

Table of Contents

Committees and Foreword

POWDER METALLURGY Characterization

Interstitial Control in Titanium Alloys Produced by Powder Metallurgy V.A.R. Henriques, S.L.G. Petroni, M.S.M. Paula, C.A.A. Cairo and E.T. Galvani	3
Titanium Nitride Deposition in Titanium Implant Alloys Produced by Powder Metallurgy V.A.R. Henriques, T.G. Lemos, C.A.A. Cairo, J. Faria and E.T. Galvani	11
Processing of AISI M2 HSS with Addition of NbC by Mechanical Alloying Using two Different Types of Attritor Mills O.O. de Araújo Filho, M.D.M. das Neves, C.H. Gonzalez, U.S.L. Filho and F. Ambrozio Filho	17
Effect of Different Concentrations and Sizes of Particles of Rice Husk Ash - RHS in the Mechanical Properties of Polypropylene G.C. Nascimento, D.M. Cechinel, R. Piletti, E. Mendes, M.M.S. Paula, H.G. Riella and M.A. Fiori	23
Microstructure and Microanalysis Studies of Copper-Nickel-Tin Alloys Obtained by Conventional Powder Metallurgy Processing W.A. Monteiro, J.A.G. Carrió, T.J. Masson, C.D. Abreu, I.M. Marques and L.C.E. da Silva	29
Microstructural and Electrical Investigation of Cu-Ni-Cr Alloys Obtained by Powder Metallurgy Method J.A.G. Carrió, M.A. Carvalhal, L.M. Ayabe, L.C.E. da Silva, R.V. Silva Junior and W.A. Monteiro	35
Structural and Electrical Properties of Copper-Nickel-Aluminum Alloys Obtained by Conventional Powder Metallurgy Method W.A. Monteiro, J.A.G. Carrió, C.R. Da Silveira, E. Vitor and S.J. Buso	41
The Influence of the Velocity of Filtration in the Formation and Removal the Dust Cake S.M.S. Rocha, C.B. Vasconcelos, L.G.M. Vieira, M.L. Aguiar and J.J.R. Damasceno	46
Influence of Fuel in the Synthesis of ZnAl_2O_4 Catalytic Supports by Combustion Reaction K.M. de Souto Viana, B.B. Dantas, N.A.S. Nogueira, J.M. Sasaki, N.L. de Freitas, R.H.G.A. Kiminami and A.C.F. de Melo Costa	52
Influence of the External Heating Type in the Morphological and Structural Characteristics of Alumina Powder Prepared by Combustion Reaction V.V. Cordeiro, N.L. de Freitas, K.M. de Souto Viana, G. Dias, A.C.F. de Melo Costa and H.L. Lira	58
Electrical Conductivity and Microstructure by Rietveld Refinement of Doped Cu-Ni Powder Alloys A.S. Fambrini, W.A. Monteiro, R.M.M. Orrego, I.M. Marques and J.A.G. Carrió	63
Thermal Interdiffusion Products of U-10Mo in Al Matrix I.C. Martins, G.Z. Soriano, M. Durazzo, E.F.U. de Carvalho, L.S. Montagna and A.M. Saliba-Silva	69
Fertilizer Drying in a Concurrent Rotary Dryer B.C. Silvério, E.B. Arruda, V.V. Murata, J.M.F. Façanha and M.A.S. Barrozo	76
Efficiency Evaluation of ZrB_2 Incorporation in the MgB_2 Matrix Phase Using High-Energy Milling F.A. Santos, A.S. Ramos, C. dos Santos, P.A. Suzuki and D. Rodrigues Júnior	82
The Role of Particle Shape on the Sintering of Clay Based Ceramics S.N. Monteiro and C.M.F. Vieira	88
Characterization of Proton Exchange Membrane Fuel Cell Cathode Catalysts Prepared by Alcohol-Reduction Process T.A.B. Santoro, A. Oliveira Neto, R. Chiba, E.S.M. Seo and E.G. Franco	94
Comparison of Porosity Measurement Techniques for Porous Titanium Scaffolds Evaluation M. Varella, A.A. Ribeiro, A.C. Moreira, A.M.C. Moraes, C.R. Appoloni and L.C. Pereira	100
Cutting Performance of Diamond Coated Si_3N_4 Tool During Turning J.V.C. Souza, M.d.C.d.A. Nono, J.P.B. Machado, O.M.M. Silva, F.C.L. Melo and M.V. Ribeiro	106

