

Table of Contents

Preface, Committees

Removal of Cr(VI) from Aqueous Solutions Using Clay from Calumbi Geological Formation, N. Sra. Socorro, SE State, Brazil	
J.C.T. Rezende, V.H.S. Ramos, H.A. Oliveira, R.M.P.B. Oliveira and E. Jesus	1
Preparation and Physical Chemistry Characterization of New Nanostructured Oxides Catalysts by Spray Pyrolysis Method for the Biodiesel Production	
S. Lanfredi, E. Djurado and M.A.L. Nobre	7
Contaminants Removal in Wastewater Using Membrane Adsorbents Zeolite Y/Alpha-Alumina	
A.S. Barbosa, A.S. Barbosa and M.G.F. Rodrigues	12
Structural Characterization for Ceramic Pyrochlores of Bi-Zn-Nb-O	
F.W.C. Farias, A.S.G. Alves, Y.M. dos Santos Alves, F.M.M. Pereira, M.d.D.B. Barroso, J.C. Sales and A.S.B. Sombra	16
Influence of Addition of CaO and SiO₂ in Microstructure of Hexaferrite Ba_XSr_{1-X}Fe₁₂O₁₉	
Y.M. dos Santos Alves, C.H.A. Pereira, F.W.C. Farias, F.M.M. Pereira, M.d.D.B. Barroso, J.C. Sales and A.S.B. Sombra	21
Alpha-Alumina Synthesis	
A.H. Munhoz Jr., H.S. da Silva, M.V. Yamamoto, T.J. Masson, M.O. de Oliveira, L.F. de Miranda, R.C. Andrade and R.M. Peres	27
Synthesis and Characterization of HMOR and Catalyst MoO₃/HMOR, NiO/HMOR and Co₂O₃/HMOR	
F.M.N. Silva, E.G. Lima and M.G.F. Rodrigues	33
Preparation of Molecular Sieve Al-SBA-15 with Two Ratios Si/Al Catalyst for Use in the Transesterification Reaction of Soybean Oil	
J.C. Marinho, T.L. de Almeida Barbosa and M.G.F. Rodrigues	39
Rice Husk Ash as a Raw Material to Produce Willemite Pigments	
L.A. Vieira, M.V. Folgueras, M. Tomiyama and S.R. Prim	44
Structural, Morphological and Textural Features of EDTA-Citrate-Synthesized BaPrO₃ Perovskite-Type Oxide	
A.G. dos Santos, M.F. Lobato, A.B. Vital, F.K.G. dos Santos and C.P. de Souza	50
Evaluation of Phyllite and Sand in the Heavy Clay Body Composition	
L.F. Amaral, C.M.F. Vieira, G.C.G. Delaqua and M. Nicolite	55
Study of the Addition Effect of Fe₂O₃ and Al₂O₃ Originated from Pectin Citrus in the Glassy Phase on the Microstructural Development and in the Mechanical Characteristics of the Triaxial Ceramics	
A. Przybysz, A.L. Chinelatto and F.J. Anaissi	60
Evaluation of the Accelerated Degradation of Mortar in a Ceramic Coating Facade System	
M.G. Cypriano, K.d.M. Degues, A. Rodrigues, S.C.B. da Silva, M.R. Rocha, O.R.K. Montedo and E. Angioletto	65
Characterisation of Refractory Ceramic Pressed Body Containing Industrial Waste	
S.B. Frade, G. Gomes, S.L. Correia and A.M. Segadães	71
Sol-Gel Synthesis of Amorphous Silica Nanoparticles: Study of the Process Parameters Influence on Structure and Particle Size Distribution	
R.D. Aspasio, J.F. da Silva Jr., R. Borges and J. Marchi	77
Evaluation of Hardness and the Fracture Toughness of Composite Biphasic Alumina-YAG	
R.F. Cabral, M.H. Prado da Silva, E.S. Lima, J.B. de Campos and R.d.O. Magnago	82
Assessment of PCM-Impregnated Zeolite as a Matrix for Latent Heat Storage	
K.d.M. Degues, M.G. Cypriano, K.B. Coelho, A.L. Luza, O.R.K. Montedo, L.C. de Castro and E. Angioletto	87
Ni-GDC Nanocomposite Material Prepared by Aqueous Based Tape Casting	
L.B. Cruz, A.C. da Silva, W. Acchar, P. Lima and H.R. Paes Jr.	93
Preparation and Characterization of Pb(Zr,Ti)O₃ Obtained by the Pechini Method	
R.C. Andrade, A.H. Munhoz Jr., L.F. de Miranda and R. Ayres Rocha	97
Hysteresis Modeling of Bonded Anisotropic Ferrite Magnets	
M.F. de Campos, D. Rodrigues, M.C.d.C. Paresque and J.A. de Castro	102

