

Contents of Volume 22

Number 1

- 1 Characterisation of a Saddle Field Source for Deposition of Diamond-like Carbon Films
A. A. VOEVODIN (Russia), J. M. SCHNEIDER, C. CAPERAA (France), P. STEVENSON & A. MATTHEWS (UK)
- 7 Pore Structure Evolution During Solvent Extraction and Wicking
S. W. KIM, H.-W. LEE, H. SONG & B. H. KIM (South Korea)
- 15 Low-Temperature Sintering of Submicronic Randomly Oriented $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ Materials
M. VILLEGAS, C. MOURE, J. F. FERNANDEZ & P. DURAN (Spain)
- 23 Processing and Characterization of Microfiltration Supports Prepared from Alumina Powders
G. G. AVCI, Z. MISIRLI & V. GÜNAY (Turkey)
- 27 Role of Pore Structure in the Nitridation of Silicon/Silicon Nitride Compacts
J.-L. HUANG, S.-W. CHEN, H.-H. LU & W.-H. CHAN (Taiwan)
- 33 Effect of B_2O_3 Addition on the Sintering of $\alpha\text{-Al}_2\text{O}_3$
Z. MISIRLI, H. ERKALFA & O. T. ÖZKAN (Turkey)
- 39 Different Degradation Processes in ZnO Varistors
M. S. CASTRO & C. M. ALDAO (Argentina)
- 45 Dielectric and Optical Properties of $\text{Bi}_{12}\text{SiO}_{20}$ Crystals Doped with Zn and Cd and Co-Doped with P
D. PETROVA & M. GOSPODINOV (Bulgaria)
- 49 Cross-Sectional Scanning Force Microscopy Analysis of Arc-Discharge-Deposited Diamond-Like Carbon Films
K. A. PISCHOW, J. KOSKINEN, M. ADAMIK (Finland) & P. B. BARNA (Hungary)
- 53 Synthesis of Zinc Oxide Varistors Through Microwave-Derived Precursor
H. K. VARMA, S. ANANTHAKUMAR, K. G. K. WARRIER & A. D. DAMODARAN (India)
- 57 Preparation and Electrical Characterisation of Strontium Titanate Ceramic from Titanyl Acylate Precursor in Strong Alkaline Solution
C.-F. KAO & W.-D. YANG (Taiwan)
- 67 Compaction Behaviour of Spray-Dried Silicon Carbide Powders
D.-M. LIU & C.-T. FU (Taiwan)
- 73 New Hypotheses on the Mechanism of the Deterioration of Cordierite Diesel Filters in the Presence of Metal Oxides
A. BACHIORRINI (Italy)
- 79 The Influence of the Cluster Models on the Study of Electronic Structure of MgO/Ag Interface
H. X. LIU, H. L. ZHANG, H. L. REN, S. X. OUYANG & R. Z. YUAN (China)
- 83 Phase Equilibria in the Ca–Cu–O System Under Variable Temperatures and Oxygen Pressures
A. M. YANKIN, YU. V. GOLIKOV, R. G. ZAKHAROV, O. A. VIKHREVA, I. N. DUBROVINA & V. F. BALAKIREV (Russia)
- 87 Deposition and Characterization of CVD–Tungsten and Tungsten Carbonitrides on (100) Si
K. A. GESHEVA, E. S. VLAHOV, G. I. STOYANOV, G. D. BESHKOV & M. MARINOV (Bulgaria)

