## **Table of Contents**

Preface

Computational Modeling of Ceramic Microstructure by MC and MD Aspect in Dynamics H. Matsubara	1
Fast Fracture in Tempered Glass K. Takahashi	9
High Temperature Impact Response of Silicon Nitride Ceramics J. Yuan, T. Shioya and N. Takeda	19
New Computer Simulation Method for Evaluation of Crack Growth Using Lennard-Jones Type Potential Function  ZO Wy, H. Sarirawa and H. Myralawa	25
Z.Q. Wu, H. Serizawa and H. Murakawa  Elasticity and Plasticity in Indentation Problems  M. Sakai, S. Shimizu and T. Ishikawa	33
Pastic Deformation of Brittle Materials M.V. Swain	41
Fatigue and Lifetime of Biomechanical Ceramics B.R. Lawn, I.M. Peterson and Y. Jung	47
Fracture of SIC Fiber-Reinforced Glass Composites D.W. Shin and K.J. Kim	49
Creep Behaviour at High Temperatures of Fine SiC and Alumina Based Fibres M.H. Berger and A.R. Bunsell	57
Physics of the Brittle-Ductile Transition in Glasses and Glass-Containing Ceramics: Time and Temperature Incidences T. Rouxel and M. Buisson	65
Subcritical Crack Growth and Creep Behaviour of Silicon Carbide for Heat Exchanger Applications M. Steen	73
Creep Behavior of Ceramics and Geological Materials at Low Stress Levels T.G. Langdon	81
Creep Behavior of Fiber Reinforced Ceramic Composites U. Anandakumar and R.N. Singh	87
Tensile Creep Degradation in Quasi-Ductile Silicon Nitride F. Lofaj, A. Okada and H. Kawamoto	95
A Novel Deformation Mechanism for Superplastic Deformation H. Muto and M. Sakai	103
Superplastic Deformation of Silicon Nitride Ceramics N. Kondo	109
Spallations of Silicon and Aluminum Induced by Short-Pulsed Laser T. Kohama, H. Tamura and K. Kondo	117
High Speed Observation of Impact Fracture of Carbon Materials H. Shinkawa, T. Akatsu, E. Yasuda and Y. Tanabe	121
Crack Healing Behavior of Monolithic Al <sub>2</sub> O <sub>3</sub> and Al <sub>2</sub> O <sub>3</sub> -SiC <sub>w</sub> Composite at High Temperature Subiantoro, T. Akatsu, Y. Tanabe and E. Yasuda	125
The Influence of Nitrate Salt as Sintering Additives on Mechanical Strength in Silicon Nitride D.C. Park, J.Y. Kim, T. Iseki and T. Yano	131
TEM Investigation and Fracture Behavior of SiC/SiC Composites Fabricated by Hot- Pressing	131
T. Yano, Y. Yamamoto and K. Yoshida  Strain Rate Dependence on the Shear Strength of Unidirectional Carbon/Carbon	135
Composites Y. Ishiguro, T. Akatsu, Y. Tanabe and E. Yasuda	139
Comparative Study of Internal Friction in $Y_2O_3$ -Zr $O_2$ Ceramics at 100 kHz M. Ozawa and S. Suzuki	143

Cyclic Fatigue Crack Growth Behavior of Small Cracks in α-β-Si-Al-O-N Ceramic Material	
G.D. Zhan, M. Mitomo and J.L. Shi	147
Movement of Nanocrystalline Grains in Superplasticity F. Wakai and H. Ogawa	153
Creep Deformation Mechanism of Ceramics Based on Microstructural Observation A.T. Yokobori Jr., T. Yano and Y. Okamoto	157