Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Obtaining reliable friction data at the nanoscale by tuning AFM parameters[1] SUNG HYUN KIM, SUENNE KIM, Hanyang University — Carefully devised experimental study of friction at the nanoscale in dry system is desired for proper mathematical modeling or for quantitative research. Experimentally, contact mode atomic force microscope (AFM) which is able to perform lateral force microscopy (LFM) can be used for acquiring frictional data. To obtain reliable LFM information, we have investigated the effect of scanning parameters, especially gain and scanning rate, on the LFM measurements. Depending on the parameters selected, the relative ratio of the friction force obtained from graphene to that of SiO2 varies greatly from about 1 to 0.1. We will discuss, here, firstly how to understand this behavior and secondly the parameter-optimization procedure for the LFM imaging, which is different from the height imaging, eventually to aid quantitative LFM studies.

[1]This research was supported by Basic Science Research Program through NRF of Korea funded by the ministry of Education(2014R1A1A2056555).

Suenne Kim
Hanyang University

Date submitted: 14 Nov 2014

Electronic form version 1.4