

Table of Contents

Foreword

Particle Size Distribution of Alumina Powders Derived from Ammonium Aluminum Carbonate Hydroxide (Ammonium Dawsonite) G.I. Horita, E.P. Goulart, O. Thomaz, A.C. Monteiro and D.G.d. Souza	3
Composition Effects on the Microstructure and Mechanical Properties of Sintered Boron Carbide F.C.L. de Melo, C.R.M. Silva, A.H.A. Bressiani and J.C. Bressiani	13
Permeability of Ceramic Membranes to Gas Flow M.D.M. Innocentini, W.L. Antunes, J.B. Baumgartner, J.P.K. Seville and J.R. Coury	19
Mapping of Metallic Inclusions Distribution in Ceramic Matrix N.A. Mariano, S.E. Kuri and P.S. Laureano	29
Translucent Polycrystalline Alumina: Influence of Roughness and Thickness on In-Line Transmittance H.N. Yoshimura, A.C. de Camargo, E.P. Goulart and K. Maekawa	35
Cytotoxicity Test for Bioceramics of Calcium Phosphate S.O. Rogero, F.J.C. Braga and O.Z. Higa	44
Compressive Creep of a Silicon Nitride Alloy N.H. Shibuya, C.R.M. Silva and F.P. Neto	48
Synthesis and Characterization of Al₂O₃/SiC Powders from Natural Aluminosilicates C.E. Borsas, F.M. Spiandorello and R.H.G.A. Kiminami	57
Synthesis of SiC and Cristobalite from Rice Husk by Microwave Heating C.R. Rambo, J.R. Martinelli and A.H.A. Bressiani	63
Synthesis of Zirconia-Based Solid Electrolyte Powders by the Coprecipitation Technique E.N.S. Muccillo, R. Muccillo and D.M. Ávila	70
Synthesis of Reactive Ceramic Powders by the Citrate Technique R. Muccillo, E.N.S. Muccillo, I.C. Cosentino, Y.V. França, F.C. Fonseca and N.H. Saito	80
Polymeric Precursor Synthesis of Alumina Containing Manganese Oxide D. Gouvêa, R.L. Villalobos and J.D.T. Capochi	91
Biomimetic Method for Obtaining Hydroxyapatite E.C.S. Rigo, L.A. dos Santos, L.C.d. Oliveira, R.G. Carrodéguas and A.O. Boschi	99
Colloidal Stabilisation of α-Alumina in Aqueous Media Using Polyelectrolytes F. dos Santos Ortega, P. Sepulveda, V.C. Pandolfelli, M.M. Yokosawa and E. Frollini	104
Development of Dielectric Ceramics Based on Diatomite-Titania and Diatomite-Niobia U.U. Gomes, W. Acchar, E.C.S. Tavares and N.F. Silva	115
Production of Bimetallic Carbides by Mechanical Alloying for Catalysis A. Machado Alves, R. Rosenthal and V.L.S. Teixeira da Silva	121
Lead Iron Phosphate Powders Produced by Melting and Fast Cooling S.T. Reis and J.R. Martinelli	126
Effect of Atmosphere on the Sintering and Grain Growth of Tin Oxide L. Perazolli, J.A. Varela, E.R. Leite and E. Longo	134
Use of Rare Earth Concentrate as a SiAlON Sintering Additive I.R. Ruiz, A.H.A. Bressiani and J.C. Bressiani	141
Densification and Sintering Behavior of Mullite-Zirconia and Mullite-Ceria Composites D.F. Bozano and P.P. Neves	149
Densification of Silicon Nitride Ceramics by Gas Pressure Sintering J. Duailibi Fh., A.J.d. Nascimento Dias and M.C. de S. Nóbrega	157
Properties of Silicides and Silicide Composites Densified by Pressureless Reactive Sintering R. Scholl, P. Tsakirooulos, A. Böhm and B. Kieback	165
Influence of the SiO₂ Additions on the Si₃N₄ Decomposition Reaction during Sintering Cycles without Pressure S. Ordoñez, V. Martínez, I. Iturriza and F. Castro	171
Chemical Grade Silicon Particles Produced by Atomization D. Rodrigues, C.A.F.R. Filho, J.B. Ferreira Neto, J. Kashiwaba, L. Salgado and P. Nogueira	182

