

Table of Contents

Development of a Spray Dryer Device to Produce Ammonium Niobium-Oxalate Precursor U.C. Oliveira Filho, A.C. Araújo, E.L. Oliveira and C.P. Souza	3
Centrifugal Atomization of Metals: Thermodynamics of the Process G.S. Bobrovitchii and M. Filgueira	9
On the Compacting of Powders of the Systems Fe-Cu and Fe-Cu-Diamond V.F.d. Silva, M.V.C. Sampaio, E.A. de Carvalho, G.S. Bobrovitchii and M. Filgueira	16
Deposition of Sn-Al Onto Aluminum Powder in Its Self-Convective Motion by DC Sputtering T. Sonoda, A. Watazu, K. Kato and T. Asahina	23
Explosion Study of an Iron Powder Reduction Furnace A.E.P. Brown, P.L. Metropolo and M.A. Carvalho	28
Characterization of Ti-35Nb-7Zr-5Ta Alloy Produced by Powder Metallurgy E.B. Taddei, V.A.R. Henriques, C.R.M. Silva and C.A.A. Cairo	34
Microstructural Evolution of Ti-13Nb-13Zr Alloy during Sintering V.A.R. Henriques, C.A.A. Cairo, C.R.M. Silva and J.C. Bressiani	40
The Use of High Energies Radiations to Characterise Solid-Liquid Systems F.d.O. Arouca and J.J.R. Damasceno	49
Microstructural Evolution during Sintering of the P/M Blended Elemental Ti-5Al-2.5Fe Alloy R.P. Siqueira, H.R.Z. Sandim, V.A.R. Henriques and J.F.C. Lins	55
A Study of Settling Techniques for Measurement of the Size Distribution of Solid Particles F.d.O. Arouca, M.A.S. Barrozo and J.J.R. Damasceno	61
Organophilization of Four Different Bentonitic Clays with a Quaternary Ammonium Salt D.d.L.A.C.S. Andrade, W.A. Freire, S.S. Araújo, L.G.F. Vieira, A.C.F. de Melo Costa, L.H. de Carvalho, A.S. Gomes and S.M.L. Silva	67
Particle Size Distribution Analysis of an Alumina Powder: Influence of Some Dispersants, pH and Supersonic Vibration C.J. Papini, W.K. Yoshito, D. Gouvêa and R.M.L. Neto	73
Machining and Mechanical Characterisation of PM Materials for Valve Seat Inserts E.S. Jesus Filho, L. Salgado, S.L. de Jesus, J.L. Rossi, M.A. Colosio and J.C. Santos	79
Corrosion and Cytotoxicity Evaluation of AISI 316L Stainless Steel Produced by Powder Injection Molding (PIM) Technology I. Costa, S.O. Rogero, O.V. Correa, C.T. Kuniishi and M. Saiki	86
Corrosion Protection of AISI 304 Stainless Steel Filters by a Surface Treatment L. De Micheli and I. Costa	93
An Investigation on the Corrosion Behaviour of Nd-Fe-B Magnets in a Chloride Solution I. Costa, M.C.L. Oliveira, H.G. De Melo and R.N. Faria	98
Compressive Creep of Hot-Pressed Si₃N₄ Ceramics Using CRE₂O₃-Al₂O₃ or CRE₂O₃-AlN Additive Mixtures C. dos Santos, K. Strecker, M.J.R. Barboza, S.A. Baldacim, F.P. Neto, O.M.M. Silva and C.R.M. Silva	104
Microstructure and Magnetic Properties of Fe-6.5wt%Si Alloy Obtained by Spray Forming Process M.C.A. da Silva, C. Bolfarini and C.S. Kiminami	111
Effect of Calcination Conditions on the Magnetic Properties of MnZn Ferrites Powders Produced by Co Precipitation S.R. Janasi, D. Rodrigues and F.J.G. Landgraf	119
The Influence of Pr Concentration on the Magnetic Properties of Pr-Fe-Co-B-Nb HDDR Magnets L.P. Barbosa, N.A. Ferreira, H. Takiishi and R.N. Faria	125
Determination of Intrinsic Magnetic Parameters of SmCo₅ Phase in Sintered Samples M.F. de Campos and F.J.G. Landgraf	129
Determination of the Constants of Magnetocrystalline Anisotropy in Sintered Magnets with Uniaxial Texture M.F. de Campos	134

