

ON THE ADHESION FORCE BETWEEN A DROPLET AND A SINGLE FIBER

Henry Holweger¹, Hooman Tafreshi¹

¹Virginia Commonwealth University

Understanding the adhesion force between a droplet and a fiber is critical to multiple industrial applications in the field of interfacial fluid mechanics. Examples of such applications include, but are not limited to, fog harvesting, droplet removal from gaseous or liquid flows, textiles and protective clothing, microfluidics, and fuel cells. In this talk, we present a new experimental method developed to measure the force required to detach a droplet from a single fiber. The experimental results are interpreted in terms of the wetting properties of the fluids and fibers used for the experiment, and they are discussed in the context of existing literature.