

Supplementary Information:
Nonspherical armoured bubbles vibration

G. Prabhudesai,¹ I. Bihi,¹ F. Zoueshtiagh,¹ J. Jose,¹ and M. Baudoin¹

¹*Univ. Lille, CNRS, Centrale Lille,
ISEN, Univ. Valenciennes, UMR 8520,
International Laboratory LEMAC/LICS - IEMN, F-59000 Lille, France*

PACS numbers:

Keywords:

I. SUPPLEMENTARY MOVIES

Movie S1

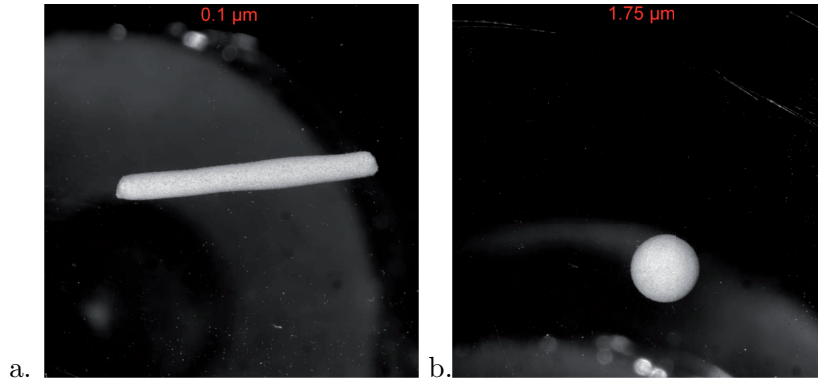


FIG. 1: **Movie S1**: Movie showing the dynamics of a cylindrical armored bubbles of length $L_c \approx 8.5$ mm and radius $R_c \approx 0.5$ mm excited with a vibration exciter at frequency $f_e = 3000$ Hz and an amplitude of vibration increasing every 2 minutes from $0.1 \mu\text{m}$ to $1.75 \mu\text{m}$. The movie was shot with a high resolution Hamamatsu C9300 High resolution at 5 frames per second. Times is accelerated by a factor of 6. a. Initial state. b. Final state.

Movie S2

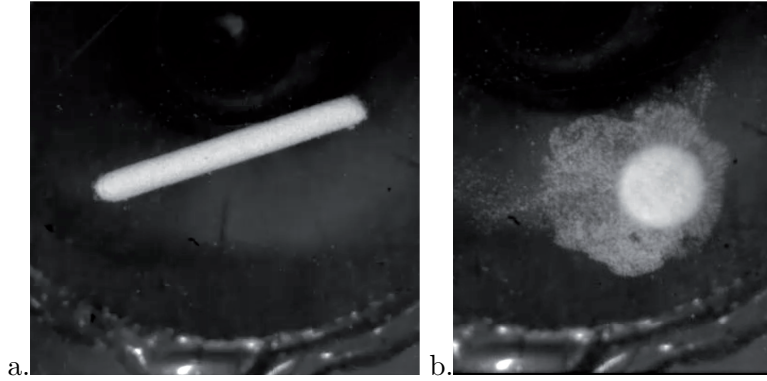


FIG. 2: **Movie S2**: Movie showing the dynamics of a cylindrical armoured bubbles of length $L_c \approx 8.5$ mm and radius $R_c \approx 0.5$ mm excited with a vibration exciter at a frequency $f_e = 2500$ Hz and an amplitude $A = 1.6 \mu\text{m}$ shot at 250 frames per second with a Photron SA3 high speed camera. Time is slowed down by a factor of 8. a. Initial state. b. Picture showing the particles dissemination once the bubble has reached a spherical shape.

Movie S3

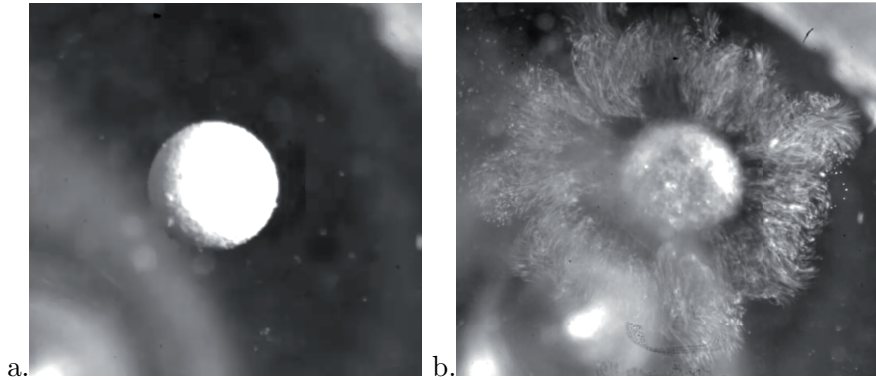


FIG. 3: **Movie S3**: Movie showing the dynamics of a spherical armoured bubbles of radius ≈ 1.25 mm excited with a vibration exciter at frequency $f_e = 1300$ Hz and amplitude, shot at 50 frames per second with a Photron SA3 high speed camera. Time is slowed down by a factor of 7. a. Initial state. b. Particles dissemination from the surface of the bubble.