Effect Ni Addition of the Cu-Al Powder by Mechanical Alloying R.E. Coelho, A.C.R. Veloso, R.M. Gomes, T.A.d.A. Melo and S.J.G. de Lima	141
Preparation of Nb-40Ti Powders by High-Energy Milling Y.A. Giffoni, E.C.T. Ramos, A.S. Ramos, H.R.Z. Sandim and M.T.T. Pacheco	146
Combustion Synthesis of Mechanically-Activated Nb-Al Mixtures F. Buracovas, V.S. Gonçalves, C.J. da Rocha and R.M.L. Neto	152
Production and Characterization of Aluminium NbAl₃ Composite by Mechanical Alloying and In Situ - A Process Comparison S.L. Urtiga Filho, J.C. Earthman, I. Nieves, M.H. Robert and T.P. Waked	158
On the Use of Stainless Steel Water Atomized Powders for Injection Molding Regarding Corrosion Resistance M.M. Bonato, W. da Silveira, W.H. Schreiner, P.A.P. Wendhausen and P.C. Borges	164
Titanium Powder Processing with Binder Addition for Biomedical Applications M.V. de Oliveira, L.C. Pereira and C.A.A. Cairo	173
Computational Fluid Dynamics Techniques for Flows in Lapple Cyclone Separator A.F. Lacerda, L.G.M. Vieira, A.M. Nascimento, S.D. Nascimento, J.J.R. Damasceno and M.A.S. Barrozo	179
Effect of Heat Treatment on Microstructure of Commercial and Vacuum Sintered High Speed Steels AISI M2 and T15 R.A. Nogueira, O.C.S. Ribeiro, M.D.M. das Neves, L. Salgado and F. Ambrozio Filho	186
Sintering Behavior of NbC-Reinforced Steel D.S. Paulo, A.E. Martinelli, C. Alves Jr., J.H. Echude-Silva, M.P. Távora and R.M. Nascimento	192
Cellular Concrete with Addition of Aluminum Recycled Foil Powders E.G.d. Araújo and J.A.S. Tenório	198
The Development of an Innovative P/M Oil Control Ring from Concept to Production Line R. Panelli, A. Ferarrese, R. Soave and R. Pegorer	205
Densification Study of Titanium Powder Compacts M.C.C. Ueta, C.A. Fracote, V.A.R. Henriques, M.L. de Alencastro Graça and C.A.A. Cairo	211
The Role of the Apparent Density on the Permeability of Porous Stainless Steel Parts D. Rodrigues, J.P. Tosetti, F. Beneduce, L. Salgado and F. Ambrozio Filho	217
Study of the Diamond 5%wt- Cobalt Sintering under the HPHT Lowest Limit F.T.C. Lima, G.S. Bobrovitchii and M. Filgueira	225
Pressure Assisted WC-15%wt Co Sintering M.F. Rodrigues, G.S. Bobrovitchii, A.M. Ramalho and M. Filgueira	231
Sinterability of High-Speed Steels M2, M3/2 and T15 R.M.U. Nogueira and C.E.d. Costa	238
High-Speed Steels Produced by Conventional Casting, Spray Forming and Powder Metallurgy R.A. Mesquita and C.A. Barbosa	244
Microstructural Characterisation by Scanning Electron Microscopy of Spray Formed Al/SiC_p Matrix Composite E.G. Gomes and J.L. Rossi	251
Consolidation of Compacted Zircaloy Chips via Vacuum Arc Melting - Analysis of the Electric Arc C.S. Mucsi, R.N. Faria, E. Galego and J.L. Rossi	258
Computational Fluid Dynamics Applied to Bradley Hydrocyclones L.G.M. Vieira, J.J.R. Damasceno and M.A.S. Barrozo	264
Simulation of Spouted Bed Using a Eulerian Multiphase Model C.R. Duarte, V.V. Murata and M.A.S. Barrozo	270
A Study of the Rejects Recovery in a Column Flotation M.S. Oliveira, D.R. Cioqueta, M. Sallum, R. Miro, R.C. Guimarães, C.H. Ataíde and M.A.S. Barrozo	278
The Nitriding of Ferrous Powder Alloys - Mathematical Modelling and Simulation R. Politano and J.L. Rossi	285
Humidity Sensitive Characteristics of ZnO-TiO₂-Ta₂O₅ Ceramic S.L. Mineiro, M.d.C.d.A. Nono, C. Kuranaga and M.D. Silva	293
Chemical Synthesis by Pechini Method for Obtation of ZnO Varistors P.C. Ribeiro, E.G. da Costa, L. Gama, A.C.F. de Melo Costa and R.H.G.A. Kiminami	299