Replacement of NdFeB by Ferrite Magnets M.F. de Campos, D. Rodrigues and J.A. de Castro	106
Phononic Band Gaps in Al₂O₃/Epoxy Composite E.J.P. Miranda Jr. and J.M.C. dos Santos	112
Characterization of Al₂O₃-Al₂TiO₂ Ceramic Composites: Effects of Sintering Parameters on the Properties M.F.R. Pais Alves, C.M.F.A. Cossu, R.d.O. Magnago, A.S. Ramos and C. dos Santos	118
Development and Characterization of Al₂O₃-ZrO₂ Composites Using ZrO₂(Y₂O₃)-Recycled as Raw Material C.M.F.A. Cossu, M.F.R. Pais Alves, L.C.L. de Assis, R.d.O. Magnago, J.V.C. de Souza and C. dos Santos	124
Evaluation of Load Parameters and Hold Time of a Vickers Ultra-Micro Hardness Tester for Measure of Hardness and Modulus of Elasticity of Dental Composites T.C.F. de Melo-Silva, C.L. Melo-Silva, C.F. de Carvalho, Á.B. Teixeira, E.C. Carvalho, A.S. Carvalho, F.A. Araujo, A.M. Nunes, J.F.C. Lins and J.P. de Gouvêa	130
Hydrophilicity, Solubility and Optical Properties in Composite Films of Gelatin and Bentonite Clay in its Natural Form or Modified M.K.S. Monteiro, F.K.G. dos Santos, R.H.d.L. Leite, E.M.M. Aroucha, J.O. Vitoriano and V.R.L. Oliveira	136
Composites Obtained from Alumina and Polymer Derived Ceramic G.A.F. Machado, R.M. Rocha and A.H.A. Bressiani	141
Preparation and Structural Characterization of Hybrid Composites of Semiconductor Oxides with Amorphous Carbon G.D.C. Zocolaro, G.S. Silveira, M.A.L. Nobre and S. Lanfredi	147
Microstructural and Mechanical Properties of Al₂O₃/HAp Composites for Use as Bone Substitute Material M.G. de Lima, E. Leal, E.M.d.J. Agnolon Pallone, R.H.G.A. Kiminami and A.C.F.d.M. Costa	153
Properties of Pre-Sintered ZrO₂(Y₂O₃) Blocks Consolidated by Cold Isostatic Pressing R.B. da Silva Jr., C. dos Santos, L.Q.B. de Campos, S.V. Campos and Y.C.A. de Souza	159
Evaluation of Bonding Resistance after Surface Treatment of Two Glass-Ceramics Used in Dentistry C.L. Melo-Silva, T.C.F. de Melo-Silva, C.F. de Carvalho, Á.B. Teixeira, E.C. Carvalho, A.S. Carvalho, F.A. Araujo, J.P. de Gouvêa and J.F.C. Lins	165
Ceramics and Glass-Ceramics Dental Materials: Chemical Solubility, Cytotoxicity and Mechanical Properties R.d.O. Magnago, C.E. de Lima Abreu, R. Reis Silva, M.F.R. Pais Alves, C.M.F.A. Cossu and C. dos Santos	170
Structural Refinement by the Rietveld Method on Clinkers Obtained from Waste from Pulp and Paper Mills L. Simão, J. Jiusti, N.J. Loh, D. Hotza, F. Raupp-Pereira, J.A. Labrincha and O.R.K. Montedo	175
Reutilization of the Solid Waste Materials Produced by a Ceramic Tiles Industry as a Raw Material for the Production of New Ceramic Tiles R.L. Valença and F. Ferraço	180
Concrete Made with Alternative Fine Aggregates: The Reuse of Porcelain Electrical Insulators M.A. Campos, V.A. Paulon and A.M. de Argollo Ferrão	185
Interlocking Concrete Paving Blocks Produced with Foundry Sand Waste C.C. Santos, L.O.V. dalla Valentina, F.C. Cuzinsky and L.C. Witsmiszyn	191
Characterisation of Geopolymer Cements Obtained from Different Sources of Metakaolin O. Ueno, S. Schwaab, D. Ganashini, M. Tomiyama, M.V. Folgueras and S.L. Correia	196
Cadmium Adsorption Kinetic Study Using Natural Brasgel Clay the Adsorbent J.D. Mota, R.S.S. Cunha, P.N.M. de Vasconcelos and M.G.F. Rodrigues	202
Analysis of Catalytic Potential of a New Heterogeneous Catalyst in the Preparation of Biodiesel F. Storti, M.A.L. Nobre and S. Lanfredi	207
Use of Nickel Slag as Raw Material for Roof Tiles Production F.P.E. Kallas, O.R.K. Montedo and M.D.d.M. Innocentini	212
Characterization of the Non-Polymeric Fraction of Post-Consumer LCD Monitor Housings N. Massaro, C. Fredericci, S.M. Toffoli and T.S. Valera	218

