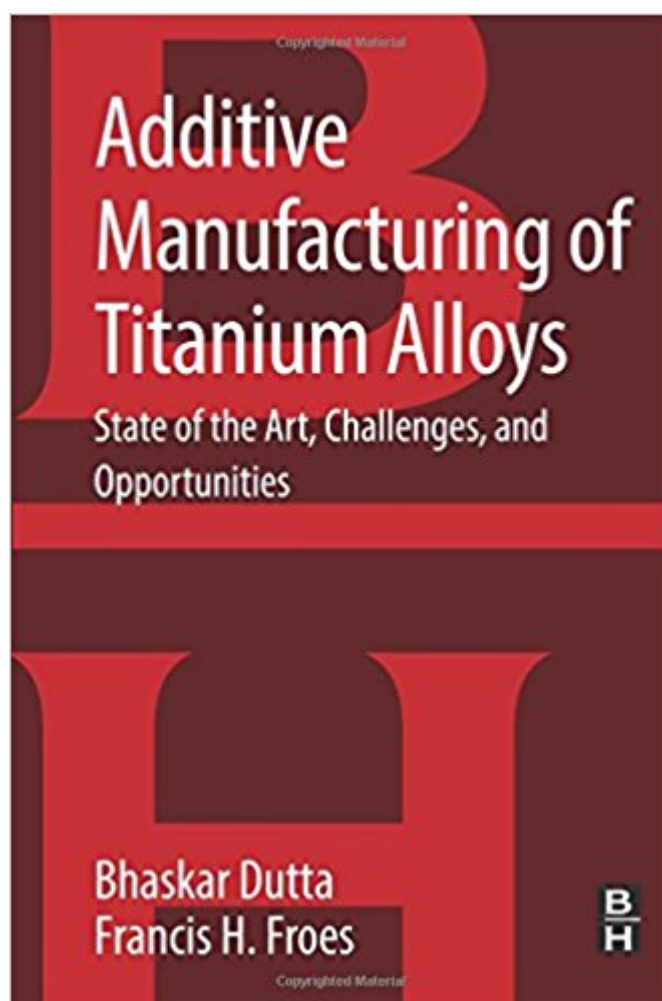


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# Additive Manufacturing Of Titanium Alloys: State Of The Art, Challenges And Opportunities



## Synopsis

Additive Manufacturing of Titanium Alloys: State of the Art, Challenges and Opportunities provides alternative methods to the conventional approach for the fabrication of the majority of titanium components produced via the cast and wrought technique, a process which involves a considerable amount of expensive machining. In contrast, the Additive Manufacturing (AM) approach allows very close to final part configuration to be directly fabricated minimizing machining cost, while achieving mechanical properties at least at cast and wrought levels. In addition, the book offers the benefit of significant savings through better material utilization for parts with high buy-to-fly ratios (ratio of initial stock mass to final part mass before and after manufacturing). As titanium additive manufacturing has attracted considerable attention from both academicians and technologists, and has already led to many applications in aerospace and terrestrial systems, as well as in the medical industry, this book explores the unique shape making capabilities and attractive mechanical properties which make titanium an ideal material for the additive manufacturing industry. Includes coverage of the fundamentals of microstructural evolution in titanium alloys Introduces readers to the various Additive Manufacturing Technologies, such as Powder Bed Fusion (PBF) and Directed Energy Deposition (DED) Looks at the future of Titanium Additive Manufacturing Provides a complete review of the science, technology, and applications of Titanium Additive Manufacturing (AM)

## Book Information

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## Customer Reviews

Bhaskar Dutta, Ph.D. has over 26 years of experience in the field of metallurgy and metal

processing, including 11 years in the Additive Manufacturing (AM) industry. He has been directly involved in participating and directing AM research and technology development as well as commercial product development using AM. He has over 15 publications and more than 30 presentations in the field of AM. He also has 7 pending patents in this area. Francis H Froes, Ph.D. has been involved in the Titanium field with an emphasis on Powder Metallurgy (P/M) for more than 40 years. He was employed by a primary Titanium producer-Crucible Steel Company-where he was leader of the Titanium group. He was the program manager on a multi-million dollar US Air Force (USAF) contract on Titanium P/M. He then spent time at the USAF Materials Lab where he was supervisor of the Light Metals group (which included Titanium). This was followed by 17 years at the University of Idaho where he was a Director and Department Head of the Materials Science and Engineering Department. He has over 800 publications, in excess of 60 patents, and has edited almost 30 books-the majority on various aspects of Titanium again with an emphasis on P/M. He gave the key-note presentation at the first TDA (ITA) Conference. In recent years he has co-sponsored four TMS Symposia on Cost Effective Titanium featuring numerous papers on P/M. He is a Fellow of ASM, is a member of the Russian Academy of Science, and was awarded the Service to Powder Metallurgy by the Metal Powder Association. Recently he has been a co-author of three comprehensive papers on the Additive Manufacturing of Titanium.

for my best friend, This is my first review ever. This product is so sharp it is scary! Best investment ever at a great price! Received as described. awesome and very well. delivery so quickly.

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