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*coverage of*

*ceramics, their*

*structures, and*

*properties, with a*

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*distinct emphasis  
on solid state  
physics and  
chemistry. Key  
equations are  
derived from first  
principles to  
ensure a thorough  
understanding of  
the concepts  
involved. The book  
divides naturally  
into two parts.*

*Chapters 1 to 9*

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*consider bonding in ceramics and their resultant physical structures, and the electrical, thermal, and other properties that are dependent on bonding type. The second part (Chapters 11 to 16) deals with those factors that are*

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*determined by  
microstructure,  
such as fracture  
and fatigue, and  
thermal, dielectric,  
magnetic, and  
optical properties.  
Linking the two  
sections is Chapter  
10, which  
describes  
sintering, grain  
growth, and the  
development of*

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microstructure.

*Fundamentals of  
Ceramics* is ideally  
suited to senior  
undergraduate and  
graduate students  
of materials  
science and  
engineering and  
related subjects.  
This book reviews  
problems in the  
mechanical  
behaviour of

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*cyclically loaded  
metallic materials,  
primarily with  
regard to the  
nature of the  
fatigue process.*

*The first edition of  
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present second  
edition represents  
a revised form of  
the original book  
and also covers*

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*developments in  
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*metallurgical*

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*occupies a unique*

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and their technical  
solution in specific  
practical cases.*

*The book provides  
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knowledge on  
physical  
metallurgical  
processes that  
accompany and  
affect the fatigue*

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*of metallic materials, and also*

*presents the*

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*applying the new*

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west and cover a  
relatively large  
field in a concise  
manner. The work  
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fields of materials  
science and*

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*examine how the*

*connection*

*between structure*

*and properties is*

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materials and  
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deformation,  
fracture, and  
fatigue. The text  
emphasizes

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materials to obtain  
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and avoiding  
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**these five**  
**stages can be**  
**seamlessly**



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*illustrates how*  
*the design*  
*methods can*  
*work together*  
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*book's*  
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problems as  
well as other  
design  
problems.***

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*engineering methods*

*for testing structural*

*materials to obtain*



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and ready-to-use  
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and upper-level  
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of materials.*

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on crystal*

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**examples**

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as well as the  
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and fracture  
mechanisms of  
engineering  
materials in an  
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and practicing  
engineers that  
are learning for  
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failure of  
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materials or wish  
to deepen their  
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on these topics.  
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includes specific  
topics seldom  
covered in other  
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continues describing,  
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place and attention.  
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mechanics to be  
somewhat  
problematic,  
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This serves as a  
kind of a program  
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chapters. The  
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predictions of  
fatigue properties  
and designing  
against fatigue.  
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cannot be realized

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which can affect  
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