SUPPORTING INFORMATION

Understanding Acoustic Cavitation Initiation by Porous Nanoparticles: Toward Nanoscale Agents for Ultrasound Imaging and Therapy

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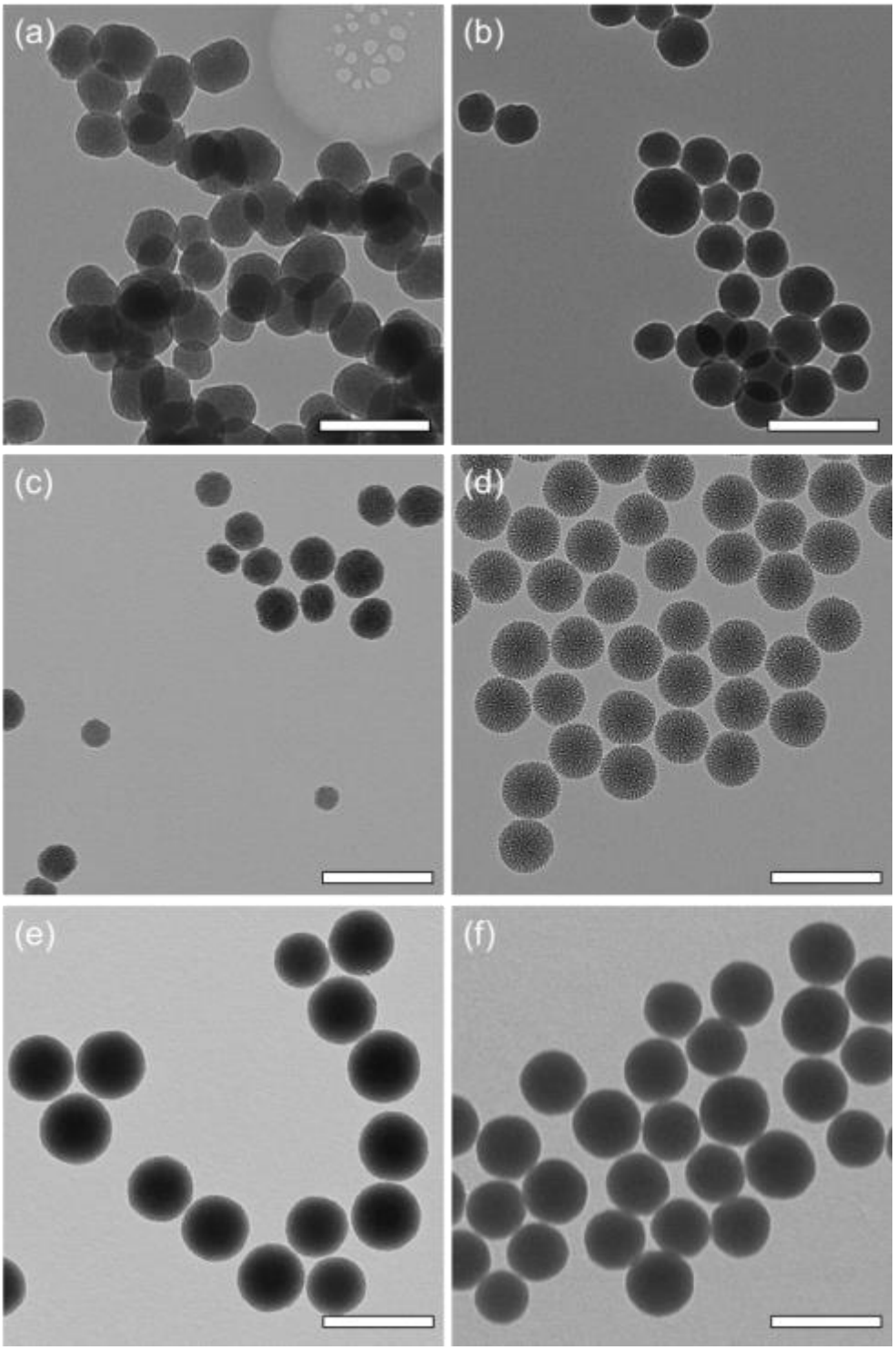

Figure S1. TEM images of the silica nanoparticles. a) MCM-41, b) MCM-48S, c) MCM-48R, d) Dendritic, e) Random, and f) SiNP. Scale bars are 250 nm.

