



Delft University of Technology

## Laser-Induced Cavitation for Controlling Crystallization from Solution

Nagalingam, Nagaraj

### DOI

[10.4233/uuid:17b93f25-8f3f-4ab4-b5f8-ba446d923b6d](https://doi.org/10.4233/uuid:17b93f25-8f3f-4ab4-b5f8-ba446d923b6d)

### Publication date

2024

### Document Version

Final published version

### Citation (APA)

Nagalingam, N. (2024). *Laser-Induced Cavitation for Controlling Crystallization from Solution*. [Dissertation (TU Delft), Delft University of Technology]. <https://doi.org/10.4233/uuid:17b93f25-8f3f-4ab4-b5f8-ba446d923b6d>

### 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.

# Propositions

accompanying the dissertation

## Laser-Induced Cavitation for Controlling Crystallization from Solution

by

Nagaraj Nagalingam

1. The term “cavitation” in laser-induced bubble formation studies from literature is technically inaccurate. However crystallization using true cavitation might outperform laser based studies due to adiabatic conditions with some exceptions. (*This dissertation*)
2. The formation of crystal nuclei in undersaturated solutions are potentially feasible using lasers. (*This dissertation*)
3. In cavitation, the nature of crystal nucleation mechanism as homogeneous or heterogeneous is obscure. Either way, the laser-induced crystallization probability will increase with solution supersaturation and supplied laser energy. (*This dissertation*)
4. Laser-induced bubbles can very precisely alter both the kinetic and thermodynamic parameters influencing the rate of nucleation. (*This dissertation*)
5. Humans seek what they don't have, e.g., equality, or inequality when they have equality, provided it always benefits the individual.
6. I find science and religion to be similar. The difference comes in whether you believe in your work or god's work. Both requires passion and commitment.
7. The perception of success depends on the upbringing, morality and the extent of failures.
8. The existence of multiple meanings to words yet unique values to numbers across time and demographics makes science distinct.
9. Astrology is a physically documented machine learning technique.
10. The structure of a PhD program and a political tenure are the same. Both involves proposals, selection process, promotion of work, work that is often criticized and results different from proposals. Yet a politician makes money.

These propositions are regarded as opposable and defensible, and have been approved as such by the (co)promotor(s) dr. H. B. Eral (promotor), prof. dr. ir. J. T. Padding (promotor) and dr. ir. R. M. Hartkamp (copromotor).