Ti-13Nb-13Zr Production for Implant Applications V.A.R. Henriques, C.R.M. Silva, C.A.A. Cairo and E.T. Galvani	112
Isochronal Sintering of Ti-35Nb-7Zr-5Ta V.A.R. Henriques, E.B. Taddei and C.R.M. Silva	118
Influence of the Particle Size on Phase Transformation Temperatures of Ni-49at.%Ti Shape Memory Alloy Powders G.C.S. Anselmo, W.B. de Castro and C.J. de Araújo	124
Hydrogenation and Discharge Capacity of a $\text{La}_{0.7}\text{Mg}_{0.3}\text{Al}_{0.3}\text{Mn}_{0.4}\text{Co}_{0.5}\text{Ni}_{3.8}$ Alloy for Nickel-Metal Hydride Batteries J.C.S. Casini, L.M.C. Zarpelon, E.A. Ferreira, H. Takiishi and R.N. Faria	128
The Effect of High Charging Rates Activation on the Specific Discharge Capacity and Efficiency of a Negative Electrode Based on a LaMgAlMnCoNi Alloy E.A. Ferreira, L.M.C. Zarpelon, J.C.S. Casini, H. Takiishi and R.N. Faria	133
Determination of the Crystal Alignment of Pr-Fe-B Magnets Using the (105) X-Ray Pole Figure A.R.M. Castro, H. Takiishi, R.N. Faria and N.B. de Lima	139
Microstructural Analysis of Hardmetal Using WC Nanometric Powders H.C.P. Oliveira, L.H.F. Borges, R.C. Tardim, M.S. Freitas, G.S. Bobrovitchii and M. Filgueira	145
Microstructural Evolution of Ti-10Nb and Ti-15Nb Alloys Produced by the Blended Elemental Technique G.V. Martins, C.R.M. Silva, C.A. Nunes, V.A.R. Henriques, L.A. Borges and J.P.B. Machado	152
Comparison of Particle-Wall Interaction Boundary Conditions in the Prediction of Cyclone Collection Efficiency in Computational Fluid Dynamics (CFD) Modeling M.R. Valverde, J.R. Coury and J.A.S. Gonçalves	158
Quantitative Determination of the Crystalline Phases of the Ceramic Materials Utilizing the Rietveld Method C.T. Kniess, P.B. Prates, J.C. de Lima, N.C. Kuhnén, H.G. Riella and A.M. Maliska	164
Sintering of B_4C by Pressureless Liquid Phase Sintering R.M. da Rocha and F.C.L. de Melo	170
Effect of Hydrogenation Pressure on Microstructure and Mechanical Properties of Ti-13Nb-13Zr Alloy Produced by Powder Metallurgy J.H. Duvaizem, G.S. Galdino, A.H.A. Bressiani, R.N. Faria and H. Takiishi	176
Cobalt-Based Binders and the Efficiency of Diamond Saw Blades G.S. Bobrovitchii, M. Filgueira, S.N. Monteiro and R.C. Tardim	182
Characterization of HDH Titanium Powder for Biomaterial Applications L.P. Barbosa, L. Salgado, N.F. Karsokas and M.K. Nagamine	188
Gelcasting of Stainless Steel Powder: An Alternative to Injection Molding F.d.S. Ortega, R.L.S. Oliveira, M.C. Plínio and B.N. Nobrega	194

POWDER METALLURGY – Corrosion & Mechanical Properties

Study through Potentiodynamic Techniques of the Corrosion Resistance of Different Aluminium Base MMC's with Boron Additions J. Abenojar, A. Bautista, S. Guzmán, F. Velasco and M.A. Martinez	203
Investigation on the Corrosion Resistance of PIM 316L Stainless Steel in PEM Fuel Cell Simulated Environment M.C.L. de Oliveira, I. Costa and R.A. Antunes	209
Influence of Silane Films in the Zinc Coating Post-Treatment M.V. da Costa, C.T. Oliveira, J.P. Bonino, T.L. Menezes, C.F. Malfatti and I.L. Müller	215
Creep Behavior of the Titanium Alloy with Zirconia Plasma Sprayed Coating D.A.P. Reis, C. de Moura Neto, M.J.R. Barboza, H.R. Silva, C.R.M. Silva and A.A. Couto	221
Comparison between PIII Superficial and Ceramic Coating in Creep Test of Ti-6Al-4V Alloy D.A.P. Reis, C. de Moura Neto, M.M. Silva, M. Ueda, V.S. Oliveira and A.A. Couto	225
Comparison between Pulsed Nd:YAG Laser Superficial Treatment and Ceramic Coating in Creep Test of Ti-6-4V Alloy A.G. Reis, D.A.P. Reis, C. de Moura Neto, J. Onôro, H.S. Oliveira and A.A. Couto	229

Evaluation of Heat Treatment and Ceramic Coating in Creep of Ti-6Al-4V T. Sugahara, L.A.N.S. Briguente, L.M. Yogi, D.A.P. Reis, C. de Moura Neto, M.J.R. Barboza and A.A. Couto	235
---	-----

POWDER METALLURGY – Heat Treatment

Oxidation Kinetics of the Sintered Iron Parts Steam Treated in an Industrial Continuous Furnace E. Nunes and I.G.S. Falleiros	243
Covering Steel Surface with Carbon Black by CO₂ Laser G. de Vasconcelos, G.N.P. da Costa, D.C. Chagas, C.B. Mello and E.F. Antunes	249
Sulfur Dioxide Production from Phosphogypsum: Thermodynamic Analysis and Experimental Results H.M. Henrique and P.M. Parreira	253
Biomass Pyrolysis: Use of Some Agricultural Wastes for Alternative Fuel Production L.M. Kimura, L.C. Santos, P.F. Vieira, P.M. Parreira and H.M. Henrique	259

