

Recent Advances in Permanent Noncoalescence and Nonwetting

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Permanent noncoalescence between two drops of the same liquid or nonwetting between a liquid and a surface normally wetted by it have been the subject of study for the past several years. Such behavior may be driven through the use of thermocapillarity or relative tangential-surface motion. Potential applications range from frictionless mounts and vibration dampers for microgravity experimental packages to frictionless bearings in low-load terrestrial applications. Recent research has focused on the characterization of failure modes and mechanisms in these systems, knowledge of which is crucial for a successful application, and on the measurement of frictional forces associated with sliding, isothermal nonwetting droplets. The presentation will provide an overview of the subject and a discussion of recently obtained results.

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