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Laser Assisted Study of Sessile Drop Morphology under Wind Conditions YURI SIKORSKI, EWEN CHAN, Kettering University — We present a simple method to characterize sessile drop morphology including size and shape of the drop, contact angle and microscopic details of the liquid-air-solid interface shape under various wind conditions. In this method, the randomly polarized HeNe laser beam is focused on the surface of the liquid drop placed on a 5-axis micro-positioning stage. The setup is then placed inside a wind tunnel or optionally, the wind is generated by an air pump or compressed air canister. The laser beam reflected from the air-liquid interface is projected on a screen and the angle of the reflected beam measured. Also, the complex diffraction patterns created on the screen by the laser beam reflected from the liquid-air-solid interface were photographed and analyzed. The results for water, isopropyl alcohol and olive oil on glass and metal surfaces under various wind and tilt conditions are presented.

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