Technologies and Principles for Titanium Powder Production by P/M-A Review C.M. Schwanke and L. Schaeffer	190
Production of Intermetallic Powders by the Reduction Diffusion Process P.F. Nogueira and F.B. Neto	200
The Use of Organic Compounds to Prevent Segregation in Sintered Steels M.A.T. de Carvalho, R. Pegorer and D. Rodrigues	208
The Application of Chaotic Theory and Fractal Geometry to Measure the Effects of Lubricants for Uniaxial Die Compaction R.G. Iacocca and D.C. Smith	214
Sintering of Carbon Steels: Controlled Atmospheres, Equipment, Practical Results G.F. Bocchini, R. Cesari, M.R. Pinasco and E. Stagno	224
Plasma Sintering: A Novel Process for Sintering Metallic Components V.J. Batista, M. Mafra, J.L.R. Muzart, A.N. Klein and N. Back	249
Brazing Sintered Materials R.M. Nascimento, A.E. Martinelli, A.J.A. Buschinelli and A.N. Klein	254
Influence of Refractory Particle Size on Sintering of Electrical Contacts with High Volume Fraction of Liquid Phase E. Furukawa, P.A.N. Bernardini, P.V.P. Marcondes and E.M. Azuma	263
Combustion Synthesis Reactions in the Nb-Ni-Al System R.M.L. Neto and P.I. Ferreira	271
Intergranular Corrosion Resistance of 2014 Aluminium Alloys Reinforced with Ni₃Al P.B.d. Silva-Maia, F. Velasco, C.E.d. Costa, W.C. Zapata and J.M. Torralba	279
The Corrosion Behavior of Sintered Steel: Effect of Nitriding Temperature, Time, and Additon of CH₄ in the Atmosphere P.C. Borges, A.E. Martinelli, J.L.R. Muzart, A.N. Klein and C.V. Franco	286
A Study of the Microstructural Characteristics of Dental Amalgams H.A. Acciari, E.N. Codaro and A.C. Guastaldi	298
Quantitative Shape Analysis of Aluminum Powder by Stereology R. Tolosa, M. Ochoa and C. Nuñez	300
Computation Programs to Determine Stereological Parameters R. Tolosa, M. Jáuregui, R. Medina, M. Ochoa and C. Nuñez	308
Plasma Treatments of Sintered Steels to Improve the Wear Resistance M. Rosso and G. Scavino	314
Plasma Nitriding and Nitrocarburising in Sintered Materials E.C. Borba, A.M. Maliska, A.R.d. Souza and A.N. Klein	321
Fatigue Behavior and Fracture of Sintered G.F.C. Sotelo and U. Brand	330
Properties of P/M 316L Stainless Steel Sintered in Dry Hydrogen Atmosphere M. Rosso and O. Morandi	338
Dental Implants of TiTa30 Produced by Powder Technology T. Wack, V. Biehl, J. Breme, C. Schwanke and L. Schaeffer	348
Self-Lubricating Bearings: Microstructural and Dimensional Evolution under Industrial Processing Conditions J.G. Justino and P.A.N. Bernardini	356
Workability of Cold Forged Powder Steel P.R.P. Pedroso, L. Schaeffer and S.C. Alano	364
Powder Metallurgy Processing of Ni-Co Base Electrodes for Application in Water Electrolysis O.B.G. Assis, F.C. Crnkovic, R. Machado, L.A. Avaca, M. Ferrante and S.A.S. Machado	371
Coated Hardmetal Tools B. Lux and R. Haubner	376
Infiltration-Diffusional-Solidification (IDS): A P/M+Liquid Metal Infiltration Route for Processing Metal Matrix Composites M.J. Lopes, F.F. Bianchi, H.N. Yoshimura, F. Ambrozio Filho and H. Goldenstein	380
Microstructure-Property Studies in Spray Formed Al Alloys P. Tsakirooulos	392
The Liquid Dynamic Compaction of a Zn-Al-Cu Alloy R.J. Santos, C.S. Kiminami and C. Bolfarini	398

Spray Forming Commercial Products: Principles and Practice A. Lawley and A.G. Leatham	407
Surface Finishing and Damage in Metal Matrix Composite Machining E.S. Jesus Filho and J.L. Rossi	416
A Critical Overview on Metal Composites Machining E.R.B. Jesus and J.L. Rossi	424
Stainless Steel Matrix Composites Reinforced with AlCr₂ W.M. Lima, F. Velasco and J.M. Torralba	431
Evaluation of Binder Burnout by Thermal Analysis D. Rodrigues and A.P. Tschiptschin	439
Powder Injection Molding: A Comparison of Two Debinding Procedures Based on Solvent Extraction J.G. Justino, L.M. de Resende, M.C. Fredel, P.A.P. Wendhausen, J.A.B.d. Cunha Neto, K.W. Ristow Jr. and A.N. Klein	448
Effect of Wax Addition on Monel Synthesis by High Energy Milling C.J. da Rocha, E.G.d. Araújo, R.A. Nogueira and F. Ambrozio Filho	457
Compaction of AISI M2+10%vol. NbC Processed by High Energy Mill R. Panelli and F. Ambrozio Filho	463
Fabrication and Hot Extrusion of Mechanically Alloying Cu-15wt%Cr Alloy B.R. Juan, G.C. Jorge and M.Z.V. de Paul	470
Mg Based Alloys Obtained by Mechanical Alloying S. Ordoñez, G. García, D. Serafini and A. San Martin	478
Mechanical Alloying of High Performance Aluminum Alloys R.M. Callegaro, J. Lesina César and L. Schaffer	486