SCANNING DROPLET ADHESION MICROSCOPY FOR SURFACE WETTING CHARACTERISATION

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The characterization of wetting properties is usually carried out via measurements of contact angles at the three-phase contact line[1] with contact angle goniometry. Even though contact angle measurement is useful wetting characterization technique, they are prone to substantial inaccuracies, especially for hydrophobic surfaces[2,3] . Thus, the characterization of such surfaces needs to be more carefully considered[3]. Here will be addressed the problem and presented a cutting-edge methodology, scanning droplet adhesion microscopy, for evaluating wetting of hydrophobic surfaces with enhanced accuracy based on the adhesion force measurements. The technique allows measurement of small forces with sensitivity down to nanonewton and mapping of wetting properties at microscale spatial resolution[4] (Figure 1).

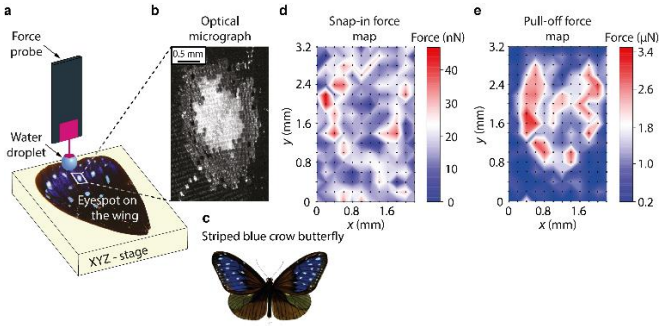

Figure 1. Concept of scanning droplet adhesion microscopy to construct wetting maps showing (**a**) schematic diagram of the microscope (not to scale), (**b**) optical micrograph of scanned eyespot area on the wing of (**c**) striped blue crow butterfly (image by Frederic Moore, PD-1923) with corresponding (**d**) snap-in and (**e**) pull-off force maps.

ACKNOWLEDGEMENTS: The authors thank the European Research Council grant ERC-2016-CoG (725513-SuperRepel) and the Academy of Finland Centres of Excellence Programme 2014–2019 for supporting this work.

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