

Table of Contents

Committees

Foreword

Anisotropy Enhancement in Co Granular Multilayers by Capping

J. Bartolomé, F. Luis, L.M. García, F. Bartolomé, F. Petroff, C. Deranlot, F. Wilhelm, A. Rogalev, P. Bencok and N.B. Brookes

1

Nanostructured Polymer Thin Films : Application to Biosensors

J. Gavillet, S. Getin, E. Quesnel, S. Martin, G. Delapierre, K. Hiller, J. Nestler, T. Gessner, J. Soechting, G. Voirin, L. Buergi, J. Auerswald, H.F. Knapp, S. Ross, S. Bigot, M. Ehrat, A. Lieb, M.C. Beckers and D. Dresse

10

Preparation and Characterization of Nanocomposites of Polyamide 6/Brazilian Clay with Different Organic Modifiers

M.A. Souza, N.M. Larocca, E.M. Araújo and L.A. Pessan

18

Copolymerization of Alkoxysilanes: An Interesting Route to Core-Shell Silica-Silicone Nanoparticles

M. Lopes Dias, M.S. Santos, F.R. Alves and C. Azuma

24

Synthesis of Metal Hydrides by Cold Rolling

S. Pedneault, L. Roué and J. Huot

33

Synthesis of MgH₂ and Mg₂FeH₆ by Reactive Milling of Mg-Based Mixtures Containing Fluorine and Iron

A. Vaichere, D.R. Leiva, T.T. Ishikawa and W.J. Botta Filho

39

Synthesis, Hydrogenation and Mechanical Milling of Pseudo-Binary Zr(Nb_xV_{1-x})₂ (0≤x≤0.65) Alloys

S.A. Loureiro, D. Fruchart, S. Rivoirard, D.S. dos Santos and L.M. Tavares

45

Hydriding Properties of Mg₂Ni Nanocomposites Produced by Low Energy Mechanical Alloying

F.C. Gennari and M.R. Esquivel

52

Mechanical Alloying of Zr-Nb5%at. Powders: Microstructural Evolution and Hydrogenation Properties

S.A. Loureiro, D. Fruchart, S. Rivoirard, D.S. dos Santos and L.M. Tavares

59

Deformation Effects in Metal - Hydrogen Systems

N.E. Skryabina, D. Fruchart, L. Cagnon and A.V. Shelyakov

65

Effect of Mechanical Milling on the Microstructure and Hydrogen Interaction of Both Mm-Ni and MmNi₅-Ni Mixtures

M.R. Esquivel and G. Meyer

72

Effect of the Organoclay Preparation on the Extent of the Intercalation/Exfoliation and the Barrier Properties in Polyamide-6/Montmorillonite Nanocomposites

E. Erdmann, M. Lopes Dias, V.J.R. Rodriguez Pita, F. Monasterio, D. Acosta and H.A. Destefanis

78

Novel Fabrication Method of Nanofluid Having Good Roundness and High Suspension Stability

H. Chang, M.J. Kao, S.C. Lin and D.Y. Huang

85

Hot Extrusion of Nanostructured Al Alloy Powder: Extrusion Ratio and Temperature Effect on the Microstructure and Mechanical Properties

M.M. Peres, J.B. Fogagnolo, F. Audebert, F. Saporiti, A.M. Jorge, C.S. Kiminami, W.J. Botta Filho and C. Bolfarini

91

Processing and Simulation for Consolidation of Nanostructured Al-Cu Powder Alloys

M.M. Peres, J.B. Fogagnolo, A.M. Jorge, C.S. Kiminami, W.J. Botta Filho and C. Bolfarini

97

Rapidly Solidified Al-6Si-3Cu Alloy

C. Triveño Rios, C. Bolfarini, W.J. Botta Filho and C.S. Kiminami

103

Nanocrystallization Kinetics of Amorphous Fe-Based Multicomponent Alloy by Non-Isothermal Analysis

T. Lilly Shanker Rao, K.N. Lad, H. Dhurandhar, A. Pratap and P.K. Jha

109

Electrolytic Manganese Dioxide Nucleation and Growth on Titanium Substrates

A.J.B. Dutra and I.C.F. Almeida

114

Diffusion-Controlled Nanocrystallization of the Fe_{73.5}Cu₁Nb₃Si_{15.5}B₇ Finemet Amorphous Alloy	
R.M. Ribeiro, R.S. de Biasi, D.R. dos Santos and D.S. dos Santos	120
Crystallization of Amorphous Al₈₅Ce₅Ni₁₀ Ribbon	
C. Triveño Rios, S. Suriñach, M.D. Baró, C. Bolfarini, W.J. Botta Filho and C.S. Kiminami	126
Shape and Size Dependent Melting Point Temperature of Nanoparticles	
S.K. Gupta, M. Talati and P.K. Jha	132
Structural and Magnetic Characterization of Polyaniline Composite Films	
J.C. Aphesteguy, S.E. Jacobo, R. López Antón and G.V. Kurlyandskaya	138
Sol-Gel-Microemulsion Titania Nanoparticles and its Performance in Photocatalytic Oxidation of Acetic Acid	
L. del C.I. Cid, M. del C. Grande and B. Ginzberg	144
Al Effect on the Structure of the Spray Formed Fe₈₈Si₁₂ (at%) Alloy	
F. Saporiti, A.H. Kasama, B. Arcondo, W.J. Botta Filho, C.S. Kiminami, C. Bolfarini and F. Audebert	150
A New Approach of Synthesis of Al₂O₃ Nanofluid	
H. Chang, M.J. Kao, Y.C. Chang and D.Y. Huang	155