Temperature dependence of surface nanobubbles

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Nanobubbles are nanoscopic gas bubbles that form at the solid/liquid interface. Their radii of curvature are typically ~100 nm, resulting in an internal Laplace pressure of >10 atm. Therefore, these bubbles should dissolve in time-scales of $t \approx R^2/D \approx$ 10 μs, but they are found to be stable for hours. In the present work, in order to better understand the mechanism behind this stability, the effect that changing the temperature has on nanobubble size is investigated.