

Table of Contents

Preface

Chapter 1: Titanium Aluminides

Powder Metallurgy and Heat Treatment Effects on Microstructure in a γ-TiAl Ti-4522XD Alloy	
B. Ruiz-Palenzuela, I. Sabirov and E.M. Ruiz-Navas	3
Sintering Titanium Aluminides with Co Addition	
L. Quaglio, W.A. Monfardini and J. Soyama	13
Effect of Heat Treatment Temperature and Rolling on Microstructure and Mechanical Property of Powder Metallurgy Ti43Al9V(Y) Alloy in Electron Backscattering Diffraction	
Y.Y. Chen, D.D. Zhang, T.Z. He, P. Sun and L.Y. Bao	21

Chapter 2: Titanium Matrix Composites

Recent Developments in Producing Highly Dense Ti Matrix Composites via Powder Metallurgy Approaches	
Y.C. Song, O. Stasiuk, D.G. Savvakín and O.M. Ivasishin	31
Additive Manufacturing of TiBw-Reinforced Titanium Matrix Composites Fabricated by Electron Beam Melting: Microstructure and Mechanical Properties	
S.F. Li, D.X. Hui and D. Pan	41
Optimizing Titanium-Boron Carbide Composites for Aerospace Manufacturing via Plasma Metal Deposition	
C.M. Arévalo, E.M. Perez-Soriano, E. Ariza, M. Kitzmantel and I. Montealegre-Meléndez	49
Microstructural Development of Ti-35Nb-TiC Metal Matrix Composites	
V.A.R. Henriques, R.O.P. de Lima, M.H. Lapena, J. Assis and A.M. Gama	57
Enhancing Wear Resistance of Titanium Alloys: Insights from Tribological Testing	
I. Montealegre-Meléndez, C.M. Arévalo, E. Neubauer and E.M. Perez-Soriano	65
Improvement of the Mechanical Properties of a P/M Ti-6Al-4V Alloy with Additions of Carbon and Silicon	
N. Burgos and J.M. Martín	73

Chapter 3: Metal Injection Molding and Sinter-Based Additive Manufacturing

Suitability of Novel Titanium Powder for Metal Injection Moulding Application	
V. Kruzhanov, A. Gonchar, V. Troshchylo, A. Brodskyy, V. Yarovynskyi, O. Chukhmanov and A. Yarovynskyi	83
Interaction of Binder and Powder in Processing of Titanium by MEX-AM	
C. Kukla, E. Gordo Odériz, S. Schuschnigg, J. Villemur, P. Luna and C. Holzer	93
Processing of a Beta Titanium Alloy by Metal Injection Molding (MIM)	
R.O.P. de Lima, M.H. Lapena, A.M. Gama and V.A.R. Henriques	103
Comparing Lithography-Based Metal Manufacturing for Titanium with Established Processes such as Cold Metal Fusion	
T. Marter and F. Gerdtz	113