Evaluation of the Effect of Heavy Rare Earth Elements on Electrical Resistivity of Zirconia-Yttria Ceramics	
D.R.R. Lazar, V. Ussui, E.N.S. Muccillo, A.H.A. Bressiani and J.O.A. Pascoal	305
Characterization of Strontium Ferrites Powders Obtained by High Energy Milling	
P.I. Paulin Filho and R.R. Corrêa	311
Monofilamentary Ag/Bi:2212 Tapes – Effects of Silver Powder Addition	
D.I. dos Santos, D. Rodrigues, E.A.A. Rubo and E. Cursino	316
Microstructure and Some Microwave Properties of Ba₂Ti₉O₂₀ Doped with ZrO₂	
Y. Koldayeva, M.d.C.d.A. Nono, P.J. Castro and S.T. Fonseca	319
Microstructure and Microwave Characterization of SrO₂-Ba₂Ti₉O₂₀ Dielectric Resonators for Telecommunications Applications	
M.d.C.d.A. Nono, S.T. Fonseca, P.J. Castro and Y. Koldayeva	324
Phase Amorphization during High-Energy Milling of Mixtures of Zirconia with Yttria or Ceria Powders	
R. Muccillo, L. Franchi, J.T. Santos, I.C. Cosentino and E.N.S. Muccillo	331
Use of Impedance Spectroscopy in the Study of the Effect of Cr Concentration on the Electrical Properties of SnO₂-Based Ceramics	
D.R. Leite, W.C. Las, G. Brankovic, M.A. Zaghete, M. Cilense and J.A. Varela	337
Influence of Mg on the Structural and Optical Properties of LiNbO₃ Thin Films Grown by Polymeric Precursor Method	
A.Z. Simões, V. Bouquet, F. Moura, A. Ries, M.A. Zaghete and J.A. Varela	342
Fracture Toughness of SiC-Cu Based Alloys Cermets	
S. Ordoñez, L. Carvajal, V. Martínez, C. Agurto, J. Marín, L. Olivares and I. Iturriza	350
Sintering Behavior of Si₃N₄-TaC Based Composites	
A.C.S.C. Rumbao, J.C. Bressiani and A.H.A. Bressiani	357
Influence of NbC-Addition on Mechanical Properties of WC-Co	
W. Acchar and H.R.d. Macedo	363
Ceramic Composites Derived from Nb/Al₂O₃-Filled Polysilsesquioxane	
M.A. Schiavon, I.V.P. Yoshida, A.C. Silva and W. Acchar	369
Ceramic Composites Derived from Polysiloxane/Al/Nb by AFCOP Process	
M.A. Schiavon, I.V.P. Yoshida, J.C. Bressiani and W. Acchar	375
Comparison of Physical and Mechanical Properties in Ceramics Composites Si₃N₄-CTR-AlN and Si₃N₄-Y₂O₃-AlN	
S.A. Baldacim, O.M.M. Silva, C. dos Santos and C.R.M. Silva	381
The Changes on Microstructure and Electrical Properties of Bi:2223/Ag Composite as a Function of the Granulation and the Content of the Added Silver Powder	
D.I. dos Santos, L.A.G. Zanata, M.J. Saeki and C.C. Nunes	388
Alkaline Activation of Kaolinitic Soils for the Production of Special Binders	
D.P. Dias, A. Soares, C.E. Viana, J.C. Soares and P.H.B. Azevedo	394
Addition of Polyurethane to Portland Cement	
A.E. Martinelli, D.M.A. Melo, F.M. Lima, U.T. Bezerra, E.P. Marinho and D.M. Henrique	401
Composites of Portland Cement and Natural Polymers	
U.T. Bezerra, A.E. Martinelli, D.M.A. Melo, D.M. Henrique, E.M. Rodrigues and F.M. Lima	407
Chemical Vapor Densification Process of Carbon Fiber Substrates	
T. Kajita, L.C. Pardini and F.C.L. de Melo	413
Study of the Potentiality of Residue from Kaolin Industry as Ceramic Raw Material to Produce Porcelanate Gres	
M.A.F. Ramalho, L.N. de Lima Santana, G.A. Neves and H.L. Lira	420
Recycling of Silicon Carbide and Corn Starch as Binder Originating from Commercial Starch Consolidation	
E.M. Marins, E.F. Lucena, F.P. Santos, É. de Campos, M. Zacharias and J.A.J. Rodrigues	425
Using Experiments Design to Model Linear Firing Shrinkage of Triaxial Ceramic Bodies	
S.L. Correia, K.A.S. Curto, D. Hotza and A.M. Segadães	430
A Method to Optimize Ceramic Masses for Coatings through Delineation of Experiments	
J. Silveira, L.R.d.A.P. Pontes, J.P. Leite and J.H. Echude-Silva	436
Safe Use of Natural Gas in Ceramic Furnace Burners	
P.L. Metropolo and A.E.P. Brown	442

