

1. Record Nr.	UNINA9910765765603321
Titolo	Mechanical Behaviour of Aluminium Alloys // edited by Ricardo Branco, Filippo Berto and Andrei Kotousov
Pubbl/distr/stampa	Basel : , : MDPI, , 2018 ©2018
ISBN	3-03897-321-1
Descrizione fisica	1 online resource (144 pages) : illustrations
Disciplina	620.186
Soggetti	Aluminum alloys
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	About the Special Issue Editors . vii -- Ricardo Branco, Filippo Berto and Andrei Kotousov Special Issue on "Mechanical Behaviour of Aluminium Alloys" Reprinted from: Appl. Sci. 2018, 8, 1854, doi: 10.3390/app8101854 1 -- Elisa Fracchia, Silvia Lombardo and Mario Rosso Case Study of a Functionally Graded Aluminum Part Reprinted from: Appl. Sci. 2018, 8, 1113, doi: 10.3390/app8071113 4 -- Caiqi Zhao, Yangjian Zhao and Jun Ma The Stability of New Single-Layer Combined Lattice Shell Based on Aluminum Alloy Honeycomb Panels Reprinted from: Appl. Sci. 2017, 7, 1150, doi: 10.3390/app7111150 13 -- Oscar Rodriguez-Alabanda, Miguel A. Narvaez, Guillermo Guerrero-Vaca and Pablo E. Romero Manufacturing of Non-Stick Molds from Pre-Painted Aluminum Sheets via Single Point Incremental Forming Reprinted from: Appl. Sci. 2018, 8, 1002, doi: 10.3390/app8061002 25 -- Torsten E. M. Staab, Paola Folgati, Iris Wolfertz and Martti J. Puska Stability of Cu-Precipitates in Al-Cu Alloys Reprinted from: Appl. Sci. 2018, 8, 1003, doi: 10.3390/app8061003 36 -- Ning Li, Hong Yan and Zhi-Wei Wang Effects of Heat Treatment on the Tribological Properties of Sicp/Al-5Si-1Cu-0.5Mg Composite Processed by Electromagnetic Stirring Method Reprinted from: Appl. Sci. 2018, 8, 372, doi: 10.3390/app8030372 . 49 -- Phillip Dumitraschkewitz, Helmut Clemens, Svea Mayer, David Holec Impact of Alloying on Stacking Fault Energies in -TiAl Reprinted from: Appl. Sci. 2017, 7, 1193, doi: 10.3390/app7111193 64 -- Iban Vicario Gomez, ´ Ester Villanueva Viteri, Jessica Montero, Mile

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Sommario/riassunto

Aluminium alloys are the most common non-ferrous materials utilised for a wide range of engineering applications, namely, automotive, aerospace, mould and structural industries, among others. The wide spread of these alloys in the modern world is due to the unique combination of material properties combining lightness, excellent strength, corrosion resistance, toughness, electrical and thermal conductivity, recyclability, and manufacturability. Last but not least, the relatively low cost of aluminium extrusion is important as it makes aluminium alloys very attractive for applications in different key sectors of the world economy. Despite great interest, extensive previous research, and knowledge accumulated in the past, recent advances in production and processing technologies, combined with the development of new and more ingenious and competitive products, require a profound understanding of the physical and mechanical behaviour of such alloys, specifically in terms of modelling and predictions of the fracture and fatigue life of aluminium alloy components. This Special Issue aims to gather scientific contributions from authors working in different scientific areas, including the improvement and modelling of mechanical properties, alloying design and manufacturing techniques, the characterization of microstructure and chemical composition, and advanced applications.
