

**Study of solidification cracking during laser welding in advanced high strength steels
A combined experimental and numerical approach**

Agarwal, Gautam

DOI

[10.4233/uuid:dd0e5ab0-1427-4ecc-a8d8-4e8f35050fca](https://doi.org/10.4233/uuid:dd0e5ab0-1427-4ecc-a8d8-4e8f35050fca)

Publication date

2019

Document Version

Final published version

Citation (APA)

Agarwal, G. (2019). *Study of solidification cracking during laser welding in advanced high strength steels: A combined experimental and numerical approach*. [Dissertation (TU Delft), Delft University of Technology]. <https://doi.org/10.4233/uuid:dd0e5ab0-1427-4ecc-a8d8-4e8f35050fca>

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

Study of solidification cracking during laser welding in advanced high strength steels

A combined experimental and numerical approach

by

Gautam Agarwal

1. A better understanding of solidification cracking does not necessarily lead to accurate prediction under any given set of welding conditions.
2. A hot ductility curve depends not only on the material but also on the experimental conditions.
3. In the context of weld solidification cracking, thermal models should also be validated with the observed solidification morphology.
4. Strain (rate) based criteria for solidification cracking exist due to the difficulty in defining the constitutive behaviour of the solidifying mush.
5. Tutoring by a PhD student while conducting research should be mandatory in The Netherlands.
6. Giving up meat will reduce carbon emissions more than by further reducing the weight of cars.
7. The productivity of a researcher depends not only on his/her intellect/hard-work but also on efficient use of available facilities and/or collaborations.
8. India's recent economic prowess is linked to its performance in the sport of Cricket.
9. The variation in the gradient of the progress as a function of time of a PhD trajectory is dictated by one's emotions.
10. "Strict liability" on the drivers of motorised vehicles in The Netherlands should not be construed as leeway by cyclists and pedestrians.

These propositions are regarded as opposable and defensible, and have been approved as such by the promoters, dr. ir. M.J.M. Hermans and prof. dr. I.M. Richardson.