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The droplet on a sugar fiber[1] STEPHANE DORBOLO, FNRS-University of Liege, FLORIANE WEYER, NICOLAS VANDEWALLE, University of Liege, ALEXANDRE DELORY, ESPCI, ESPCI TEAM, FNRS-UNIVERSITE DE LIEGE TEAM — The shape and the motion of a droplet on a fiber are determined by the volume of the droplet, the radius of the fiber and the contact angle (static, advancing and receding) of the liquid on the material of the fiber. We consider a particular case in which the radius of the fiber is modified by the very presence of the droplet. The chosen system consists of a fiber made of glucose on which a water droplet is released. When the fiber is vertical, the droplet slides down the fiber before stopping at the extremity of the fiber. At this point, the droplet dissolves the fiber until the droplet moves upwards. This surprising motion of the droplet is analyzed regarding the dissolution dynamics.

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