

Accepted Manuscript

Stochastic prediction of apparent compressive stiffness of selective laser sintered lattice structure with geometrical imperfection and uncertainty in material property

Naoki Takano, Hideo Takizawa, Pin Wen, Kendo Odaka, Satoru Matsunaga, Shinichi Abe

PII: S0020-7403(17)31238-9
DOI: [10.1016/j.ijmecsci.2017.08.060](https://doi.org/10.1016/j.ijmecsci.2017.08.060)
Reference: MS 3998



To appear in: *International Journal of Mechanical Sciences*

Received date: 9 June 2017
Revised date: 11 August 2017
Accepted date: 25 August 2017

Please cite this article as: Naoki Takano, Hideo Takizawa, Pin Wen, Kendo Odaka, Satoru Matsunaga, Shinichi Abe, Stochastic prediction of apparent compressive stiffness of selective laser sintered lattice structure with geometrical imperfection and uncertainty in material property, *International Journal of Mechanical Sciences* (2017), doi: [10.1016/j.ijmecsci.2017.08.060](https://doi.org/10.1016/j.ijmecsci.2017.08.060)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Highlights

- Imperfections happened when unexperienced product was manufactured by SLS without know-hows
- Geometrical imperfections are measured statistically associated with manufacturing parameters.
- Random physical parameter are set based on the scattering of measured density.
- Numerical results on the reduction ratio of the stiffness are compared with experimental results, and both coincid qualitatively.
- The proposed method is helpful because property of product can be predicted before manufacturing.

Download English Version:

<https://daneshyari.com/en/article/7174009>

Download Persian Version:

<https://daneshyari.com/article/7174009>

[Daneshyari.com](https://daneshyari.com)