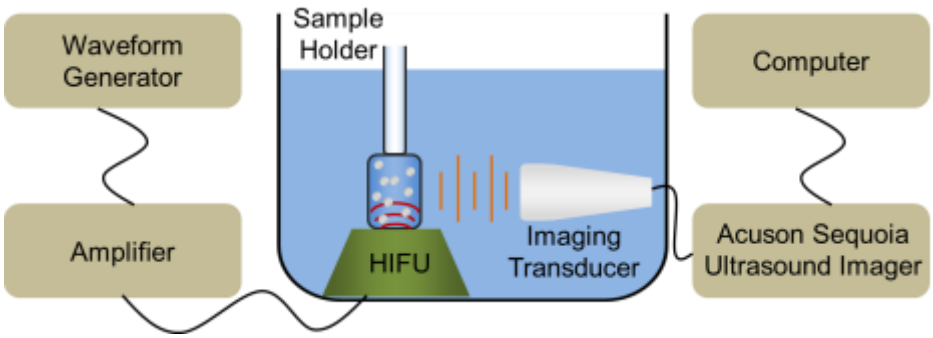

Figure S2. Schematic representation of the experimental set-up used for the acoustic cavitation experiments.

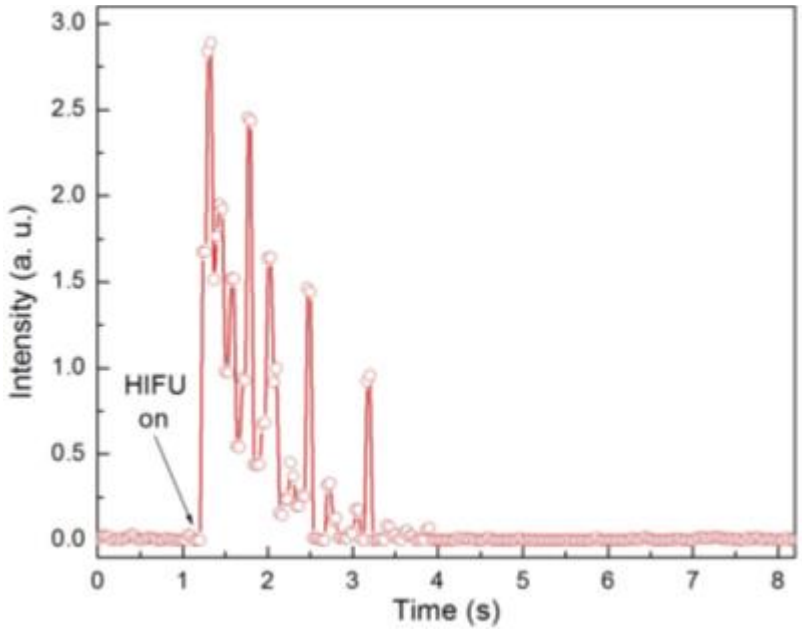

Figure S3. Response of Random (4×10^{11} particles mL^{-1}) under continuous HIFU exposure (10.6 MPa) for approximately 7 s.

