

### **Publisher Correction**

#### **Unified framework for laser-induced transient bubble dynamics within microchannels(Scientific Reports, 10.1038/s41598-024-68971-x)**

Nagalingam, Nagaraj; Korede, Vikram; Irimia, Daniel; Westerweel, Jerry; Padding, Johan T.; Hartkamp, Remco; Eral, Hüseyin Burak

#### **DOI**

[10.1038/s41598-024-72091-x](https://doi.org/10.1038/s41598-024-72091-x)

#### **Publication date**

2024

#### **Document Version**

Final published version

#### **Published in**

Scientific Reports

#### **Citation (APA)**

Nagalingam, N., Korede, V., Irimia, D., Westerweel, J., Padding, J. T., Hartkamp, R., & Eral, H. B. (2024). Publisher Correction: Unified framework for laser-induced transient bubble dynamics within microchannels(Scientific Reports, 10.1038/s41598-024-68971-x). *Scientific Reports*, 14(1), Article 21226. <https://doi.org/10.1038/s41598-024-72091-x>

#### **Important note**

To cite this publication, please use the final published version (if applicable). Please check the document version above.

#### **Copyright**

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

#### **Takedown policy**

Please contact us and provide details if you believe this document breaches copyrights. We will remove access to the work immediately and investigate your claim.



OPEN

# Publisher Correction: Unified framework for laser-induced transient bubble dynamics within microchannels

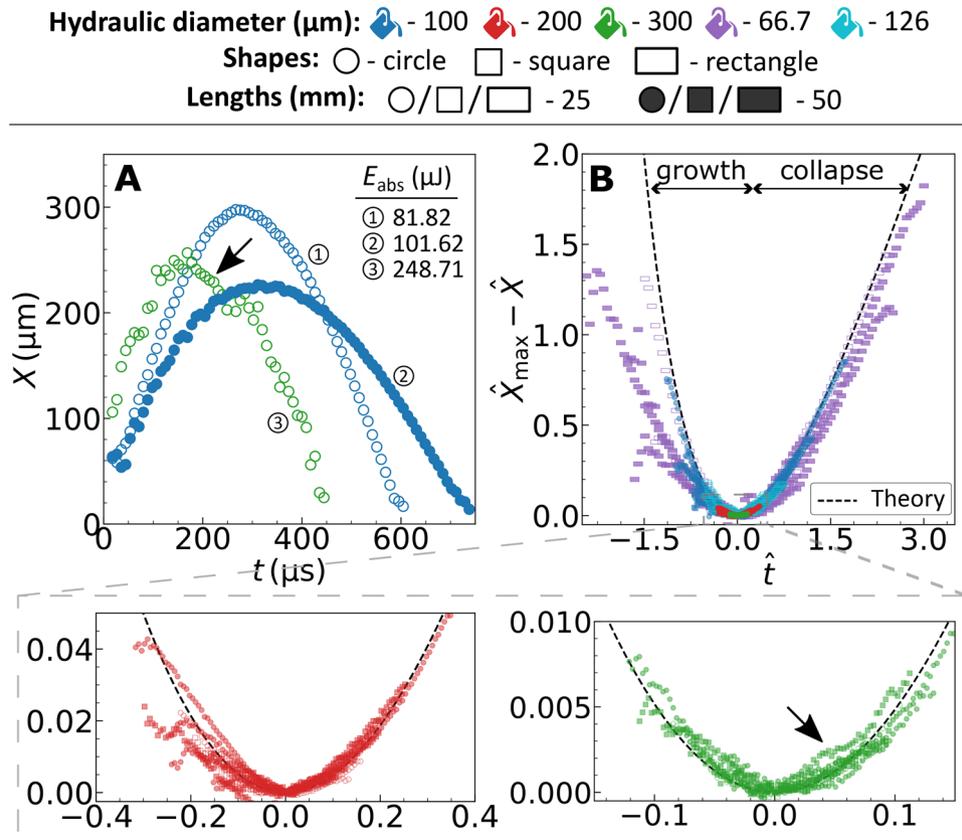
Nagaraj Nagalingam, Vikram Korede, Daniel Irimia, Jerry Westerweel, Johan T. Padding, Remco Hartkamp & Hüseyin Burak Eral