Number 2

- 91 Sol–Gel and CVD-Metal Oxide Coatings for Solar Energy Utilization
O. A. HARIZANOV, K. A. GESHEVA & P. L. STEFCHEV (Bulgaria)
- 95 Optical and Microstructural Properties of $\text{TiO}_2(\text{Ni}^{2+})$ Thin Films
C. PARLOG, M. GARTNER, P. OSICEANU, V. TEODORESCU, F. MOISE & A. IANCULESCU (Romania)
- 101 Effect of Rheological Behavior on Properties of Cast and Sintered Silicon Carbide
D.-M. LIU & C.-T. FU (Taiwan)
- 107 Thermal Shock Resistance of SiC Whisker Reinforced Si_3N_4 Ceramic Composites
D. C. JIA, Y. ZHOU & T. C. LEI (China)
- 113 Mechanical Properties of Green Compacts with Coated Powders
C.-M. WANG (China)
- 119 Tunnelling Studies in BiSrCaCuO:Pb Break Junctions
K. SETHUPATHI, N. SENTHILKUMARAN, S. KASIVISWANATHAN & G. RANGARAJAN (India)
- 123 Wet-Milling Effect on the Properties of Ultrafine Yttria-Stabilized Zirconia Powders
R. GE, Z. LIU, H. CHEN, D. ZHANG & T. ZHAO (China)
- 131 Effects of Two-Step Sintering on the Microstructure of Si_3N_4
J.-L. HUANG, L.-M. DIN, H.-H. LU & W.-H. CHAN (Taiwan)
- 137 Crystallite Growth in Yttria-Doped Superfine Zirconia Powders and Their Compacts: A Comparison between Y-TZP and YSZ
J. L. SHI, M. L. RUAN & T. S. YEN (China)
- 143 Reactive Synthesis of AlN/TiB_2 Composite
G. J. ZHANG & Z. Z. JIN (China)
- 149 Electrochemical Properties of $\text{ZrO}_2\text{--Y}_2\text{O}_3\text{--TiO}_2$ Ceramics
G. RÓG (Poland) & G. Borchardt (Germany)
- 155 Cryogenic-Scanning Electron Microscopy as a Technique to Image Sol-to-Gel Transformation in Chelated Alkoxide Systems
M. M. HARIDAS, A. MENON, N. GOYAL, S. CHANDRAN & J. R. BELLARE (India)
- 161 Preparation of Laminated Composites Using Mullite Refractories and Aluminum
W.-P. TAI, H. KOBAYASHI, T. TORIKAI & T. WATARI (Japan)
- 167 The Flexural Strength at High Temperature and Oxidation Behaviour of (Nb, Ti) C–Ni Composite
K.-F. CAI, C.-W. Nan, R.-Z. YUAN & X.-M. MIN (China)
- 171 Double-Torsion Testing a 3Y–TZP Ceramic
J. CHEVALIER, M. SAADAoui, C. OLAGNON & G. FANTOZZI (France)

Number 3

- 179 Thermodynamic Consideration of Si–N and Si–H–N Systems for Silicon Nitride Powder Production in Thermal Plasma
Z. G. KOSTIĆ, P. L. STEFANOVIĆ & P. B. PAVLOVIĆ (Serbia Montenegro)
- 187 Studies into the Physical Properties of a Ceramic Material with Deposited Film of Lubricant
D. SAMATOWICZ, O. OLSZEWSKI (Poland) & T. A. STOLARSKI (UK)
- 193 Structure, Properties and Quantum Chemistry Studies on Non-Stoichiometric Compounds of $(\text{Nb}_y\text{Ti}_{1-y})\text{C}_x$
X. M. MIN, K. F. CAI, C. W. NAN & R. Z. YUAN (China)

- 197 The Study on $\text{Al}_2\text{O}_3/\text{Nb}$ Interface by SAX Method
H. X. LIU, H. L. ZHANG, H. L. REN, S. X. OUYANG & R. Z. YUAN (China)
- 199 Microstructure and Mechanical Properties of SiC Whisker Reinforced ZrO_2 (2mol% Y_2O_3) Based Composites
G. Y. LIN, T. C. LEI, S. X. WANG & Y. ZHOU (China)
- 207 Influence of TiO_2 Additives on the Microstructure of In_2O_3 Ceramics
N. NADAUD & P. BOCH (France)
- 211 Superplastic Behaviour of a Zirconia Powder–Binder Blend
Y. H. CHIOU, S. J. LIU & S. T. LIN (Taiwan)
- 219 Chemical Reactions Occurring at a BN–AgTi Interface
E. BENKO (Poland)
- 223 Defects in CVD Diamonds
A. BADZIAN & T. BADZIAN (USA)
- 229 Effect of Residual Porosity and Pore Structure on the Mechanical Strength of $\text{SiC–Al}_2\text{O}_3\text{–Y}_2\text{O}_3$
D.-M. LIU & C.-T. FU (Taiwan)
- 233 Chemical Formation of Ceramics
R. RIEDEL & W. DRESSLER (Germany)
- 241 Structural and Electrical Properties of Ferroelectric Bismuth Titanate Thin Films Prepared by the Sol Gel Method
M. SEDLAR & M. SAYER (Canada)
- 249 Influence of CoO and Al_2O_3 on the Phase Partitioning of $\text{ZrO}_2\text{–3mol\% Y}_2\text{O}_3$
Y. H. CHIOU & S. T. LIN (Taiwan)
- 257 Solid Oxide Electrolyte Fuel Cell Review
S. P. S. BADWAL & K. FOGER (Australia)
- 267 Influence of Machining on the Strength of $\text{SiC–Al}_2\text{O}_3\text{–Y}_2\text{O}_3$ Ceramic
D.-M. LIU, C.-T. FU & L.-J. LIN (Taiwan)

