

Contents of Volume 10

Number 1

Fibre-reinforced SiC-Matrix Composites: Microstructure, Interfaces and Mechanical Properties	1
G. GRATHWOHL, A. HÄHNEL, B. MEIER, E. PIPPEL, G. RICHTER & J. WOLTERS DORF (FRG)	
Superplastic Deformation of an Aluminium–Zirconia Matrix Reinforced with SiC Whiskers	13
G. BERNARD-GRANGER, R. BADDI, R. DUCLOS & J. CRAMPON (France)	
The Effects of Notch Width on the SENB Toughness for Oxide Ceramics	21
J. WANG, W. M. RAINFORTH, I. WADSWORTH & R. STEVENS (UK)	
Weakest-link Failure Prediction for Ceramics II: Design and Analysis of Uniaxial and Biaxial Bend Tests	33
H. SCHOLTEN, L. DORTMANS, G. DE WITH, B. DE SMET & P. BACH (The Netherlands)	
The Effect of Yttria Additions on the Composition of O'-Sialons Prepared by Pressureless Sintering	41
J. SJÖBERG, C. O'MEARA & R. POMPE (Sweden)	
Development of Microstructure during Pressureless Sintering of Alumina	51
P. QUIRMBACH, M. WOLF, R. J. BROOK & H.-W. HENNICKE (FRG)	
Effect of Slurry Structure on the Slip Casting of Silicon Carbide Powders	59
J. M. F. FERREIRA & H. M. M. DIZ (Portugal)	

Number 2

Stoichiometry and Crystal Structure of X-phase Sialon	65
C. C. ANYA & A. HENDRY (UK)	
The Influence of Substrate Material on the Formation of Silicon Nitride	75
D. GRAY & A. HENDRY (UK)	
Alumina-Coating of Silicon Nitride Powder	83
CHONG-MIN WANG & F. L. RILEY (UK)	
Processing of Alumina/Nickel Composites	95
W. H. TUAN (Taiwan) & R. J. BROOK (FRG)	
Weakest-link Failure Predictions for Ceramics III: Uniaxial and Biaxial Bend Tests on Alumina	101
B. J. DE SMET, P. W. BACH, H. F. SCHOLTEN, L. J. M. G. DORTMANS & G. DE WITH (The Netherlands)	
Weakest-link Failure Predictions for Ceramics IV: Application of Mixed-mode Fracture Criteria for Multiaxial Loading.	109
L. DORTMANS & G. DE WITH (The Netherlands)	
The Effects of Sintering Atmosphere on Impurity Phase Formation and Grain Boundary Resistivity in Y ₂ O ₃ -Fully Stabilized ZrO ₂	115
S. P. S. BADWAL & A. E. HUGHES (Australia)	

Room-temperature Preparation of Li_2MoO_4 and its Sintering MICHIO INAGAKI, YASUO NISHIKAWA & MOTOTSUGU SAKAI (Japan)	123
<i>Number 3</i>	
Symposium on the Strengthening of Ceramic Materials, University of Hamburg-Harburg, Hamburg, Germany, 8–9 October, 1991	
Editorial	129
Review	
Toughening Mechanisms for Ceramic Materials R. W. STEINBRECH (Germany)	131
Interaction Between Crack Deflection and Crack Bridging JÜRGEN RÖDEL (Germany)	143
SiC and Si_3N_4 Materials with Improved Fracture Resistance. H.-J. KLEEBE (Germany)	151
Non-Frictional Jamming of Inclusions—an Ignored Toughening Effect. H.-J. WEISS (Germany)	161
On Microstructural Residual Stresses in Particle Reinforced Ceramics WOLFGANG KREHER & ROLF JANSSEN (Germany)	167
Interfacial Boundaries in Si_3N_4 -Based Ceramic Composites: Constraints from Matrix Effects and Stability of Microstructure W. BRAUE (Germany)	175
Stress Concentration Analysis in Fibre-reinforced Ceramic Components W. HUFENBACH (Germany)	195
Effect of Siloxane Infiltration of Green Samples on Properties of RBSN S. KLEBER & H.-J. WEISS (Germany)	205
The Promise of EXAFS EXELFS Spectroscopy for Structure Analysis in Ceramic Composites E. ZSCHECH, G. BINDE & V. KLEMM (Germany)	213
Chemical Strengthening of Leucite-containing Dental Ceramics J. FISCHER (Switzerland), P. POSPIECH & W. GERNET (Germany)	221
A Push-out Technique for the Evaluation of Interfacial Properties of Fiber-reinforced Materials G. RAUSCH, B. MEIER & G. GRATHWOHL (Germany)	229
Sol–Gel Coatings on Ceramic Fibers for Ceramic Matrix Composites B. MEIER, G. GRATHWOHL, M. SPALLEK & W. PANNHORST (Germany)	237
Sintering of Nanocrystalline ZrO_2 and Zirconia Toughened Alumina (ZTA). HA-YOUNG LEE, WERNER RIEHMANN & BARRY LESLIE MORDIKE (Germany)	245
Consolidation of Y-TZP/SiC Particulate Composites by Sintering and Containerless Post-HIPing ZH. DING, R. OBERACKER, H. FREI & F. THÜMLER (Germany)	255
Processing of Ceramic-Matrix/Platelet Composites by Tape Casting and Lamination THOMAS CLAABEN & NILS CLAUSSEN (Germany)	263