POWDER METALLURGY – Magnetic Materials

Curie Temperature, Microstructure and Magnetic Properties Analysis of Fe-6.5_{wt}Si Alloy Spray Formed as Function of Process Parameters J.C.R. Muniz, M.C.A. Silva, C. Bolfarini and M.D.C. Sobral	267
The Effect of Cu, P, Ga and Gd on Microstructure and Magnetic Properties in the PrFeCoBNb HD Sintered Magnets T. Mendes, S.C. Silva, E.A. Périgo, R.N. Faria and H. Takiishi	273
The Critical Volume for Nucleation M.F. de Campos and J.A. de Castro	279
Effect of Grain Size on the Coercivity of Sintered NdFeB Magnets M.F. de Campos	284
Optimizing the Heat Treatment of Rare Earth-Transition Metal Sintered Magnets M.F. de Campos and J.A. de Castro	290
The Influence of Praseodymium Content on the Hydrogen Absorption Capability of PrFeCoBNb Magnetic Alloys E.A. Périgo, G.S. Galdino, J.R. Matos, H. Takiishi and R.N. Faria	296
Effect of Variables the HDDR Processing on Magnetic Properties and Microstructure in Permanent Magnets Based on Pr-Fe-B P.B. Santos, S.C. Silva, R.N. Faria and H. Takiishi	302
Crystallite Size and Magnetic Properties of HDDR Powders Obtained from PrFeCoBNb Alloys S.C. Silva, J.H. Duvaizem, R.N. Faria and H. Takiishi	308

POWDER METALLURGY – Mechanical Alloying

Effect of the Reinforcement Volume Fraction on Mechanical Alloying of AA2124 – SiC Composite G.M. Candido, V. Guido, G. Silva and K.R. Cardoso	317
High-Energy Mechanical Milling of Ultra-High Molecular Weight Polyethylene (UHMWPE) M.C. Gabriel, L.B. Mendes, B. de Melo Carvalho, L.A. Pinheiro, J.D.T. Capochi, E.T. Kubaski and O.M. Cintho	325
An Investigation on the Mechanical Alloying of TiFe Compound by High-Energy Ball Milling R.B. Falcão, E.D.C.C. Dammann, C.J. da Rocha and R.M.L. Neto	329
The Effect of Mechanical Activation of Elemental Powders on Combustion Synthesis of NbAl₃ C.J. da Rocha and R.M.L. Neto	335

Formation of Si_{0.80}Ge_{0.20} Solid Solution by Mechanical Alloying Y.A. Chen, C.R.M. Silva and D.M. Rowe	341
Synthesis of PbTe Intermetallic Compound by Mechanical Alloying Y.A. Chen, C.R.M. Silva and D.M. Rowe	347
The Influence of the Milling Environment on the Structure of a W-Cu Composite F.A. Costa, F. Ambrozio Filho, A.G.P. Silva, U.U. Gomes, S.J.G. de Lima and W. Acchar	353

POWDER METALLURGY – Metal Matrix Composites

Is Ni a Good Substitutue for Co in PM Diamond Cutting Tools? H.C.P. Oliveira, S.C. Cabral, R.S. Guimarães and M. Filgueira	363
New Integrated Cermet Powder Preparation and Consolidation Method–Ni-ZrO₂ Case T.A.G. Restivo and S.R.H. de Mello-Castanho	370

POWDER METALLURGY – Nanomaterials

Effect of Cr₃C₂-NiCr Powder Characteristics on Structure and Properties of Thermal Sprayed Nanostructured Coatings A.G.F. Padial, C.A. Cunha, O.V. Correa, N.B. de Lima and L.V. Ramanathan	379
Synthesis and Characterization of TiO₂ Nanoparticles by the Method Pechini J.V.M. Zoccal, F.O. Arouca and J.A.S. Gonçalves	385
Porous 3-D Titanium Substrates Obtained by Powder Metallurgy for Nanodiamond Film Growth N.A. Braga, C.A.A. Cairo, N.G. Ferreira, M.R. Baldan and V.J. Trava-Airoldi	391

POWDER METALLURGY – P/M Application

Preparation of Cutting Inserts with Binder of UHCS M.A. Martinez, R. Calabrés, J. Abenojar and F. Velasco	399
Beta Ti-45Nb and Ti-50Nb Alloys Produced by Powder Metallurgy for Aerospace Application G.V. Martins, C.R.M. Silva, C.A. Nunes, V.J. Trava-Airoldi, L.A. Borges and J.P.B. Machado	405