Clays from Southern Brazil: Physical, Chemical and Mineralogical Characterization S.L. Correia, K.A.S. Curto, D. Hotza and A.M. Segadães	447
Electron Beam-Physical Vapour Deposition of Zirconia Co-Doped with Yttria and Niobia D.S. Almeida, C.R.M. Silva, M.d.C.d.A. Nono and C.A.A. Cairo	453
Methodology for Prediction of Desired Mechanical Properties as a Function of Mixture Components J.V. Nardi and D. Hotza	459
The Use of Electrochemical Techniques for Ceramic Filtration Medium Cleaning O.B.G. Assis and E.R. Silva	464
Replacing Coal by Tire Powder in Ceramic Industry C.G. Mothé and H.F. Mothé Filho	470
Wet Processing of Triaxial Ceramics Using a Mixture Design Approach C.M.F. Gomes, A.D. Noni, J.P. Reis, J.A.R. Souza, A.P.N. Oliveira and D. Hotza	476
Dimension Stone Cutting with AWJ Methods G.R.M. Cortés, W.T. Hennies, C.T. Lauand and F.R. Valenzuela-Díaz	482
Synthesis, Rheological Behavior and Mechanical Characterization of Structural Fast-Setting Geopolymers A.E. Martinelli, D.M.A. Melo, E.P. Marinho, T.W.J. Batista, R.G.S. Araújo and M.A.F. Melo	488
Densification Study of SiC:Al₂O₃:Y₂O₃ with Polymer Additions A.L.E. Godoy, J.C. Bressiani and A.H.A. Bressiani	494
Solid Galvanic Wastes Incorporation in Glass Matrices A.A. Marialva-Neto, S.M. Cunha, A.C. da Silva and S.R.H. de Mello-Castanho	500
Tetragonal-to-Monoclinic Transformation Influence on the Mechanical Properties of CeO₂-ZrO₂ Ceramics M.d.C.d.A. Nono	506
Thermal Characterization of Sintered Clay-Petroleum Waste Mix by the Photoacoustic Technique M.F. Rodrigues, M.S. Sthel, H. Vargas and J.N.F. Holanda	512
Utilization of Granite Powder Waste in Ceramic Bodies for Civil Construction J.M.S. Moreira, M.N. Freire and J.N.F. Holanda	517
Production, Sintering and Microstructural Characteristics of Ba₂MgWO₆ Ceramics L.A.R.d. Aguiar, C.M. Lapa, R.A.S. Ferreira, J.A. Aguiar, C.L.d. Silva, D.P.F. Souza and Y.P. Yadava	523
Sintering, Microstructure and Mechanical Properties of Ba₂HoWO_{5.5} Ceramics C.M. Lapa, R.A.S. Ferreira, J.A. Aguiar, C.L.d. Silva, D.P.F. Souza and Y.P. Yadava	529
Synthesis and Thermal Characterization of Luminescent Powers of Terbium (III) with Mixed Ligands C.R. da Silva Morais, W.S. Lopes, A.G.d. Souza and P.D. Santa-Cruz	535
Anelastic Spectroscopy in TiO₂ C.R. Grandini, R.L.N. Oliveira, R.P. Mota, F.P. Santos and É. de Campos	540
Study of PSZ Sintered in Low Oxygen Partial Pressure D.A.P. Reis, D.S. Almeida, M.d.C.d.A. Nono, C.R.M. Silva and F.P. Neto	546
Influence of the Granulometry of Organic Matter Ashes from Municipal Solid Waste on the Properties of Vitrified Ceramics M.C.B. Gadioli, B.C. Santos, R.A. Conte, D.G. Pinatti, C.M.F. Vieira and S.N. Monteiro	552
Sintering of a Clay Material with Granite and Marble Reject J.B. Silva, F.A. Vieira, W. Acchar, D. Hotza and A.M. Segadães	558
Anelastic Spectroscopy in Al₂O₃ C.R. Grandini, R.L.N. Oliveira, R.P. Mota, F.P. Santos and É. de Campos	564
Oxidation Behavior of Hot-Pressed Si₃N₄ Ceramics Using CRE₂O₃-AlN and CRE₂O₃-Al₂O₃ as Sintering Additives C. dos Santos, K. Strecker, F.P. Neto, M.A. Lanna, O.M.M. Silva and C.R.M. Silva	569
Creep Behavior of Multi-Cation α-SiAlON Partially Stabilized Produced with an Yttrium-Rare Earth Oxide Mixture(CRE₂O₃) C. dos Santos, K. Strecker, M.J.R. Barboza, S.A. Baldacim, F.P. Neto, O.M.M. Silva and C.R.M. Silva	575
Anelastic Spectroscopy in Superconducting Oxides J.M. de Albuquerque Gimenez, C.R. Grandini, D.I. dos Santos and A.G.d. Cunha	581

