

Table of Contents

Preface, Scientific Committee and Sponsors

I. Integrated Development of Products and Processes

Influence on Manufactured Products Design of the Processes of Project Management P.D. de Mera Sánchez, C.G. Gaya, V.F. Rosales Prieto and F. Morales Camprubí	3
Influence of Standard ISO 21500 in the Management of Collaborative Networks M. Otero-Mateo, A. Pastor-Fernandez and J.M. Portela-Nuñez	9

II. Machining Processes

A Tool Wear Monitoring System for Steel and Aluminium Alloys Based on the same Sensor Signals and Decision Strategy D.R. Salgado, I. Cambero, J.M. Herrera, J. García Sanz-Calcedo, A. González González, P.J. Núñez López and E. García Plaza	17
Analysis of Cutting Forces in Peripheral Milling under Varying Machining Conditions H.P. Garcia, E.D. Cifuentes, J.P. Garcia and A.V. Idoipe	23
Analysis of Energy Consumption in the Dry Drilling of PEEK GF30 R. Domingo, M. Garcia and M.R. Gomez	29
Comparison of Diameter and Area Change Based Methods for Evaluating Break-IN and Break-OUT Damages in Dry Drilled Holes of Aeronautical Carbon Fiber Composites P. Mayuet, P. Arroyo, A. Portal, M. Álvarez, S.R. Fernández-Vidal and M. Marcos Bárcena	35
Contribution of Surface Finish Monitoring Signals in CNC Taper Turning E. García Plaza, P.J. Núñez, D. Rodríguez Salgado, I. Cambero Rivero, J.M. Herrera Olivenza and J.G. Sanz-Calcedo	41
Cutting Forces Prediction in the Dry Slotting of Aluminium Stacks J. Salguero, M. Calamaz, M. Batista, F. Girot and M. Marcos Bárcena	47
Evaluation of Cutting Tools Secondary Adhesion Wear Using 3D Optical Topography Techniques — Application to Dry Turning of Al-Cu Aerospace Alloy D. García-Jurado, J.M. Mainé, M. Batista, J.M. Vázquez-Martínez, F.J. Puerta and M. Marcos	53
Experimental Prediction Model for Roughness in the Turning of UNS A97075 Alloys F.J. Trujillo, M. Marcos Bárcena and L. Sevilla	59
Influence of the Dry Turning Parameters on the Ultimate Tensile Strength (UTS) of UNS A92024 Samples Á. Gómez-Parra, F.J. Puerta, E.I. Rosales, D. García-Jurado, J.M. Mainé and M. Marcos Bárcena	65
Real Time Diagnosis Charts of Thread Quality in Tapping Operations A. Gil del Val, J. Fernández, P.M. Diéguez, M. Arizmendi and F. Veiga	71
Relationship of Pocket Geometry and Tool Path Strategy with 2 1/2-D Milling Parameters: Machining Time, Cutting Forces and Surface Roughness P.E. Romero, R. Dorado, F.A. Díaz Garrido and E.M. Rubio	78
Topography Prediction on Grinding of Emerging Aeronautical TiAl Intermetallic Alloys A. Beranoagirre and L.N. López de Lacalle	84

III. Forming Processes

An Upper Bound Approach of Ring Compression Test Solutions F. Martín, L. Sevilla, M.Á. Sebastián and A.M. Camacho	93
Characterization of Metal Heating Elements for Resistance Welding of Thermoplastic Matrix Composites (PEEK) I. González, A. Sanz and A. Fernandez	99
Finite Element Model Correlation of an Investment Casting Process E. Anglada, A. Meléndez, L. Maestro and I. Domínguez	105

Observations on the Use of Friction Factor Maps in Metal Forming A.M. Camacho, A.I. Torralvo, C. Bernal and L. Sevilla	111
Selection of the Optimal Distribution for the Upper Bound Theorem in Indentation Processes C. Bermudo, F. Martín and L. Sevilla	117

IV. Non-Traditional Manufacturing Processes

Boundary Element Method Applied to Electroforming Process P.M. Hernandez, A. Socas, A. Benítez, F. Ortega, N. Diaz, M.D. Marrero and M. Monzón	125
Electrolyte Effect on the Surface Roughness Obtained by Electropolishing of AISI 316L Stainless Steel P.J. Núñez, E. García Plaza, M. Hernando Prada and R. Trujillo Coronel	133
Energy Efficient Heat Treatment Process Design and Optimisation I. Mendikoa, M. Sorli, A. Armijo, L. García, L. Erausquin, M. Insunza, J. Bilbao, H. Friden, A. Björk, L. Bergfors, R. Skema, R. Alzbutas and T. Iesmantas	139
Parametric Modeling and Compensation of Layer Manufacturing Machines C. Cajal, J. Santolaria and J. Velazquez	145
Polishing of Ductile Cast Iron with Scan-Head Guided Fiber Laser E. Ukar, A. Lamikiz, S. Martinez and I. Tabernero	151
Surface Quality Analysis in Selective Laser Melting with CoCrMo Powders Y. Pupo, L. Sereno and J. de Ciurana	157
Surface Quality Improvement and Tool Footprint Analysis in a Robotic Grinding Cell J.A. Dieste, A. Fernández and D. Roba	163
Technical Evaluation of Structural Adhesive Joints under Adverse Operation Conditions J.M.A. Reina, R.O. López, C.A. García and J.J.N. Prieto	169