POWDER METALLURGY – Processing

Fluid Dynamic Study of the Fluidized Bed Wit Jambu Seeds (<i>Spilantes oleracea</i> L.) R.O. Lourenço, C.M.L. Costa, C.d.S.R. Sandra, A.L.A. Mesquita and E.N. Macêdo	413
Effect of Process Variables on Efficiency and Particle Growth of <i>Spilantes oleracea</i> Seeds Coating C.M.L. Costa, L.J.G. Faria and C.d.S.R. Sandra	419
Study of the Viability to Obtain Quasicrystal in the Composition AlCuFe Using High-Energy Milling, Followed by Pressing and Sintering R.E. Coelho, R.M.S. Cruz, P.J.C. Esteves, S.G. Viana and S.J.G. de Lima	426
Coating of Granular Polymeric Spacers with Copper by Sputter-Deposition for Enhancing Cell Wall Structure of Sintered Highly Porous Aluminum Materials T. Sonoda and K. Katou	432
Production of Milk of Lime for Sugar Cane Industry: Study of Factors Influencing Lime Slaking H.M. Henrique, L.C. Santos and P.M. Parreira	437
Synthesis of Niobium Carbide (NbC) by Powder Metallurgy High Energy Milling Technique R.T. Antonello, O.O. de Araújo Filho, C.H. Gonzalez, U.S.L. Filho and F. Ambrozio Filho	443
Mixture of Particles' Influence in Computer Simulations of a Spouted Bed D.A. Santos, I. Petri Junior, M.A.S. Barrozo and C.R. Duarte	448
TIG Welding of Sintered AISI 316 L Stainless Steel M.D.M. das Neves, L.P. Barbosa, L.C.E. da Silva, O.V. Correa and I. Costa	454

POWDER METALLURGY – Properties

Performance of Thermally Sprayed Coatings under Reciprocal Sliding Test A.B.C. Arnt, M.R. da Rocha and F.C. da Silva	463
Wear of Diamond Composites Applied as Inserts in Drilling Tools G.S. Bobrovitchii, M. Filgueira, S.N. Monteiro and R.C. Tardim	468

POWDER METALLURGY – Sintering

A Novel Method for Obtaining Polycrystalline Diamond Cutters R.C. Tardim, G.S. Bobrovitchii, S.N. Monteiro, A.L.D. Skury and M. Filgueira	477
Automatic Computer Controlled Process for Superhard Materials Production G.S. Bobrovitchii, W.S. Vianna, A.L.D. Skury, S.N. Monteiro and R.C. Tardim	483
Study on WC-Co-Diamond-Based Composites Used in Cutters of Drill Bits G.S. Bobrovitchii, A.L.D. Skury, M. Filgueira, S.N. Monteiro and R.C. Tardim	489
Sintering of a SiC-Diamond Composite with a New Setup for the Reactive Cell G.S. Bobrovitchii, A.L.D. Skury, S.N. Monteiro and R.C. Tardim	495

POWDER METALLURGY – Spray Forming

Mechanical Properties Evaluation of a Spray Formed AA-6082 Aluminum Alloy G. Siqueira, L.C.P.G. Safra, C.S. Mucsi, M.G. Fernandes and J.L. Rossi	503
--	-----

POWDER METALLURGY – Miscellaneous

Application of CFD in the Study of Performance the Cyclone with Different Shapes A.F. Lacerda, R.O. Lourenço and E.N. Macêdo	515
Fluid Dynamics Study of the Influence of Direction of the Gas Flow in Fabric Filter S.M.S. Rocha, L.G.M. Vieira, M.L. Aguiar and J.J.R. Damasceno	520
Prediction of Performance of a Hydrocyclone with Filtering Cylinder D.C. Oliveira, L.N. Pires, L.G.M. Vieira, J.J.R. Damasceno and M.A.S. Barrozo	525
Numerical Methodology for Orifice Meter Calibration N.M.B. Oliveira, L.G.M. Vieira and J.J.R. Damasceno	531
Use of a Short Duration Electronic Flash in the Study of the Trajectory of Liquid Jet in a Pease-Anthony Venturi Scrubber N.A.G. Puentes, J.V.M. Zoccal, V.G. Guerra, J.R. Coury and J.A.S. Gonçalves	537
Structural and Morphology Characterization ZSM-5 Zeolite by Hydrothermal Synthesis V.J. da Silva, A.C. Crispim, M.B. Queiroz, R.R. Menezes, H.M. Laborde and M.G. Freire Rodrigues	543
Film Fraction and Droplet Size inside of a Rectangular Venturi Scrubber V.G. Guerra, M.A.F. Daher, J.A.S. Gonçalves and J.R. Coury	549
Evaluation of the Influence of Process Variables on Flotation of Phosphate R.C. Santana, M.A. Santos, C.H. Ataíde and M.A.S. Barrozo	555
Synthesis and Characterization of the Catalysts 5 wt.% and 10 wt.% Co/SBA-15 L.A. Lima, B.V. Sousa and M.G. Freire Rodrigues	561
Influence of Crystallization Time on Structural and Morphological Characteristics the Precursor of Zeolite MCM-22 A.S. Barbosa, L.A. Lima, B.V. Sousa, E.R.F. dos Santos and M.G. Freire Rodrigues	567
Coating of Particles in Spouted Bed: Flow Regime and Stability J.L.V. Neto, J.E. Borges, C.R. Duarte and M.A.S. Barrozo	573
Effect of the Salt Solution Concentration in the Number and Size Distribution of Atomized Nanometric Aerosol Particles C.D. Amaral, V.G. Guerra, F.d.O. Arouca and J.R. Coury	581

