

Drop Impacts: Lamina Spread Interactions with Ridges

Joe Bloggs,^{1*} John Doe,² Jane Doe² and Jane Smith^{1,3,4}

¹Department of Physics, The University of Auckland, New Zealand

²The University of Canterbury, 20 Kirkwood Ave, Christchurch, New Zealand

³School of Chemical Sciences, The University of Auckland, New Zealand

⁴The MacDiarmid Institute for Advanced Materials and Nanotechnology

Email address of presenting author: **AUTHOR (YOUR) EMAIL ADDRESS**

Droplet impacts on patterned surfaces has been a growing area of interest.¹ In one recent example, researchers noted the ability to reduce a droplet's contact time by direct impact on a thin ridge.² More commonly a droplet will impact the surface a distance away from a ridge, after which a spreading lamina will impact the ridge tangentially.

This presentation will describe a study which aims to uncover the mechanism by which the spreading lamina surmounts the surface ridge. High speed video of droplet impact experiments are being compared with a Lattice-Boltzmann computational model. Through this research we wish to expand our understanding of how lamina spread interacts with surface microstructures. Findings from this study may provide missing explanations for more complex phenomena, such as how the lamina spreads along a superhydrophobic surface that is produced by pillar arrays.³

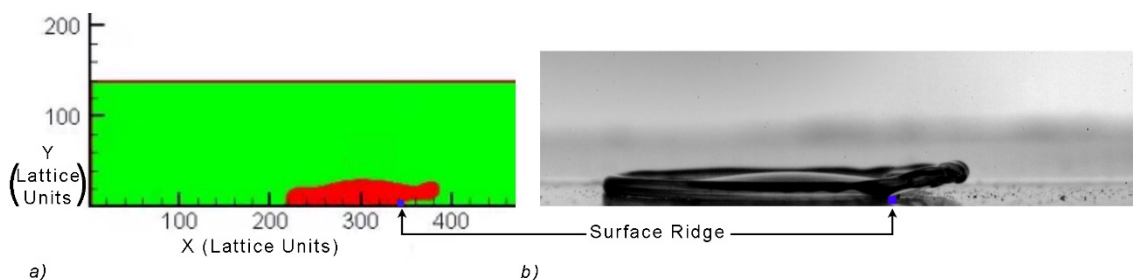


Figure 1: (a) A Lattice-Boltzmann simulation and (b) the corresponding experimental high speed video for a spreading water drop near a ridge.

References:

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3. S. Robson and G.R. Willmott, *Soft Matter*, **2016**, *12*, 4853-4865.