Correction to: *Scientific Reports* <https://doi.org/10.1038/s41598-024-68971-x>, published online 13 August 2024

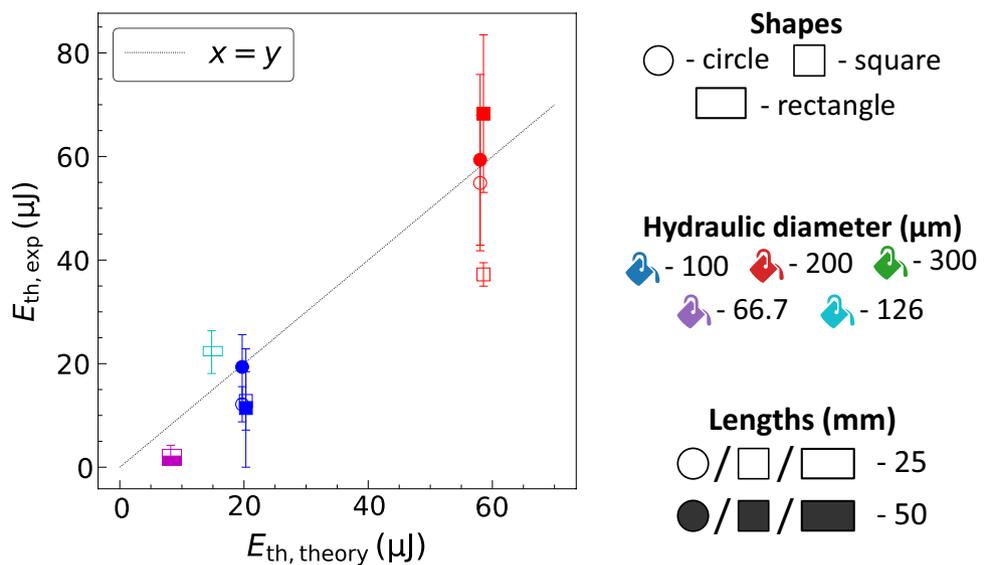
In the original version of this Article a previous rendition of Figure 2B, Figure 4 and Figure 5D was published. The original Figure 2, 4 and 5 and accompanying legends appear below.

The original Article has been corrected.