Solidification of Eutectic Bi_{32.5}In₅₁Sn_{16.5} Alloy under Microgravity Using a Drop Tube R.C. Toledo, M.B. Mattos, C.Y. An and I.N. Bandeira	587
Pyrolysis of Sugarcane Bagasse: A Consecutive Reactions Kinetic Model from TGA Experiments K.G. dos Santos, T.S. Lira, V.V. Murata, M. Giancesella and M.A.S. Barrozo	593
Plasma Etching of Stearic Acid in Ar and Ar-O₂ DC Discharges E.A. Bernardelli, T. Souza, A.M. Maliska, T. Belmonte and M. Mafra	599
Cost Reductions - Materials M.L. Eugênio, M.A. Colosio and J.C. Santos	605
A Comparative Study of the Corrosion Resistance of Stainless Steels Obtained by Powder Metallurgy Techniques for Application in Dental Prosthesis R.A. Marques, A.M. Saliba-Silva, S.O. Rogero, M.d.F. Montemor and I. Costa	617
Effect of Compacting Pressure on Liquid Phase Sintering of ASTM 2124 Alloy L.P. Barbosa, E.P.R. Lima, D. Rodrigues and F. Ambrozio Filho	623

CERAMICS – Ceramic Electric-Electronic

Preparation and Characterization of YSZ Closed-End Tubes for Oxygen Sensors E. Caproni and R. Muccillo	631
Strontium Dopant Concentrations Influence on Nd_{1-x}Sr_xMnO_{3±δ} Structural and Electrical Conductivity R.A. Vargas, R. Chiba, M. Andreoli and E.S.M. Seo	636
Microstructure, Crystalline Phase, and Dielectric Property Analyses of TiO₂ Composition with ZrO₂ Addition J.V.C. Souza, P.J. Castro, M.d.C.d.A. Nono and S.L. Mineiro	641
Sintering Temperature Influence on Microwave Dielectric Properties of TiO₂-ZrO₂ Ceramics J.V.C. Souza, P.J. Castro, M.d.C.d.A. Nono and S.L. Mineiro	646
Effect of Rare Earth Addition on Electrical Properties of Zirconia Based Ceramics R.A. Muñoz, A.C.M. Rodrigues, C. Santos and C.R.M. Silva	652
Intermediate Oxide Layers for Direct Bonding of Copper (DBC) to Aluminum Nitride Ceramic Substrates A.L. Molisani and H.N. Yoshimura	658

CERAMICS – Ceramic Matrix Composites

Ceramics Composites Derived From Polysiloxane / Al₂O₃ / Ti A.L.E. Godoy, J.C. Bressiani and A.H.A. Bressiani	667
--	-----

CERAMICS – Ceramic Processing

Use of Nepheline-Syenite, Talc and Kaolinitic Clay to Obtain Ceramic Tiles K.O. Teixeira, S.N. Monteiro and C.M.F. Vieira	675
Incorporation of Petroleum Coke into Red Ceramic C.M.F. Vieira, L.A. Freitas, R.J.S. Rodríguez and S.N. Monteiro	681
Use of Steel Slag into Clayey Ceramics C.M.F. Vieira and S.N. Monteiro	686
Electrical Porcelain Containing Ornamental Rock Waste: Microstructural Development M.A. Silva and J.N.F. Holanda	692
Development and Characterization of Si₃N₄ Coated AlCrN Ceramic Cutting Tool J.V.C. Souza, M.d.C.d.A. Nono, O.M.M. Silva, G.V. Martins, J.P.B. Machado and M. Pimenta	697
102213 Use of High Energy Ball Milling on the Sintering Optimization of Alumina Ceramics H.R. Simoni, E. Saito, C. dos Santos, F.A. Santos, A.S. Ramos and O.M.M. Silva	701
Elaboration of Yttria-Stabilized Zirconia Films on Porous Substrates T. Falcade, D.P. Tarragó, C.M. Halmenschlager, V.C. de Sousa, C.T. de Oliveira and C.F. Malfatti	707

Rheological Study of Yttrium Oxide Aqueous Suspensions S.C. Santos, L.F.G. Setz, C. Yamagata and S.R.H. de Mello-Castanho	712
Characterization of Clays Used in the Fabrication of Traditional Brazilian Ceramic Pans: Culture and Technique M.C.B. Gadioli, M.C. de Aguiar, C.M.F. Vieira and S.N. Monteiro	718
Development of Ceramic Cutting Tools for Future Application on Dry Machining O.M.M. Silva, J.V.C. Souza, M.d.C.d.A. Nono, G.V. Martins, M.V. Ribeiro and J.P.B. Machado	724
Green Stoneware Containing Waste Metals A.C. da Silva, J.J. Reinosa, J.S. Moya, J.F. Fernandez and S.R.H. de Mello-Castanho	730

