Supporting Information

Nanobubble formation on a warmer substrate

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Table S1. Oxygen level in water with different history. The dissolved oxygen level in water measured by optic fiber oxygen sensor (Ocean Optics, USA).

Initial condition	20 min at 34°C	10 hrs at 34°C	Shaking by hand
Fresh Milli-Q water at room-temperature	24%	26%	24%
Milli-Q water in 4 ^{o}C for 12 hrs	32%	29%	25%

Figure S2. Cosine contact angle versus the inverse of base radius R_b of nanobubbles produced at different temperature. The solid lines are the linear fittings of the data. The standard error of the linear fitting for the slope is 1.26 at 37°C, 1.65 at 42°C, 0.56 at 51°C, and 0.82 at 54°C. The line tension derived from the slope of the linear lines according to the Eq. 2 in the main text is listed in Table S2 .
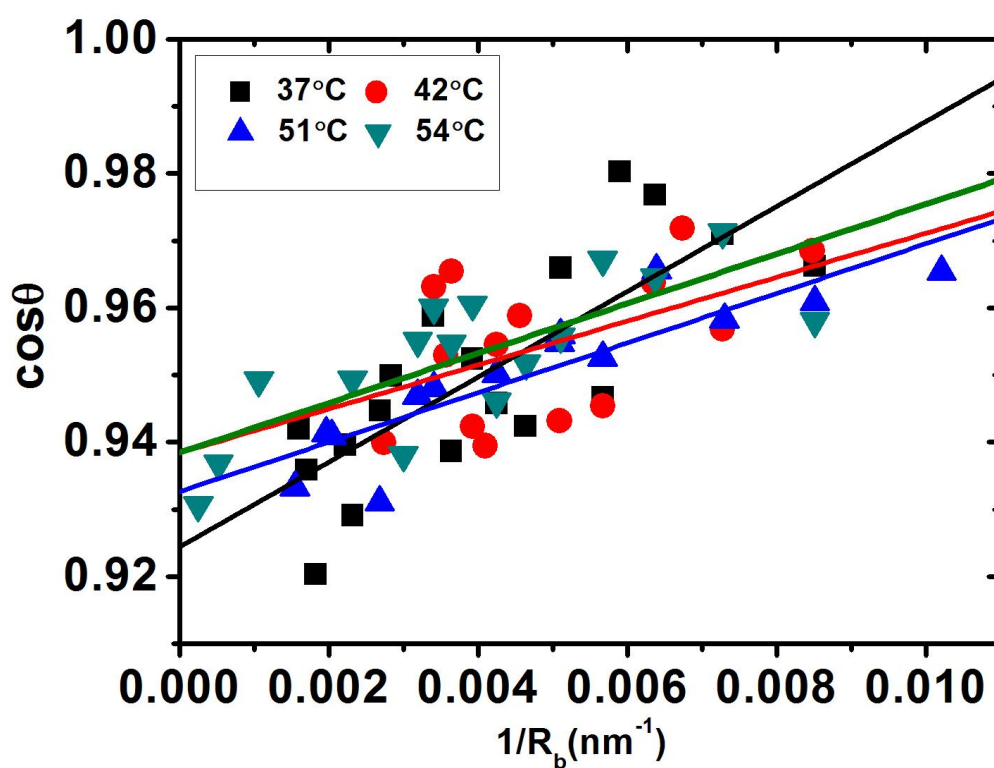
Figure S3. Spreading parameters and the fitting constant δr derived from the intercept and slope of the linear lines according to the Eq. 3 in the main text is listed in Table S2. The standard errors of the intercept and slope fitting are 0.01and 2.98 at 37^oC, 0.02 and 3.68 at 42^oC, 0.01 and 1.06 at 51^oC, 0.01 and 1.76 at 54^oC, respectively.
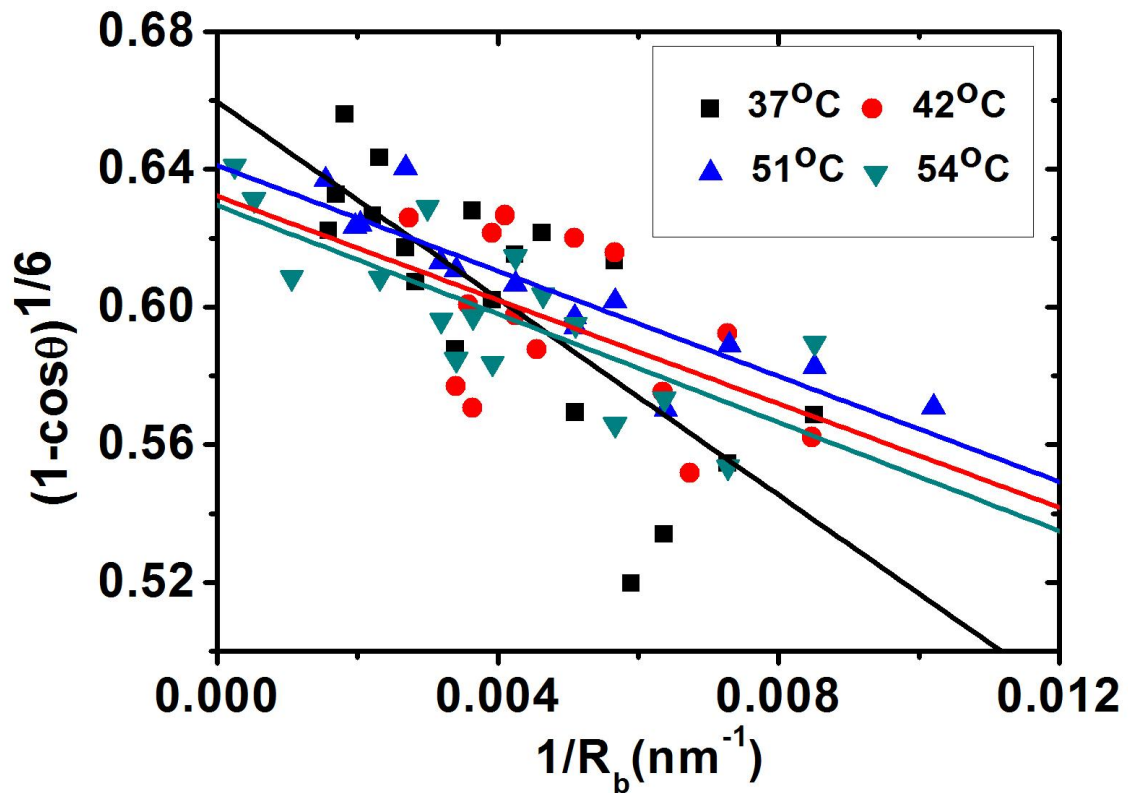
Table S2. Fitting parameters for the dependence of the contact angles of nanobubbles with their lateral sizes.

Temeperature (^{o}C)	θ_{∞} (^{o})	τ/γ_{LV} (nm)	-S/γ	δr (nm)
37	22.4	6.3	0.0824	21.6
42	20.2	3.3	0.0639	11.9
51	21.1	3.7	0.0695	11.9
54	20.2	3.7	0.0622	12.5