

On the stability of nanobubbles at surfaces and in bulk solution

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Nanobubbles on hydrophobic surfaces can be imaged using Atomic Force Microscopy and are implicated in the very long-range attraction measured between hydrophobic surfaces. However, the theories of Epstein and Plesset and Ljundgrren and Erickson predict that such nanobubbles should have a lifetime of less than one second as they dissolve due to the influence of the Laplace pressure.

Here we present an alternative view in an attempt to explain the stability of nanobubbles