

1. Record Nr.	UNINA9910557436603321
Autore	Tolnai Domonkos
Titolo	Processing and Characterization of Magnesium-Based Materials
Pubbl/distr/stampa	Basel, Switzerland, : MDPI - Multidisciplinary Digital Publishing Institute, 2021
Descrizione fisica	1 electronic resource (118 p.)
Soggetti	Technology: general issues
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	<p>Due to their lightweight and high specific strength, Mg-based alloys are considered as substitutes to their heavier counterparts in applications in which corrosion is non-relevant and weight saving is of importance. Furthermore, due to the biocompatibility of Mg, some alloys with controlled corrosion rates are used as degradable implant materials in the medical sector. The typical processing route of Mg parts incorporates a casting step and, subsequently, a thermo-mechanical treatment. In order to achieve the desired macroscopic properties and thus fulfill the service requirements, thorough knowledge of the relationship between the microstructure, the processing steps, and the resulting property profile is necessary. This Special Issue covers in situ and ex situ experimental and computational investigations of the behavior under thermo-mechanical load of Mg-based alloys utilizing modern characterization and simulation techniques. The papers cover investigations on the effect of rare earth additions on the mechanical properties of different Mg alloys, including the effect of long-period stacking-ordered (LPSO) structures, and the experimental and computational investigation of the effect of different processing routes.</p>