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The consequences of water in adhesion, friction and wetting[1] ALI DHINOJWALA, ADRIAN DEFANTE, TARAK BURAI, MATTHEW BECKER, Univ of Akron — The interactions of hydrophobic surfaces are relevant to numerous processes in physical and biological sciences. We have used contact mechanics, contact angle measurements, and a biaxial friction cell to quantify adhesion, wetting and friction behavior in wet environments between two low energy surfaces. To gain an understanding of the role of water in these processes we have coupled these measurements with surface sensitive sum frequency generation to directly measure the contacting interface. These results provide a direct molecular probe to understand macroscopic phenomena.

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