



*applied sciences*



*Special Issue Reprint*

## **Fatigue and Fracture Behaviour of Additively Manufactured Mechanical Components**

[www.mdpi.com/books/reprint/3405](http://www.mdpi.com/books/reprint/3405)

Edited by  
Roberto Citarella  
Paulo M. S. T. De Castro  
Angelo Maligno

ISBN 978-3-03943-665-1 (Hardback)  
ISBN 978-3-03943-666-8 (PDF)



The advent of additive manufacturing (AM) processes applied to the fabrication of structural components creates the need for design methodologies supporting structural optimization approaches that take into account the specific characteristics of the process. While AM processes enable unprecedented geometrical design freedom, which can result in significant reductions of component weight, on the other hand they have implications in the fatigue and fracture strength due to residual stresses and microstructural features. This is linked to stress concentration effects and anisotropy that still warrant further research. This Special Issue of Applied Sciences brings together papers investigating the features of AM processes relevant to the mechanical behavior of AM structural components, particularly, but not exclusively, from the viewpoints of fatigue and fracture behavior. Although the focus of the issue is on AM problems related to fatigue and fracture, articles dealing with other manufacturing processes with related problems are also included.



Order Your Print Copy  
You can order print copies at  
[www.mdpi.com/books/reprint/3405](http://www.mdpi.com/books/reprint/3405)

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



## Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



## Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



## High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



## High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



## Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.