CERAMICS – Ceramic Structural

Diffusion Study of Alumina Gray Cast Iron Pair K.P.S. Tonello, V.T. Hernandez, A.H.A. Bressiani and J.C. Bressiani	739
Crystalline Structure and Microstructural Characteristics of the Cathode/Electrolyte Solid Oxide Half-Cells R. Chiba, R.A. Vargas, M. Andreoli, T.A.B. Santoro and E.S.M. Seo	746
Incorporation of Civil Construction Rejects Materials in Structural Ceramic S. Cosin, V.F.J. Kozievitch, J.E.D. Rito, N.E.K. Albanez, G.R.M. Cortés and F.R. Valenzuela-Díaz	752
Mechanical Properties of Nanostructured Zirconia C.P. Silva, C. Santos and C.R.M. Silva	757

CERAMICS – Nanomaterials

Evaluation of the Behavior of Brazilian Bentonite Clays with Different Quantity of Quaternary Ammonium Salt R. Barbosa, D.D. Souza, E.M. Araújo, K.C. Nóbrega and T.J.A. de Melo	765
Evaluation of NiFe₂O₄ Spinel, Synthesized by Combustion Reaction, as a Catalyst for Selective CO Oxidation P.T.A. Santos, H.L. Lira, L. Gama, F. Argolo, H.M.C. Andrade and A.C.F. de Melo Costa	771
Use of Brazilian Clay in Nylon 6 with Different Molecular Weight Nanocomposites E.M. Araújo, R.A. da Paz, T.J.A. de Melo, A.M.D. Leite, R. Barbosa and E.N. Ito	777
Membranes from Nylon 6/Regional Bentonite Clay Nanocomposites A.M.D. Leite, K.M. Medeiros, E.M. Araújo, L.F. Maia, H.L. Lira and R.A. da Paz	784
Hydrothermal Synthesis of Nanostructured Titania W.K. Yoshito, N.A.M. Ferreira, A.C.S.C. Rumbao, D.R.R. Lazar and V. Ussui	788
Nanocomposite Microcapsules from Powders of Polyhydroxybutyrate (PHB) and Smectite Clays M.G. da Silva-Valenzuela, S.H. Wang, H. Wiebeck and F.R. Valenzuela-Díaz	794

CERAMICS – Sintering and Properties

Influence of the Sand Addition on the Processing, Properties and Microstructure of Red Ceramic C.M.F. Vieira, L.F.T. Queiroz and S.N. Monteiro	801
Two-Step Sintering of Samaria-Doped Ceria S.L. Reis and E.N.S. Muccillo	807
Activation Energy for the Sintering of Clay Based Ceramic Powder S.N. Monteiro and C.M.F. Vieira	813
Two-Steps Sintering of Alumina-Zirconia Ceramics M.K. Manosso, E.M.J.A. Pallone, A.L. Chinelatto and A.S.A. Chinelatto	819
Influence of the Sintering Conditions on the Mechanical Properties of Nanosized TZP Ceramics M.J. Bondioli, J.K.M.F. Daguano, A.A. Palmeira, C. dos Santos and K. Strecker	826
Influence of Heat Treatment on the Anelastic Properties of MgB₂ M.R. da Silva and C.R. Grandini	832

Effect of the Pressure and Temperature Cycling in the Sintering of Cubic Boron Nitride Composites under HPHT Conditions G.S. Bobrovinitchii, A.L.D. Skury and S.N. Monteiro	837
A Method for an Improvement in the Quality of Diamond Composite Thermostable Material A.L.D. Skury, S.N. Monteiro, G.S. Bobrovinitchii and M.G. de Azevedo	844
Effect of Nanodiamond Addition on the Mechanical Properties of Polycrystalline Metallic and Polymeric Composites G.S. Bobrovinitchii, A.L.D. Skury, S.N. Monteiro and R.C. Tardim	848
Electrosintering Production of Novel Grade Diamond Composites G.S. Bobrovinitchii, S.N. Monteiro and R.C. Tardim	854
Use of Eucalyptus Firewood Ash into Clayey Ceramic C.M.F. Vieira, M.C.B. Gadioli and S.N. Monteiro	860
Porcelain: Convencional and Microwave Sintering M.V. Gelfuso, A.S.A. Chinelatto, D. Thomazini, L.P. Wendler, D.C. Costa and A.L. Chinelatto	866

