

Table of Contents

Preface

Application of Ab Initio Electronic Structure Calculations in Construction of Phase Diagrams of Metallic Systems with Complex Phases

M. Sob, A. Kroupa, J. Pavlů and J. Vřeštál 1

Investigation of Phase Transformation in Thin Film Using Finite Element Method

M. Asle-Zaeem and S.D. Mesarovic 29

Statistical Thermodynamics and Kinetics of Long-Range Order in Metal-Doped Graphene

T.M. Radchenko and V.A. Tatarenko 43

Statistical Thermodynamics and Surface Phase Transitions of Interacting Particles

Adsorbed on One-Dimensional Channels Arranged in a Triangular Cross-Sectional Structure

P.M. Pasinetti, F. Romá, J.L. Riccardo and A.J. Ramirez-Pastor 73

Order-Disorder Transitions and Thermodynamic Properties of M-Type Hexaferrites

S.C. Parida 101

Structural Stability and Phase Transitions in *f*-Electron Based Systems

N.V. Chandra Shekar, P.C. Sahu, N.R. Sanjay Kumar, M. Sekar, N. Subramanian, V. Kathirvel, S. Chandra and M. Rajagopalan 123

Structural and Magnetic Transitions in Rapidly Solidified Heusler Alloys Ribbons

J.J. Suñol, J. Saurina, R. Varga, B. Hernando, J.L. Sánchez Llamazares, J.D. Santos and V.M. Prida 143

Displacive Phase Transformations

V. Paidar and A. Ostapovets 159

Pressure-Temperature Phase Relations in Complex Hydrides

B. Sundqvist 175

Recent Developments in Co-Base Alloys

S.K. Sahay and B. Goswami 197