

## Table of Contents

### Preface

## Chapter 1: Fractographic Analysis

<b>Microstructure and Fatigue Behavior of High-Performance Aluminum Alloy Al2024 Produced by Laser Powder Bed Fusion</b> R. Konečná, T. Varmus, G. Nicoletto and F. Uriati	3
<b>Analysis of Cracks of Thermostats Casings Made of Brass</b> J. Kasl, D. Aišman and R. Fikrlová	9
<b>The Fractographic Analysis of Tensile and Fatigue Fracture Surfaces in Secondary A356 Aluminum Alloy with a Higher Concentration of Iron</b> L. Kucharíková, E. Tillová, M. Chalupová, M. Uhríčík, L. Pastierovičová and J. Belan	15
<b>Fracture Mechanisms of Austenitic Steel Caused by Dynamic Tests</b> M. Uhríčík, P. Palček, M. Chalupová, L. Kucharíková, V. Zatkálíková, J. Belan, M. Oravcová and L. Pastierovičová	21
<b>High-Temperature Low Cycle Fatigue of Nickel-Based Superalloy IN738LC</b> I. Sulák, A. Chlupová and K. Obrtlík	27
<b>Metallography of Fractured Aluminium Alloys for the Transmission System's Elements</b> K. Kreislova and L. Turek	33
<b>Investigation of Fatigue Failure in Electric Locomotive Axle</b> S. Pytel	39
<b>Dynamic Fracture Characteristics of High-Strength Steel</b> M. Kianicova, I. Dlouhý, P. Šandera, J. Horníková and J. Pokluda	45
<b>Creep Resistance and Microstructure Evolution in HR3C-P92 Heterogeneous Welds</b> V. Vodárek, Z. Kuboň, P. Váňová, P. Renáta and S. Langer	51
<b>Analysis of Tribodegradation Factors Limiting the Life of the Molds</b> J. Brezinová, M. Džupon, J. Viňáš, J. Brezina and J. Hašul'	57

## Chapter 2: Thin Films and Coatings for Optics and Photovoltaics

<b>Study the Effect of Deposition Time on Optical Properties of CdZnS Nanofilms</b> K.A. Mohammed, R.S. Hessian, S.J. Musa, M.A. Alkhafaji and R.S. Zabibah	65
<b>Optimization of Multilayer Antireflection Coatings for Visible and Infrared Regions</b> S. Abbas, A.A. Anber and A.A. Al-Azawy	73