Number 4

- The Chemistry of the Carbothermal Synthesis of α - Si_3N_4 : Reaction Mechanism, Reaction Rate and Properties of the Product 273
F. K. VAN DIJEN (Germany) & U. VOGT (Switzerland)
- Densification and Microstructural Development of Two Si_3N_4 Alloys during Hot Isostatic Pressing 283
DANIEL SORDELET (USA)
- Phase Transformation and Microstructure of a Dense Zircon–Zirconia Composite 291
WEN-CHENG J. WEI (China) & RICHARD ADAMS (USA)
- Effect of Powder Processing on Microstructure of Zirconia during Sintering 299
T. CHARTIER, T. GERVAIS, L. CHERMANT, J. L. CHERMANT & M. COSTER (France)
- Preparation and Properties of Electroconductive Al_2O_3 -based Composites 307
ALIDA BELLOSI, GOFFREDO DE PORTU & STEFANO GUICCIARDI (Italy)
- Compressive Creep of SiC Whisker-reinforced Alumina 317
A. H. SWAN (Sweden), M. V. SWAIN & G. L. DUNLOP (Australia)
- Thermodynamics of Alon I: Stability at Lower Temperatures 327
H. X. WILLEMS, M. M. R. M. HENDRIX, R. METSELAAR & G. DE WITH (The Netherlands)
- Thermodynamics of Alon II: Phase Relations 339
H. X. WILLEMS, M. M. R. M. HENDRIX, G. DE WITH &
R. METSELAAR (The Netherlands)

Number 5

State of the Art

- Oxygen Mobility in Silicon Dioxide and Silicate Glasses: A Review 347
M. A. LAMKIN, F. L. RILEY (UK) & R. J. FORDHAM (The Netherlands)
- Si_3N_4 - SiC Particulate Composites: Devitrification of the Intergranular Phase and its Effect on Creep 369
K. RAMOUL-BADACHE & M. LANCIN (France)
- Redistribution of Ce and La during Processing of Ce(La)-TZP/ Al_2O_3 Composites. 381
HERBERT K. SCHMID, R. PENNEFATHER (South Africa), S. MERIANI & C. SCHMID (Italy)
- Mullite Materials from a 3:2 Alumina–Silica Gel Part I: Green Processing and Porosity 393
C. BAUDÍN, M. I. OSENDI & S. DE AZA (Spain)
- Mullite Materials from a 3:2 Alumina–Silica Gel Part II: Microstructural Evolution 399
M. I. OSENDI, C. BAUDÍN & S. DE AZA (Spain)
- Alumina- γ -AlON Composites: Chemical and Microstructural Effects of Sintering Y_2O_3 Addition. 405
P. GOEURIOT, F. LAURENT-FIEVEZ, D. GOEURIOT-LAUNAY & F. THEVENOT (France)

Number 6

- Interfacial Phenomena in Al_2O_3 -Liquid Metal and Al_2O_3 -Liquid Alloy Systems 415
P. NIKOLOPOULOS & S. AGATHOPOULOS (Greece)
- Synthesis of Binary Complex Perovskite Solid Solution by Application of both Precursor Method and Wet-Dry Combination Method 425
YOSHIYUKI ABE, KAZUYUKI KAKEGAWA & YOSHINORI SASAKI (Japan)

Coating of Metals by the Sol–Gel Dip-coating Method	431
P. C. INNOCENZI, M. GUGLIELMI, M. GOBBIN & P. COLOMBO (Italy)	
Dielectric Ceramics with Relaxors and a Tetragonal Tungsten Bronze	437
J. M. HAUSSONNE, G. DESGARDIN, A. HERVE & B. BOUFROU (France)	
Zirconia Stabilized with a Mixture of the Rare Earth Oxides	453
W. PYDA, K. HABERKO & Z. ZUREK (Poland)	
A General Strength Distribution Function for Brittle Materials	461
ROBERT DANZER (Austria)	
Processing and Microstructure Development in Al ₂ O ₃ –SiC ‘Nanocomposites’	473
L. C. STEARNS, J. ZHAO & M. P. HARMER (USA)	
Contributor Index	479