL Research University, 75005 Paris, France — We present a study of the elastocapillary deformation of flexible microfibers in contact with liquid droplets. As the size of the contacting droplets increases, fibers are found to bend more in response. Finally, at a critical droplet size, proportional to the bending elastocapillary length, the fiber spontaneously winds itself around the droplet. Simple theoretical considerations yield predictions which are in agreement with the experimental results.

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