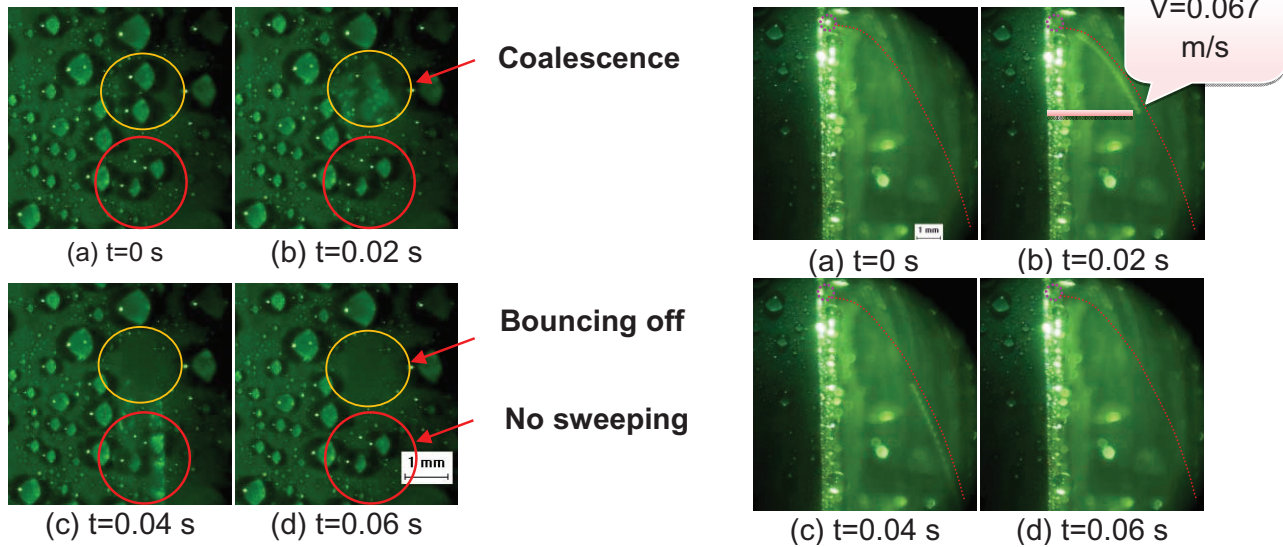


Oscillating movement of droplets



Bouncing off behavior of droplets

Oscillating and Bouncing off of Condensate Droplets on a Vertical Superhydrophobic Surface

Xuehu Ma*, Sifang Wang*, Zhong Lan*, Benli Peng*, Tao Bai*, HongBin Ma**

*Institute of Chemical Engineering, Dalian University of Technology, Dalian 116012, China

**Department of Mechanical and Aerospace Engineering, University of Missouri-Columbia, Columbia, MO, USA

Formation processes of condensate drops on vertical superhydrophobic plates were investigated experimentally in the presence of a high concentration noncondensable gas (NCG, >80mol%). The effect of roughness-induced superhydrophobic surface on the dropwise condensation process was observed by a PHOTRON high speed camera attached to a microscope. Results demonstrate that 1) oscillating movement of droplets on the surface exists during the condensation process; and 2) some droplets formed on the vertical superhydrophobic surface can directly bounce off the condensation surface.

[This research was supported by the National Natural Science Foundation of China(No. 51176018).]