

# Table of Contents

## Peface

<b>Lamellar Eutectic Growth: A Discussion of the Question of Pattern Selection</b>	1
C. Caroli and G. Faivre	
<b>Monotectic Microstructure in a Zn-0.6at% Bi Alloy at Near Equilibrium and Nonequilibrium Situation</b>	11
B. Majumdar, R. Goswami and K. Chattopadhyay	
<b>Dynamics of Transverse Fluctuations in Interfaces</b>	19
M. Barma	
<b>Unusual Patterns in the Growth of Smectic Liquid Crystals</b>	27
R. Pratibha, G. Basappa and N.V. Madhusudana	
<b>Dynamics and Nonlinear Effects during Deuterium Implantation of Copper</b>	39
K. Krishan and B. Panigrahi	
<b>Phase Transformations Induced by Ball Milling in some Alloys and in some Oxides</b>	49
G. Le Caër, S. Bégin-Colin, P. Delcroix, L. Lutterotti, B. Malaman, A. Mocellin, D. Osso and O. Tillement	
<b>Mechanically Induced Atomic Disorder in Ordered Alloys and Phase Transformations Far from Equilibrium</b>	59
H. Bakker, H. Yang and G.F. Zhou	
<b>Non-Equilibrium Roughening and Mixing in Crystals under Shear</b>	69
P. Bellon and R.S. Averback	
<b>Generation of Chaotic Structure by the Repetition of Cold Working</b>	77
K.N. Ishihara, T. Matsumoto, A. Otsuki and P.H. Shingu	
<b>Phase Transformations Involving Ordering and Phase Separation: A Monte Carlo Study</b>	87
T.C. Munro, F. Haider and G. Martin	
<b>Modelling Diffusion Controlled Kinetics in Equilibrium and Driven Alloys</b>	97
G. Martin, P. Bellon and F. Soisson	
<b>Packing of Mutually Interacting Powder Particles under Gravity</b>	117
S.S. Manna and D.V. Khakhar	
<b>Interfacial Dynamics in Dilute and Random-Exchange Magnets: Computational Approaches to Domain Growth</b>	125
D. Chowdury	
<b>Emergence of Scale Invariance in Martensite Growth</b>	133
M. Mohan Rao, S. Sengupta and H.K. Sahu	
<b>Time Series Analysis - A Review</b>	141
M.C. Valsakumar, K.P.N. Murthy and S. Venkadesan	
<b>Response to Pulsed Disturbances in III-Condensed Systems and Possible Prediction of Catastrophes</b>	155
M. Acharyya and B.K. Chakrabarti	
<b>Multirange Fractals in Materials</b>	163
C.W. Lung	
<b>Microscopic Aspects of Plastic Flow Instability</b>	173
G. Saada	
<b>Short-Range Order, Slip Coarsening and Slip Instabilities in Alloys</b>	187
G. Kostorz	
<b>Simulating Shear Bands in Granular Solids</b>	195
H.J. Herrmann, A. Polyakov and H.-. Tillemans	
<b>Computer Simulations on Dislocation Patterning</b>	205
R. Fournet and J.M. Salazar	
<b>3-D Simulations of Dislocations and Plasticity</b>	217
L.P. Kubin, B. Devincre, G.R. Canova and Y. Bréchet	
<b>The Brittle-to-Ductile Transition: A Cooperative Dislocation Generation Instability</b>	227
M. Khanta, V. Vitek and D.P. Pope	
<b>Crack Patterning Simulation</b>	237
J. Lépinoux	

<b>Patterns in Fracture: Drying Experiments and Thermal Shock</b> Y. Bréchet, D. Bellet and Ž. Neda	247
<b>Serrated Plastic Flow Revisited</b> P. Rodriguez and S. Venkadesan	257
<b>Microscopic and Macroscopic Instabilities in Omega Forming Systems</b> S. Banerjee, U. Naik and J.K. Chakravartty	267
<b>Chaos in Jerky Flow: Theory and Experiment</b> G. Ananthakrishna and S.J. Noronha	277
<b>Chaotic Flow in Al-Mg Alloy</b> S. Venkadesan, K.P.N. Murthy and M.C. Valsakumar	287
<b>Dynamical Analysis of the Portevin - Le Châtelier Effect</b> L. Quaouire and C. Fressengeas	293
<b>Adiabatic Elimination and Ginzburg-Landau Form Description for Steps on Creep Curve</b> M. Bekele and G. Ananthakrishna	303
<b>Dynamic Strain Ageing and Stick-Slip Instabilities: A Parallel Approach and Statistical Study</b> M.A. Lebyodkin, Y. Bréchet, Y. Estrin and L.P. Kubin	313
<b>Dynamics of the Burridge-Knopoff Model of Earthquakes</b> H. Ramachandran and G. Ananthakrishna	325