Obtainment of Porous Ceramic Structures: A Comparison among Different Compositions and Methods of Conformation	
L. Simão, D.C.N. Fabris, M.d.M. Machado, R. Caldato, M.D.d.M. Innocentini and O.R.K. Montedo	224
Experimental Statistics Applied to Porous Ceramics Processing	
D.C. de Oliveira, P.N. Mendes, L.M. Godinho, S.C. Maestrelli and A.G. Storion	230
Study of Abrasive Cutting of Natural Quartz for Manufacturing Piezoelectric Power Generators	
L.A.O. Araujo, J.M.D.A. Rollo, C.R. Foschini and C.A. Fortulan	234
A Versatile Software for Construction of the Master Sintering Curve	
R.M. Batista, J.F.R. Naranjo and E.N.S. Muccillo	240
Alumina Membrane Development with Carbon Fiber as Porosity Precursor	
C.R. Consonni, R.H. Tsunaki and C.A. Fortulan	245
Development of Sodium Hydroxide-Activated Metakaolin with Nanocarbon Materials as Synthetic Ceramic Proppants	
V.P.P. de Campos, G.A. Amaral Labat, E. Sansone, D. Gouvea and G.F.B. Lenz e Silva	251
Analysis of the Photocatalytic Potential of the C/TiO₂ Composite	
G.D.C. Zocolaro, G.S. Silveira, M.A.L. Nobre and S. Lanfredi	257
Preparation and Characterization of Tubular Composite Membranes and their Application in Water Flow Measurements	
R.S.S. Cunha, J.D. Mota, M.F. Mota, M.G.F. Rodrigues and F. Machado	263
Intercalation and Characterization of Kaolinite Amazon to Production Polymer Nanocomposites	
J.C.M. Costa, J.E. Neto, R.W. Cruz, E.R. Barreda, N.R. do Nascimento, A.P. Lopes and L.M.F. Lona	269
Biodiesel from Fatty Acids Found in Brazilian Native Cultures as Soybean and Cotton Using the Nanocatalyst Ni_{0.5}Zn_{0.5}Fe₂O₄	
J. Dantas, E. Leal, A.C. Feitosa, E.V. Vasconcelos and A.C.F.d.M. Costa	274
Models Manufacturing of Crystal Systems: An Introduction to Ceramic Materials	
E.d.O. Sancho, E.A. Araújo, W.S. Conde, I.R. Saraiva, R.C.B. Maia, L.M.B. Oliveira, J.C. Sales, A.S.B. Sombra and J.S.V. Albuquerque	280