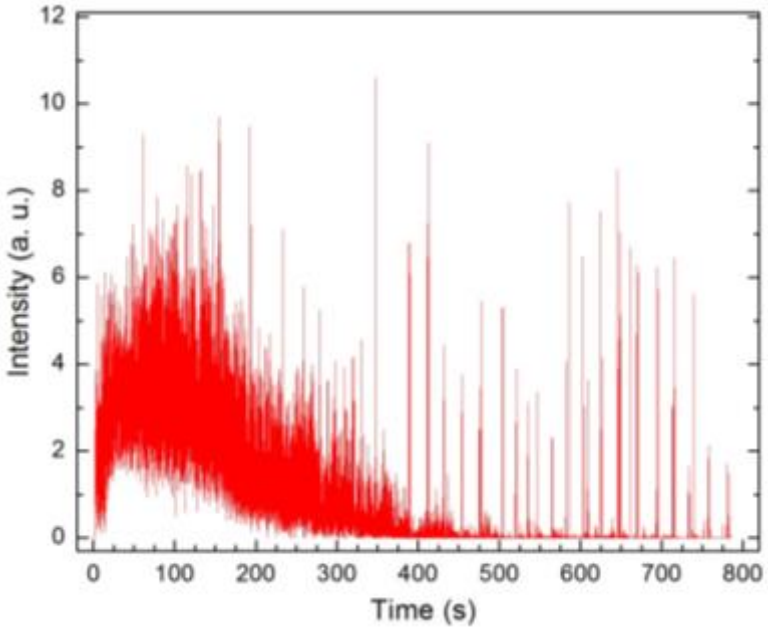

Figure S4. Response of MCM-48R (10^{11} particles mL^{-1}) under continuous HIFU exposure (10.6 MPa) for approximately 13 min.

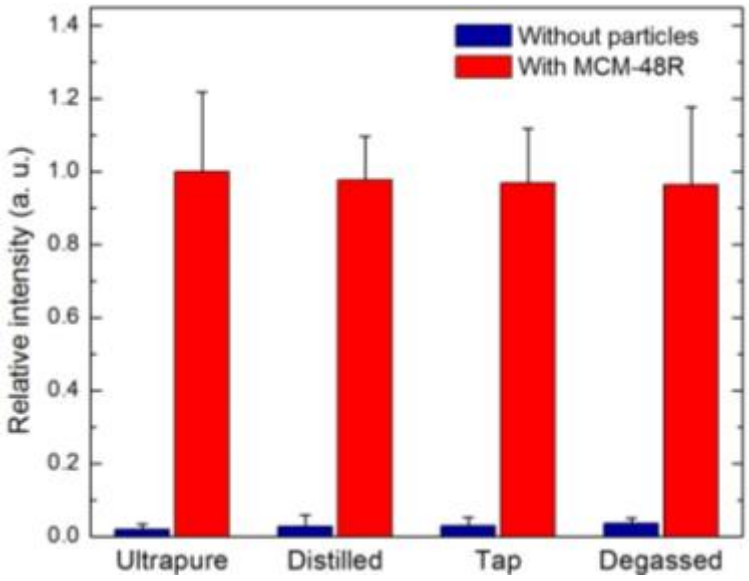

Figure S5. The relative intensity generated by the MCM-48R in different types of water. Particle concentration was 10^{11} particles mL^{-1} and peak negative pressure was 10.6 MPa. Error bars = 1 SD, studies were run in triplicate.

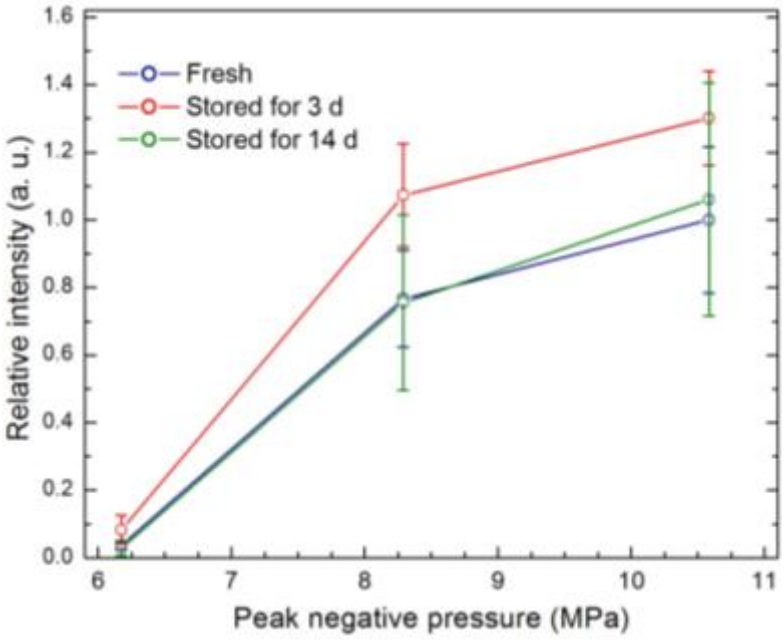

Figure S6. Relative response of as dispersed (fresh) and stored (in water, for 3 or 14 d) MCM-48R samples (4×10^{11} particles mL^{-1}) at different pressures. Error bars = 1 SD, studies were run in triplicate.