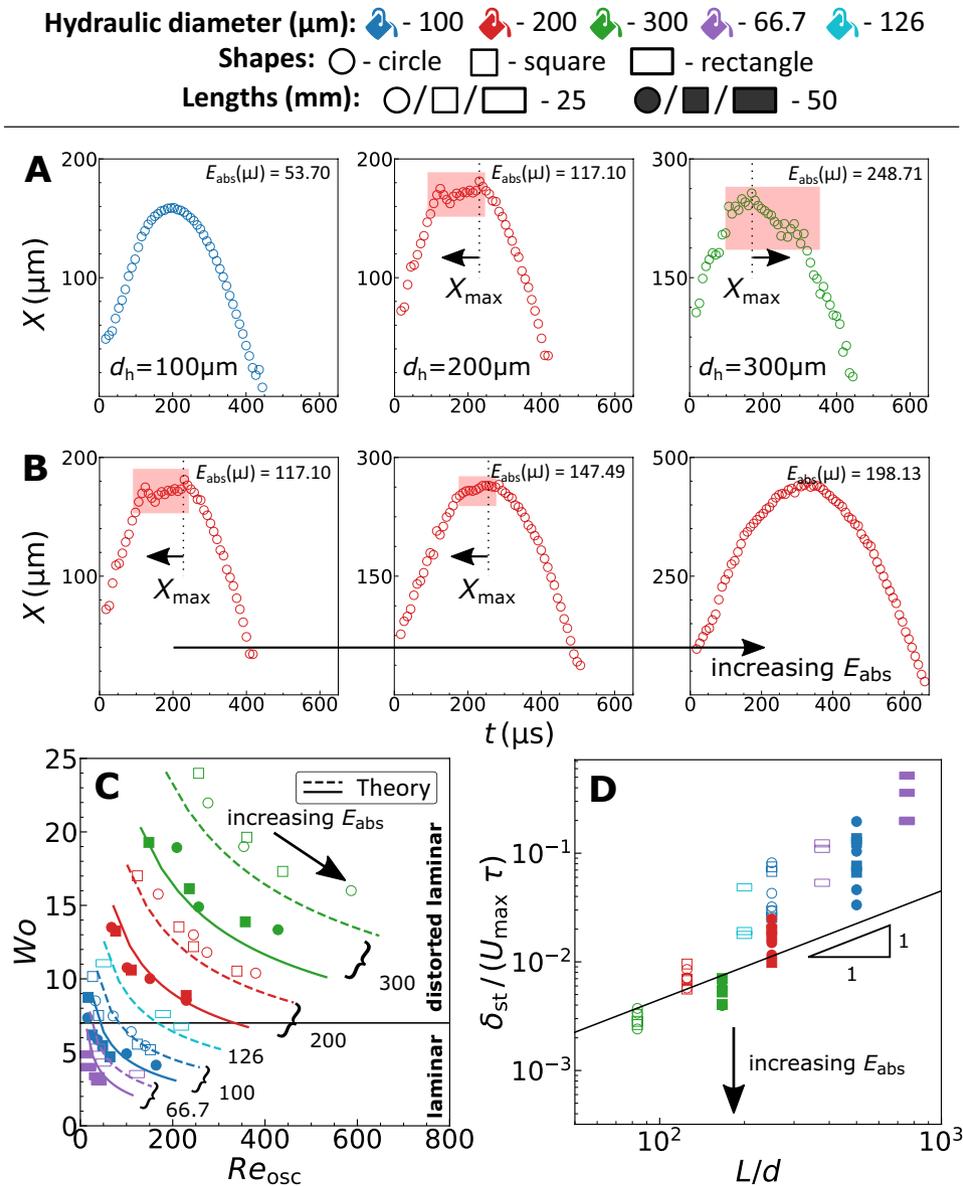
Published online: 11 September 2024



**Figure 2.** (A) Representative bubble dynamics for different channel geometries. (B) Universal motion of bubbles within channels with different size, shape and length. The dashed line represents the developed theory, Eq. (2). The marker colors represent the hydraulic diameters ( $d_h$ ), the shapes represent the cross-section and the facecolor represent the lengths ( $L$ ). The graphical marker symbols and colors established here are followed throughout this article. The black arrow represents the region of deviation(s) from the expected dynamics.



**Figure 4.** The threshold laser energy absorbed for bubble formation estimated from experiments ( $E_{th,exp}$ ) against theory ( $E_{th,theory}$ ) presented in Eq. (5).



**Figure 5.** (A,B) Representative dynamic bubble size curves illustrating the emergence of instabilities. The zones of the instabilities are highlighted using a shaded rectangular area. The arrows represent if the instabilities occur before or after  $X_{\text{max}}$ . (A) Illustrates the experimental data for different  $d_h$  with similar oscillation time. The instabilities emerge with increasing  $d_h$ . (B) Illustrates the data for  $d_h = 200 \mu\text{m}$  with increasing laser energies. The instabilities disappear with increasing  $E_{\text{abs}}$ . (C) Flow stability diagram with the transition line at  $W_0 = 734$ . The markers represent the experiments and the lines represent the analytical estimate. The numbers correspond to the channel hydraulic diameters (in  $\mu\text{m}$ ) with the dashed and solid lines representing the channel lengths  $L = 25$  and  $50$  mm, respectively. (D) The dimensionless convective timescale against the  $L/d_h$  aspect ratio. The partition line is a linear relation between the  $x$  and  $y$  axes with  $45 \times 10^{-6}$  as the slope and the origin as the intercept.

**Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

© The Author(s) 2024