Number 4

- 271 Redistribution Coefficients of Metal Impurities in Indium Phosphide Grown by Synthesis–Solute Diffusion Technique
N. V. LAPIN & V. V. GRINKO (Russia)
- 275 Sintering Studies of Nanophase Ceramic Oxides Using Small Angle Scattering
A. J. ALLEN, G. G. LONG, H. M. KERCH, S. KRUEGER, G. SKANDAN (USA), H. HAHN (Germany) & J. C. PARKER (USA)
- 281 Tetragonal and Rhombohedral Phase Co-existence in the System:
 $\text{PbZrO}_3\text{–PbTiO}_3\text{–Pb(Fe}_{1/5}, \text{Ni}_{1/5}, \text{Sb}_{3/5})\text{O}_3$
A. BOUTARFAIA & S. E. BOUAUD (Algeria)
- 287 Thermomechanical and Microstructural Evaluation of High Temperature Sintered (Mg, Mg–Ti)–PSZ
P. RAMASWAMY, B. H. NARAYANA & S. VYNATHEYA (India)
- 295 Plasma Spray: Study of the Coating Generation
P. FAUCHAIS, M. VARDELLE, A. VARDELLE & L. BIANCHI (France)
- 305 Microwave Processing of $\text{Ba}_2\text{Ti}_9\text{O}_{20}$ Ceramic
I. TEOREANU, E. ANDRONESCU & A. FOLEA (Romania)
- 309 The Diffusionless Cubic-to-Tetragonal Phase Transition in Near-Stoichiometric $\text{ZrO}_2\text{–CeO}_2$
S. TORNG (Taiwan), K. MIYAZAWA & T. SAKUMA (Japan)

- 317 Metal Phases in Zeolite Matrix: Electric and Electrochemical Properties
N. PETRANOVIĆ & D. MINIĆ (Serbia Montenegro)
- 321 The Electrical and Optical Properties of Thin Film Diamond
A. T. COLLINS (UK)
- 329 Preparation of Alexandrite by the Sol–Gel Process and Its Characterisation
S. SAHA & B. P. MISTRY (India)
- 335 Titanium Implantation into Boron Nitride Films and Ion-Beam Mixing of Titanium–Boron Nitride Multilayers
W. GISSLER & P. N. GIBSON (Italy)

Review Papers

- 341 Melt-Texturing Processes of HTS
K. SALAMA & D. F. LEE (USA)
- 347 Diamond Deposition on Cutting Tools
B. LUX & R. HAUBNER (Austria)

