Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Evaporation dynamics of water droplets on inclined surfaces[1]
JIN YOUNG KIM, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, IN GYU HWANG, School of Advanced Materials Science and Engineering, Sungkyunkwan University, BYUNG MOOK WEON[2], School of Advanced Materials Science and Engineering, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University — When a water droplet is gently placed on a flat substrate, particularly which is tilted at an inclined angle, usually there are advancing and receding angles inside the droplet formed by inclination under gravitational force. Evaporation dynamics of an nonspherical inclined droplet at inclinations would deviate from that of a spherical droplet. Here we study on evaporation dynamics rates of inclined droplets by measuring mass changes with time and their lifetimes. We find that the lifetime of an evaporating inclined droplets becomes longer as the gravitational influence becomes stronger. The lifetime depends on the pinning-depinning transitions and the depinning onset times, which are changed by the gravitational influence. This The dependence inclination-induced evaporation behavior would be useful important in understanding evaporation dynamics of inclined droplets.

[1]This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (NRF-2016R1D1A1B01007133).
[2]Email: bmweon@skku.edu

Jin Young Kim
SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University

Date submitted: 28 Jul 2016 Electronic form version 1.4