CERAMICS – Synthesis & Biomaterials

Application of the Atomic Absorption Technical to Available the Concentration of Silver Ions Incorporated in Glass Matrix by Ionic Exchange Process E. Mendes, K.F. Silva, A. Teixeira, L. Silva, M.M.S. Paula, E. Angioletto, H.G. Riella and M.A. Fiori	873
Effect of pH and Fluoride on Behavior of Dental ZrO₂ Ceramics in Artificial Saliva L.E. Mukaeda, A. Robin, C. dos Santos, S.P. Taguchi, J.P.B. Machado and L.A. Borges	879
Unidirectional Infiltration Method to Produce Crown for Dental Prosthesis Application F.H.D. Pontes, S.P. Taguchi, L.A. Borges, J.P.B. Machado and C. Santos	885

CERAMICS – Synthesis of Ceramic Powders

Use of Microwave Energy for Obtaining the Mullite M.I. Brasileiro, L.N. de Lima Santana, G.A. Neves, R.R. Menezes, H.L. Lira and W.P. Gonçalves	893
Evaluation of the Cu Doping Effects in CeO₂ Catalytic Supports Obtained by Combustion Reaction L.S. Neiva, E. Leal, A.C.F. de Melo Costa, A.J.S. Mascarenhas, H.M.C. Andrade and L. Gama	899
Morphologic and Structural Characterization of the CoFe₂O₄ Synthesized by Combustion Reaction M.S. Lima, J.P.L.M.L. Sousa, D.A. Vieira, H.L. Lira, J.M. Sasaki and A.C.F. de Melo Costa	904
Ni-Zn Nanoferrites Synthesized by Microwave Energy: Influence of Exposure Time and Power D.A. Vieira, V.C.S. Diniz, H.L. Lira, R.H.G.A. Kiminami, D. Cornejo and A.C.F. de Melo Costa	910
Evaluation of Glycine Excess over NiAl₂O₄ Catalysts Prepared by Combustion Reaction for Steam Methane Reforming E. Leal, L.S. Neiva, J.P.L.M.L. Sousa, F. Argolo, H.M.C. Andrade, A.C.F. de Melo Costa and L. Gama	916
Development of Polyamide 6/Ferrite Composites for Absorbers of Electromagnetic Radiation D.C. Bezerra, T.R. de Gouveia Silva, E.M. Araújo, R.A. da Paz and A.C.F. de Melo Costa	922
Synthesis of α-Alumina Powder Obtained from Irradiated Pseudoboehmites A.H. Munhoz, R.M. Peres, S.B. Faldini, L.G. Andrade e Silva, A.A. Aguiar and L.F. de Miranda	928
Obtaining of Mullite by Rapid Sintering from Bentonite Clay J. Gomes, A.I.O. Rocha, R.R. Menezes, G.A. Neves, M.I. Brasileiro and L.N. de Lima Santana	936
Synthesis of Ni-Zn Ferrite Catalysts by Combustion Reaction Using Different Fuels N.L. de Freitas, J.P. Coutinho, M.C. Silva, H.L. Lira, R.H.G.A. Kiminami and A.C.F. de Melo Costa	943
Synthesis of Fine B₄C Powder Using B₄C Seeding in Carbothermal Reduction Process R.M. da Rocha and F.C.L. de Melo	948

Obtaining Tetracalcium Pohosphate and Hydroxyapatite in Powder Form by Wet Method S.V. de Oliveira, M.V.L. Fook, E.P. Araújo, K.M. Medeiros, G.P. Rabello, R. Barbosa and E.M. Araújo	954
The Effect of Hydrothermal Treatment on Samaria and Gadolinia Doped Ceria Powders Synthesized by Coprecipitation A.R. Arakaki, W.K. Yoshito, V. Ussui and D.R.R. Lazar	959
Study of Crystallite Size of Yttria-Stabilized Zirconia Powders by Rietveld Method W.C. Leite, A.S.A. Chinelatto, A.M. Brinatti, M.A. Ribeiro, A.V.C. de Andrade and A.L. Chinelatto	965
Synthesis Characterization and Sintering of Cobalt-Doped Lanthanum Chromite Powders for Use in SOFCs C. Yamagata and S.R.H. de Mello-Castanho	971
Synthesis of Nickel Oxide - Zirconia Composites by Coprecipitation Route Followed by Hydrothermal Treatment W.K. Yoshito, V. Ussui, D.R.R. Lazar and J.O.A. Paschoal	977
Hydrothermal Treatment of Coprecipitated YSZ Powders A.R. Arakaki, W.K. Yoshito, V. Ussui and D.R.R. Lazar	983
Quantitative Phases Determination of Zirconia Ceramics via Rietveld Method R.A. Muñoz, J.E. Rodriguez, C. Santos and C.R.M. Silva	989
Effects of Dependence between Solid Solution and Surface Excess in Nanoparticles G.J. Pereira and D. Gouvea	995