Molybdenum Silicides as a Bonding Phase in Diamond Composites L. Jaworska, J. Morgiel, L. Stobierski, J. Lis, B. Krolicka and W. Maziarz	587
Biofunctionalization of Glass Powder by Cold-Plasma Technique O.B.G. Assis and L.G. Paterno	594
Effect of the Calcination Time of Fish Bones in the Synthesis of Hydroxyapatite W.M. Lima, W.R. Weinand, O.A.A. dos Santos, A. Paesano and F.H.M. Ortega	600
Evaluation of Procera/Porcelain Interface in Metal-Free Prosthesis S.H. Yasuda, A.C. Guastaldi and E. Vedovato	606
Synthesis and Characterization of NiO-8YSZ Powders by Coprecipitation Route W.K. Yoshito, V. Ussui, D.R.R. Lazar and J.O.A. Pascoal	612
Nickel Ferrite: Combustion Synthesis, Characterization and Magnetic Properties A.C.F. de Melo Costa, L. Gama, M.R. Morelli and R.H.G.A. Kiminami	618
Ce_{0.8}Gd_{0.2}O_{1.9} Powders Synthesized by Co-Precipitation and Amorphous Citrate Processes M.C. Brant, F.d.S. Possa and F.S. Lameiras	624
Synthesis of La_{0.8}Sr_{0.2}MnO_{3±δ} Powders by Amorphous Citrate and Pechini Techniques M.C. Brant, J.A. Zani and F.S. Lameiras	630
Doped Tin Oxide Nanometric Films for Environment Monitoring P.H. Falla, H.E.M. Peres, D. Gouvêa and F.J. Ramirez-Fernandez	636
Synthesis and Characterization of 0.9PMN-0.1PT Powders by the Use of a Modified Columbite Precursor J.C. Bruno, A.A. Cavalheiro, M.A. Zaghete, M. Cilense and J.A. Varela	642
Synthesis of WC Powders by Reactive Milling F.R. Passador, S.C. Maestrelli, E.M.J.A. Pallone, R.F. Esposto and R. Tomasi	648
Obtaining of the Ceramics Pigments (Fe, Zn)Cr₂O₄ Using Waste of Electroplating as Raw Material K.W. Milanez, N.C. Kuhnen, H.G. Riella and C.T. Kniess	654
Aluminas by Thermal Activation of Fibrillar Pseudoboehmite Powders V.F.J. Kozievitch, G.A. Rocha, W.S. Maia, P.K. Kiyohara, A.C.V. Coelho and P. Souza Santos	658
Combustion Synthesis of Cu_{1-x}Ni_xCr₂O₄ Spinel for Catalytic Applications P.M. Pimentel, M.F. Ginani, A.E. Martinelli, D.M.A. Melo, A.M.G. Pedrosa and M.A.F. Melo	663
