

Abstract Submitted  
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**Scaling laws for the imbibition of textured surfaces comprising short pillars with rounded edges** KO OKUMURA, NORIKO OBARA, MINAKO HAMAMOTO-KUROSAKI, Ochanomizu University — Imbibition of porous media has been useful in many practical applications, e.g. to realize ultra-slippery surf surfaces. However, fundamental physical understandings are still limited. Recently, two scaling regimes are identified for the imbibition of textured surfaces comprising long pillars with sharp edges [1,2]. Here, we study textured surfaces comprising short pillars with rounded edges [3]. As a result, we find different scaling regimes for the dynamics. Surprisingly, this law is universal in the sense that it is independent of texture geometry, i.e., of pillar height, pillar distances, and pillar radius.

[1] Chieko Ishino, Mathilde Reyssat, Etienne Reyssat, Ko Okumura and David Quere, *Europhys. Lett.* 79 (2007) 56005.

[2] Minako HAMAMOTO-KUROSAKI and Ko OKUMURA, *Eur. Phys. J. E* 30, 283-290 (2009)

[3] Noriko OBARA and Ko OKUMURA, *Phys. Rev. E Rapid Communication* (in press 2012).

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