

Table of Contents

Modification of the Diffusion Process in the Iron-Aluminum System via Spark Plasma Sintering/Field Assisted Sintering Technology H. Becker, D. Heger, A. Leineweber and D. Rafaja	1
Effect of Interfacial Heat Transfer Coefficient on Dendritic Growth and Microhardness during Horizontal Directional Solidification of an Aluminum-Copper Alloy A.S. Barros, A.P. Silva, I.L. Ferreira, O.L. Rocha and A.L. Moreira	10
Precipitation Processes in Hot-Rolled Al-Mn-Sc-Zr Alloy M. Vlach, I. Stulikova, B. Smola, T. Kekule, V. Kodetová and J. Malek	18
Comparative Analysis of the Surface Roughness Parameters due to the Machining Uniformity A. Golabczak, A. Konstantynowicz and M. Golabczak	25
Improving Surface Roughness of Steel Parts XC48 by Tribofinishing Process D. Saidi, M. Bouaziz, A.P. Babichev, M.A. Djema and K. Hamouda	34
Corrosion Monitoring of the Active/Passive/Transpassive State of a High-Alloy CrMnNi Steel by Means of Acoustic Emissions M. Mandel, V. Kietov and L. Krüger	42
Formation and Characterization of Hard Coatings on Ductile Iron Grade 100-70-03 N. López-Perrusquia, M.A. Doñu Ruiz, D. Sánchez Huerta, J. Noriega-Zenteno and J.V. Cortés-Suarez	52
Effects of Vanadium on the Continuous Cooling Transformation of 0.7 %C Steel for Railway Wheels S.T. da Fonseca, A. Sinatora, A.J. Ramirez, D.J. Minicucci, C.R.M. Afonso and P.R. Mei	60
HF Transport Coefficients in Polymers Used for Microelectronic Applications P. González-Aguirre, H. Fontaine, C. Beitia, R. Pastorello, J. Ohlsen and J. Lundgren	68
Mass Transfer Behaviour in Hybrid Solvent Oil Recovery Processes S. Lorimer, R. Boehnke and B. Meza	77
Brazing Vacuum Ceramic Tubes - A Diffusion Profile in the Joint O.R. Bagnato, R.F. Francisco, A.L. Gobbi, T. Falvo and P.M. Pimentel	86
The Effect of Differences in the Diffusion Coefficients of Components on the Onset of Convection in Isothermal Multicomponent Systems V. Kossov, Y. Zhavrin and O. Fedorenko	96
A Dilatometric Study of the Non Isothermal Aging of a Cold Rolled Al-Mg-Si Alloy A. Hayoune	103
Identification of Casting Conditions Influence on the Structure and Properties of Al-Si-X Alloy Castings by Experimental and Virtual Way Z. Ignaszak and J. Hajkowski	110
Identification of the Moisture Distribution in the Intensively Heated Porous Sand Mould Z. Ignaszak and P. Popielarski	121
The State of Grain Boundaries and Grain-Boundary Diffusion in Ultrafine-Grained Mo Obtained by Severe Plastic Deformation V.V. Popov and A.V. Sergeev	130
Atomic Transport in Nano-Crystalline Thin Films A. Portavoce, K. Hoummada and L. Chow	140
Application of Nanotechnology for Enhanced Oil Recovery: A Review M. Sabet, S.N. Hosseini, A. Zamani, Z. Hosseini and H. Soleimani	149
Self and Chemical Diffusion in Liquid Al-Ag M. Engelhardt, A. Meyer, F. Yang, G.G. Simeoni and F. Kargl	157
Microwave Drying of Sweet Potato (<i>Ipomoea batatas</i> (L.)) Slices: Influence of the Osmotic Pretreatment J.R.J. Junqueira, K.S. Mendonça and J.L.G. Corrêa	167
The Effect of Processing Method on Microstructure and Mechanical Behavior of Ti-6Al-4V Plate Produced by Powder Metallurgy Technique T. Shimabukuro, R. Daouk, J. Skupnjak, M. Nordman, M. Burrell, L. Sutanto, A. Abad, H. Garmestani, N. Ula, J. Foyos, K. Almahmoud, O. Almahmoud and O.S. Es-Said	175

Evaluation of the Microstructure and Charpy Impact Toughness of Hot Worked Powder Ti-6Al-4V

A. Dominguez, A. Ali, F. Orantes, N. Ula, Y. Li, J. Foyos, H. Garmestani, A. Tabei, K. Almahmoud, O. Almahmoud and O.S. Es-Said