

<<第十二届世界钛会论文集（卷1）>>

图书基本信息

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## <<第十二届世界钛会论文集（卷1）>>

### 内容概要

第十二届钛会是系列会议的第十二届，钛会自1968年开始，每四年举办一次，旨在召集世界钛界同仁，共商钛科技发展大计。

钛会覆盖了钛的各个方面，包括从矿石到成品的完整的生产路线，新合金和加工的发展，微观结构和性能的评价以及所有领域钛的应用。

世界七大钛国，包括美国、俄罗斯、日本、英国、法国、中国和德国组成的国际组织委员会保证了钛研究、发展和应用的各个新的、感兴趣领域都将被讨论。

书籍目录

Plenary Lectures

Advances in Titanium Research and Technology in the UK

Malcolm Ward-Close , Martin Jackson

Developments in Research and Applications in the Titanium Industry  
in the USA

Rodney R . Boyer , James C . Williams

Recent Trends in CIS Titanium Industry Developments and Research

Activities

Orest M . Ivasishin , Andrey V.Alexandrov

Recent Trends in Titanium Research and Development in Japan

Mitsuo Niinomi

Recent Titanium Research and Developments in Germany

Lothar Wagner

Titanium Research and Development in France

Alain Vassel

Recent Progress of Titanium Industry . Research and Development in  
China

Lian ZHOU , Hui CHANG , Xiangdong WANG

1.Extractive Metallurgy

2.Wrought Processing

3.Microstructure Evolution

4.Properties

5.Intermetallics&MMCs

6.Component Manufacturing

7.Near Net Shape Processing

8.Environmental Behavior

9.Aerospace Applications

10.Biomedical and Healthcare Applications

11.Emerging Applications and Market

12.Marine Applications

Author index

Subject Index

## 章节摘录

In the present investigation, with the help of the basic theory of stereology and quantitative metallography and analysis platform of quantification image software, a rigorous and available model of quantification of microstructural features was developed. Previously, the phase volume fraction was measured using area method, and the mean intercept method was employed to measure the grain and colony size. Based on the conventional methods mentioned above, a novel approach that measuring the mean thickness of lamellae in colony using Boolean operation is proposed in this work, which is shown in Figure 1. The feature parameters of microstructures in titanium alloys extracted using this method include phase volume fraction, grain size, thickness of Widmanstätten lamellae, colony scale size, thickness and orientation of a phase. It not only reduces the error which is associated with the lineation by users but also enhances the reliability of measured data. Moreover, in order to unify the measurement standard of a phase in the basket weave, mixed and equiaxed microstructures of typical titanium alloys and take the continuity and simplicity of quantification into consideration, the evaluated parameter of Feret Ratio was referred to present the evolution of phase and modeling the correlation of process, microstructure and mechanical property of titanium alloys. The orientation of a phase was presented by the angle to the primary axis of a phase and its vertical direction, which suggests that the characterization model of evolution and orientation behavior in a phase during hot deformation of titanium alloys has been established, as shown in Figure 2. It should be noted that the proposed model has been successfully applied to quantitatively exhibit the dynamic evolution of a phase in TC17 titanium alloy with lamellar microstructure. Hence, the realization of quantification characterization about the evolution of lamellar phase takes place of the traditional method that whether the globularization phenomenon occurred. ....

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