CERAMICS - Miscellaneous

Use of Sludge as Ceramic Materials L.C. de Moraes, R.S.C. Vianna, V. Campos, L.F. Fraceto, A.H. Rosa and P.M. Büchler	1003
Combustion and Pyrolysis of a Sludge Form Wastewater Treatment Plant L.C. de Moraes, J. Dweck, V. Campos, A.H. Rosa, L.F. Fraceto and P.M. Büchler	1009
The Effect of Anionic Sorption on the Metakaolinite V. Campos, L.C. de Moraes, A.H. Rosa, L.F. Fraceto and P.M. Büchler	1015
Comparison of Thermal Analysis, Micro Structural and Compositional of Archeological Indigenous Ceramic (Caninhas Site of Canas - SP) with Actual Clay/Ceramic of Region F.P. Nakano, S.P. Taguchi, C.C. Matos, R.B. Ribeiro and S.J.L. Rosa	1019
Study of Abrasive Ceramic Powders on the Fine Polishing of Metallic and Polymeric Surfaces F.O.O. Landsberger, A.A. Couto, A.R. Zandonadi and D.A.P. Reis	1025
Swelling of Brazilian Organoclays in Some Solvents with Application in the Petroleum Industry M.B. Queiroz, S.C.G. Rodrigues, H.M. Laborde and M.G. Freire Rodrigues	1031
Comparative Study of Organophilic Clays to be Used in the Gas & Petrol Industry S.C.G. Rodrigues, M.B. Queiroz, K.R.O. Pereira, M.G. Freire Rodrigues and F.R. Valenzuela-Díaz	1037
Characterization of Civil Construction Waste and its Incorporation to Mortar G.A. Cunha, A.C.D. Andrade, J.M.M. Souza, A.C.J. Evangelista and V.C. Almeida	1043
Characterization of Sugarcane Bagasse Ash for Use in Ceramic Bodies K.C.P. Faria, R.F. Gurgel and J.N.F. Holanda	1049
Chemical-Environmental Characterization of Waste Coming from Petroleum Industry for Application in Clay Ceramics B.C.A. Pinheiro and J.N.F. Holanda	1053
Synthesis of Zeolite Membrane (Y/α-Alumina) A.P. Araújo, V.J. da Silva, A.C. Crispim, R.R. Menezes and M.G. Freire Rodrigues	1058
Influence of Alkaline Activation over Swelling and Cation Exchange Capacity on Bentonites J.A. Rosário, L.A. Silva, G.B.G. Moura, M. Gusatti, R.B. Lima, M.E.P. Brys, N.C. Kuhnén and H.G. Riella	1064
Analysis of Used Vegetable Oils Treated with Paraíba/Brazil Clays by Kinematic Viscosity E.P. Araújo, E.M. Araújo, M.V.L. Fook, S.V. de Oliveira, D.F. Silva and K.M. Medeiros	1070
A Study of the Behavior of Phosphatic Concentrate in Gas Filtration Cake Formation A.G. Fargnoli, K. Matugi, I. Martinatti and M. Lopes Aguiar	1075

Polysulfone Activated Carbon Composite Membranes P. Anadão, L.F. Sato, H. Wiebeck and F.R. Valenzuela-Díaz	1081
Study of Oxide Layers in Creep of Ti Alloy D.A.P. Reis, J.P.B. Machado, G.V. Martins, C. de Moura Neto, M.J.R. Barboza and A.A. Couto	1087
Synthesis and Characterization of Organophilic Clay from Cuban Chiqui Gomez Bentonite G.R.M. Cortés, T.S. Valera, F.J. Esper, W.T. Hennies and F.R. Valenzuela-Díaz	1093
Investigations Hydrodynamics of the Bed Vibrofluidized Rectangular J.M. Abreu, C.H. Ataíde and M.A.S. Barrozo	1099
Physical Characterization and Biomass Fluidization (Fume Powder) C.H. Ataíde, C.R. Cardoso and L.R. Borges	1105
Strontium-Doped Neodymium Manganite Powder Obtained by the Solids Mixture Technique R.A. Vargas, R. Chiba, M. Andreoli and E.S.M. Seo	1113
Filtration of Electrified Solid Particles in a Fibrous Filter M.V. Rodrigues, M.A.S. Barrozo and J.R. Coury	1118
Technology Characterization of Organo-Clays Obtained from Bentonites of the State of Paraíba G.R.M. Cortés, A.A. Silva, K.R.O. Pereira, F.J. Esper, L.N.L. Santana, W.T. Hennies and F.R. Valenzuela-Díaz	1124
Evaluation of S/S Process of Tannery Waste in Cement by Structural and Mechanical Analysis C.A. Pinto, J. Dweck, J.J. Sansalone, F.K. Cartledge, L.T. Hamassaki, F.R. Valenzuela-Díaz, N.E.K. Albanez and P.M. Büchler	1130
Applications of Ultra High-Pressure Powder-Abrasive Waterjet W.T. Hennies, G.R.M. Cortés, V.H. Lauand, C.T. Lauand, A. Stellin, G. de Tomi and F.R. Valenzuela-Díaz	1137
Determining the Lanthanum Chromite Zeta Potential in Aqueous Media L.F.G. Setz and S.R.H. de Mello-Castanho	1145