Physical Characterization of K-Doped 0.9PMN-0.1PT Synthesized by an Association of the Columbite Route and the Polymeric Precursor Method A.A. Cavalheiro, J.C. Bruno, M.A. Zaghete and J.A. Varela	669
A Low Cost ZSM-5 Zeolite Obtained from Rice Hull Ash A.A. Fernandes, E.U.C. Frajndlich and H.G. Riella	676
Red Ceramic Materials Durability Evaluation P.C. de Almeida Maia, A.D. Pinheiro and J. Alexandre	681
Synthesis and Characterization of Modified Clays as Sorbents of Toluene and Xylene M.M.G.R. Vianna, F.R. Valenzuela-Díaz, V.F.J. Kozievitch, J. Dweck and P.M. Büchler	691
Hazardous Wastes Disposal: Stabilization/Solidification of Tannery Residue in the Presence of Chromium C.A. Pinto, J.J. Sansalone, J. Dweck, F.K. Cartledge, F.R. Valenzuela-Díaz and P.M. Büchler	697
Influence of Tin Oxide Addition in the Morphologic Characteristics of Zinc Oxide Powders Synthesized by Pechini's Method G.J. Pereira, D. Gouvêa and S.M. Hiraoka	704
Toluene, Xylene and Diesel Oil Sorption by Brazilian Organoclays M.M.G.R. Vianna, K.R.O. Pereira, P.M. Büchler and F.R. Valenzuela-Díaz	710
Characterisation of Titanium Nitride Thin Films Deposited by Cathodic Arc Plasma Technique on AISI D6 Tool Steel R.A. Vieira and M.d.C.d.A. Nono	717
Preparation and Characterization of NiAl₂O₄ Powder by the Pechini and Combustion Methods M.A. Ribeiro, A.C.F. de Melo Costa, H.L. Lira, J.B.L. de Oliveira, R.H.G.A. Kiminami and L. Gama	722
Characterization of Granite Waste for Incorporation in Red Ceramic C.M.F. Vieira and S.N. Monteiro	728
Complex Carbon-Mineral Sorbents from Common Clay S. Cosin, C.A. Pinto, P. Souza Santos and F.R. Valenzuela-Díaz	734

A Study of the Influence of Organic Compounds during the Cement Hydration by Using XRD and DTA

R.A. Hanna, P.M. Büchler and C.R. Cheeseman

740

Synthesis of Niobium Carbide from Ammonium Niobium (V) Oxalate Precursor at Low Temperature in Rotating Cylinder Reactor

F.A.O. Fontes, K.K.P. Gomes, F.d.F.P. Medeiros, C.P. Souza, J.F. Sousa and U.U. Gomes

747