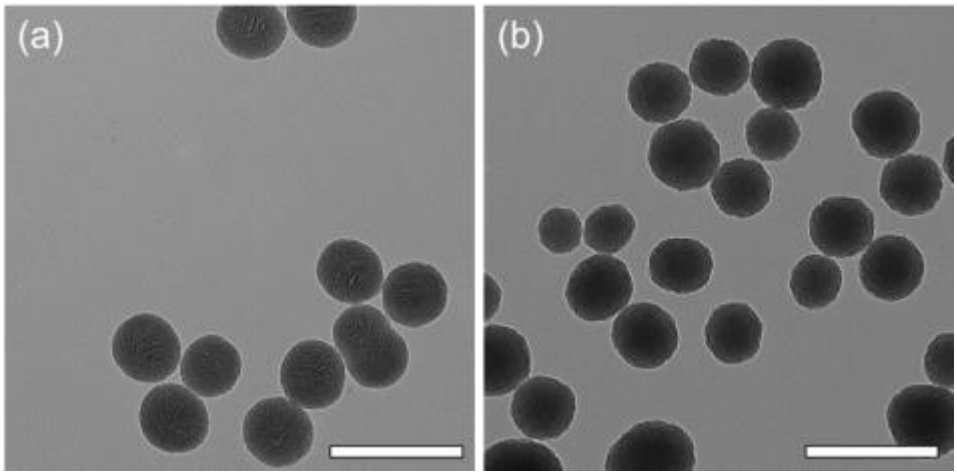

Figure S7. TEM images of (a) MCM-48D and (b) MCM-48MD.

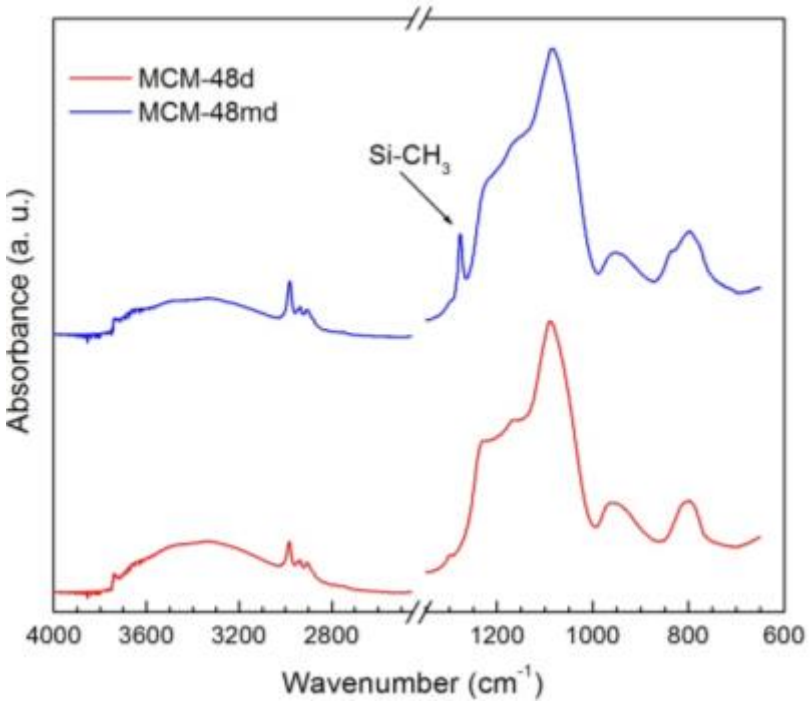

Figure S8. FTIR spectra of MCM-48D (top) and MCM-48MD (bottom).

Table S1. Particle sizes and concentrations of the MCM-48D and MCM-48MD as determined by TEM and NTA.

	TEM Size (nm)	**NTA Size (nm)**	**Particle number (in 1 mL)[a]**
MCM-48D	95±12	133±17	1.51×10^{12}
MCM-48MD	97±12	169±50	1.03×10^{12}

[a]Determined by NTA.