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Molecular Dynamics Simulations of Two-Phase Nanojets and Nanobridges WEI KANG, W.D. LUEDTKE, UZI LANDMAN, School of Physics, Georgia Institute of Technology — The effects of the ambient environment on the properties of a nanojet (NJ) injected into it are investigated using molecular dynamics (MD) simulations. These studies reveal that the ambient gas slows the propagation of the NJ. However, the intact-length of the NJ and the dynamics of droplet formation remain similar to the case of a nanojet propagating in vacuum. Separate MD simulations of a liquid nanobridge verify the exponent occurring in the description of the pinching dynamics of nanojets [1], predicted through analysis of the stochastic lubrication equations derived in ref. [2].
[1] J. Eggers, Phys. Rev. Lett. 89, 084502 (2002)
[2] M. Moseler and U. Landman, Science 289, 1165 (2000)

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