Number 5

- 353 Formation of SiC Whiskers from Raw Rice Husks in Argon Atmosphere
R. V. KRISHNARAO & Y. R. MAHAJAN (India)
- 359 Superconducting High- T_c Electronic Devices
A. BARONE, S. BARBANERA, V. BOFFA, G. FILATRELLA, U. GAMBARDELLA,
S. MATARAZZO & S. PAGANO (Italy)
- 365 The Sliding Wear of Ceramics
W. M. RAINFORTH (UK)
- 373 Phasic and Microstructural Developments of $\text{Pb}(\text{Ni}_{1/3}\text{Nb}_{2/3})\text{O}_3$ Prepared by the Columbite Precursor Process
C.-H. LU & W.-J. HWANG (Taiwan)
- 381 Forming of Superplastic Ceramics
D. R. LESUER, J. WADSWORTH & T. G. NIEH (USA)
- 389 Grain Size Dependence of the Transformation Temperature of Tetragonal to Monoclinic Phase in $\text{ZrO}_2(\text{Y}_2\text{O}_3)$ Ceramics
W. Z. ZHU (China)
- 397 Thermal Crack Initiation Mechanisms on the Surface of Functionally Graded Ceramic Thermal Barrier Coatings
K. KOKINI, Y. R. TAKEUCHI & B. D. CHOULES (USA)
- 403 Influence of Pore Structure in Green Compacts on the Densification of $\text{SiC}-\text{Al}_2\text{O}_3-\text{Y}_2\text{O}_3$
D.-M. LIU (Taiwan)
- 407 Thermal Conductivity in Hot-Pressed Silicon Carbide
D.-M. LIU & B.-W. LIN (Taiwan)
- 415 Erosion Wear in $\text{Al}_2\text{O}_3-\text{Cr}_3\text{C}_2$ Composites
D.-M. LIU, C.-T. FU & J.-T. LIN (Taiwan)
- 421 Interfaces in Continuous Filament Composites
R. J. ARSENAULT (USA)

Review Papers

- 429 Thin Film Growth by Pulsed Laser Deposition
I. W. BOYD (UK)
- 435 New Dielectric Materials and Insulators for Microelectronic Applications
H. TREICHEL (Germany), E. ECKSTEIN (France) & W. KERN (USA)

- 443 Heteroepitaxy of Diamond on Silicon
X. JIANG & C.-P. KLAGES (Germany)
- 449 Erratum to Metal Phases in Zeolite Matrix: Electric and Electrochemical Properties
N. PETRANOVIĆ & D. MINIC (Serbia Montenegro)

Number 6

- 451 Mechanical Properties of $\text{Al}_2\text{O}_3 + \text{ZrO}_2 + \text{Nano-SiCp}$ Ceramic Composites
L. TIAN, Y. ZHOU & T. C. LEI (China)
- 457 A Relation Between Multiple-Scattering Theory and Micromechanical Models of Effective Thermoelastic Properties
C.-W. NAN, K.-F. CAI & R.-Z. YUAN (China)
- 463 DTA Characterisation of Three Types of $\text{Al}_2\text{O}_3\text{--SiO}_2$ Gels made from TEOS-Al (OBu)₃ Mixture with Variation of Water
A. K. CHAKRAVORTTY (India)
- 471 Phase Diagram of Oxygen Ordering in High Temperature Superconductor $\text{YBa}_2\text{Cu}_3\text{O}_x$
S. G. TITOVA, S. G. SLUDNOV, V. F. BALAKIREV, O. M. FYODOROVA,
T. I. ARBUZOVA & O. V. MOROZOVA (Russia)
- 477 Crystallization Kinetics of Basalt Glass
Ş. YILMAZ, O. T. ÖZKAN & V. GÜNAY (Turkey)
- 483 Chemical Vapour Deposition of Pyrolytic Carbon from Impinging Jets
S. EROGLU (Turkey) & B. M. GALLOIS (USA)
- 489 Formation of SiC from Rice Husk Silica–Carbon Black Mixture: Effect of Rapid Heating
R. V. KRISHNARAO & J. SUBRAHMANYAM (India)
- 493 Bioactive Materials
W. CAO & L. L. HENCH (USA)
- 509 Characterization of Aluminium Nitride Thin Films
Y. WATANABE, Y. NAKAMURA, S. HIRAYAMA & Y. NAOTA (Japan)
- 515 Studies of MOCVD for High T_c Thin Films
M. L. HITCHMAN & D. D. GILLILAND (UK)
- 521 Crack-wake Shielding and Small-scale Crack-tip Yielding as Potential Mechanisms for Improving the Delayed-failure Resistance of Silicon Nitride at Elevated Temperatures
G. PEZZOTTI, T. NISHIDA & M. SAKAI (Japan)
- 527 Joining Nitride Ceramics
S. D. PETEVES (The Netherlands)

Review Paper

- 535 New Inorganic Glasses for Optical Waveguides
D. R. MacFARLANE (Australia)