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Aluminum: Technology, Applications And Environment: A Profile Of A Modern Metal Aluminum From Within





Synopsis

Aluminum: Technology, Applications, and Environment is an impressive book that has evolved into the definitive educational text and reference book for aluminum industry participants, a broad range of aluminum fabricators and users, students, and the scientific, engineering, and academic community. This extraordinary book incorporates significant inputs from outstanding aluminum industry and academic participants throughout North America and Europe and is designed to fulfill the needs of both technically-trained and non-technical individuals. The text builds from a brief history of aluminum through its various production and processing steps with a clear and refreshing description of relationships between processing steps, structure, and properties of aluminum alloys. Expert attention is given to various casting processes and the role of metal guality and casting parameters and methods. Descriptions of key mechanical test methods and property relationships, along with valuable descriptions of major industrial forming processes and their underlying thermomechanical principles are included. The fundamental principles of alloying aluminum with various elements and the use of heat treating methods to achieve specific properties are also included, along with an excellent treatment of corrosion principles and a broad range of methods used to enhance corrosion protection. An effective description of modern joining technologies and principles for the manufacture of various aluminum structures is included for the practitioner. Various examples are given regarding the utilization of composition controls, microstructure, and manufacturing process controls to achieve the desired combinations of properties for various applications, including can making. The significance of computer-aided materials design, computer-aided engineering of components, and computer-aided manufacturing methods are recognized. The author also addresses the current relative competitive properties and trade-offs regarding aluminum versus magnesium, titanium, plastics, composite materials, and steel. One of the most significant additions to the sixth edition of this book is a highly informative description of a wide array of emerging applications for aluminum, ranging from aerospace, buildings, bridges, infrastructure, and automotive, to marine, rail, packaging and durable goods.

Book Information

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Customer Reviews

Text: English (translation) Original Language: German

Very nice book, specially for those starting now with Aluminum Metallurgy. The text is an evolution of the old book "Aluminum Viewed from Within", same author, basic and mandatory text for metallurgists. This new edition brings much more illustrations from the "outside" world of Aluminum, the Aluminum industry .

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