

Table of Contents

Preface**Chapter 1: Thermodynamic Basis for Dissolution of Non-Metallic Elements in Liquid Metals**

M. Shimoji and T. Itami 1

Chapter 2: Metallic Bonding and Electronegativity in Liquid Metals

M. Shimoji and T. Itami 13

Chapter 3: Electron Theory of Liquid Metals and Alloys

M. Shimoji and T. Itami 29

Chapter 4: The Structure of Liquid Metals and Metal-Non-Metal Solutions

M. Shimoji and T. Itami 57

Chapter 5: Statistical Thermodynamics of Liquid Mixtures

M. Shimoji and T. Itami 77

Chapter 6: Solutions of Non-Metals in Liquid Metals

M. Shimoji and T. Itami 107

Chapter 7: Solutions of Non-Metals in Liquid Alloys

M. Shimoji and T. Itami 155

Chapter 8: Atomic and Electronic Transport in Liquid Metals Containing Non-Metals

M. Shimoji and T. Itami 183

Chapter 9: Interfacial Properties of Liquid Metals Containing Non-Metals

M. Shimoji and T. Itami 207

Chapter 10: Inclusions in Liquid Alloys

M. Shimoji and T. Itami 233

Appendixes 245