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MAX Phases and Ultra-High Temperature Ceramics for Extreme Environments



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Ceramics are a versatile material, more so than is widely known. They are thermal resistant, poor electrical conductors, insulators against nuclear radiation, and not easily damaged, making ceramics a key component in many industrial processes.

MAX Phases and Ultra-High Temperature Ceramics for Extreme Environments investigates a new class of ultra-durable ceramic materials, which exhibit characteristics of both ceramics and metals. Readers will explore recent advances in the manufacturing of ceramic materials that improve their durability and other physical properties, enhancing their overall usability and cost-effectiveness. This book will be of primary use to researchers, academics, and practitioners in chemical, mechanical, and electrical engineering. This book is part of the Research Essentials collection.

Topics Covered:

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- Hot Engine Turbines
- Irradiation Resistance
- Manufacturing Methods
- MAX Phase Ceramics
- Microstructure Properties
- Oxidation Resistance
- Structural Stability
- Thermal Shock Resistance
- Thermochemical Stability

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I. M. Low gained his B. Eng (Hons) and Ph.D. degrees in Materials Engineering from Monash University prior to taking up research or academic positions at University of Sydney, University of Auckland and then Curtin University. He was awarded a Visiting Professorship by the Japanese Ministry of Education to work with Prof. Niihara at Osaka University in 1995/1996. He is a Fellow of the Australian Ceramic Society and has served on the editorial board of the *Journal of Australian Ceramic Society* and *Journal of Ceramics*. He is also the recipient of the prestigious 1996 Joint Australian Ceramic Society/Ceramic Society of Japan Ceramic Award for excellence in ceramics research. Prof. Low has edited 8 books and is author of over 250 archival research papers. He has an h-index of 18 and 1280 citations.



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