

Abstract Submitted
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Dynamic Wetting on Graphene-Coated Surface: Molecular Dynamics Investigation¹ SHIH-WEI HUNG, JUNICHIRO SHIOMI, Department of Mechanical Engineering, The University of Tokyo — Wettability of graphene-coated surface gained significant attention recently due to discussion on the “transparency” (whether the wetting characteristics follow that of graphene or the underlying surface) and practical applications of graphene. In terms of static contact angle, the wettability of graphene-coated surfaces have been widely studied by experiments, simulations, and theory in recent years. However, the studies of dynamic wetting on graphene-coated surfaces are limited. In the present study, molecular dynamics simulation was performed to study the dynamic wetting of water droplet on graphene-coated surfaces from a microscopic point of view. The results show that the degree of similarity between the spreading behavior on graphene-coated surface and that on pure graphene (or that on the underlying surface) depends on time, i.e. how nonequilibrium the interface dynamics is. We also found that this feature can be altered by introducing defects into graphene.

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