

Mechanical Response of Noble Gas Films to an Oscillating Substrate

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Krim and co-workers measured the sliding friction of Kr monolayer films adsorbed on Au substrate (Kr/Au) using the quartz-crystal microbalance (QCM) technique.¹ They reported that the films are partially decoupled from an oscillating substrate. Recently, we have performed QCM experiments for Kr and Xe films on graphite substrate (Kr/Gr and Xe/Gr) at around 80 K. It was found that both films undergo almost decoupling from an oscillating substrate until the first layer completion. In addition, the slip time of Kr/Gr is about 10 times larger than that of Kr/Au. We are also preparing a QCM experiment for Kr adsorbed on mica substrate (Kr/mica). In this conference, the mechanical response of Kr/Gr, Xe/Gr, and Kr/mica will be reported.

¹J. Krim, D. H. Solina, and R. Chirarello, Phys. Rev Lett. **66**, 181 (1991).