

Abstract Submitted
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Non-Newtonian Drop Impacts: Spread and Retraction on Micropillars SANTHOSH KUMAR PANDIAN, MIGUEL BALZAN, GEOFF WILLMOTT, University of Auckland — Studies of drop dynamics are essential for controlling and optimizing drop deposition on any surface. Droplet interactions with micro-patterned surfaces such as a pillar array are important for numerous microfluidic and industrial applications. Drop spreading and retraction on patterned surface has been studied widely for Newtonian fluids, but impacts of non-Newtonian fluids on patterned surfaces have not been studied in detail [1-2]. Drop impact of non-Newtonian fluids is of significant interest owing to the common use of such fluids in industrial and biological processes [1]. In this study, the effect of surface patterning on drop spreading and retraction has been studied for both Newtonian (glycerol) and non-Newtonian (carbopol) aqueous solutions, and preliminary results will be discussed. We aim to investigate the underlying mechanism between surface patterns and drop dynamics for various non-Newtonian solutions. [1] N. Laan, K. G. de Bruin, D. Bartolo, C. Josserand and D. Bonn, *Physical Review Applied* 2, 044018 (2014). [2] S. Robson and G. R. Willmott, *Soft Matter* 12, 4853 (2016). -/abstract-
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