CONTENTS

PROCESSING

ADDITIVE MANUFACTURING
MSEC2013-1105................................................................. V001T01A001
Mechanical Behavior of Ti-6Al-4V Manufactured by Electron Beam Additive Fabrication
Leila Ladani and Lalit Roy

MSEC2013-1131................................................................. V001T01A002
Characterization of Sintered Ti-6Al-4V Powders in Electron Beam Additive Manufacturing
Xibing Gong and Kevin Chou

MSEC2013-1159................................................................. V001T01A003
Improving Densification of Zirconium Tungstate With Nano Tungsten Trioxide and Sintering Aids
M. Wang and P. Kwon

ADVANCES IN BIOMEDICAL MANUFACTURING
MSEC2013-1024................................................................. V001T01A004
Characterization of Printable Micro-Fluidic Channels for Organ Printing
Yahui Zhang, Yin Yu, and Ibrahim Tarik Ozbolat

MSEC2013-1025................................................................. V001T01A005
Development of a Multi-Arm Bioprinter for Hybrid Tissue Engineering
Howard Chen and Ibrahim T. Ozbolat

MSEC2013-1081................................................................. V001T01A006
Bioprinting Induced Cell Damage in Cellular Micro-Fluidic Channel Fabrication
Yin Yu and Ibrahim T. Ozbolat

MSEC2013-1124................................................................. V001T01A007
Cutting Force of Hollow Needle Insertion in Soft Tissue
Bruce L. Tai, Yancheng Wang, and Albert J. Shih

MSEC2013-1154................................................................. V001T01A008
Microcellular Injection Molding of Thermoplastic Polyurethane (TPU) Scaffolds Using Carbon
Dioxide and Water as Co-Blowing Agents
Hao-Yang Mi, Xin Jing, Lih-Sheng Tung, and Xiang-Fang Peng

MSEC2013-1193................................................................. V001T01A009
Feasibility of Laser Surface Texturing for Friction Reduction in Surgical Blades
Tim Velasquez, Peidong Han, Jian Cao, and Kornel F. Ehmann

ADVANCES IN MATERIALS FORMING
MSEC2013-1084................................................................. V001T01A010
Simulation and Experiment on Warm Hydroforming of AZ31 Magnesium Alloy Tube
Shijian Yuan, Zeyun Tang, and Gang Liu
MSEC2013-1129 An Investigation of Sheet Metal Deformation Behavior During Electro-Hydraulic Forming (EHF)
Aashish Rohatgi, Elizabeth V. Stephens, Richard W. Davies, and Mark T. Smith

MSEC2013-1142 Die Wear and Galling in Stamping DP980 Steel
Hua-Chu Shih, Changqing Du, and Dajun Zhou

MSEC2013-1169 An Approach for Increasing Branch Height of a Hydroforming T-Joint With Smaller Branch Diameter
Junyang Peng, Gang Liu, Bugang Teng, Xiaosong Wang, and Sule Feng

MSEC2013-1171 Experimental Study of Biaxial Load-Unload Behavior of DP590 Steel Sheets
Yannis P. Korkolis, Nengxiu Deng, and Toshihiko Kuwabara

MSEC2013-1238 Analytical Design and Implementation of a Uniform Pressure Actuator for Electromagnetic Forming and Welding
E. Thibaudeau and B. L. Kinsey

MSEC2013-1241 Austenite-Martensite Phase Transformation of Biomedical Ni50.8Ti49.2 Alloy by Ball Burnishing
C. H. Fu, Y. B. Guo, and X. T. Wei

MSEC2013-1242 Analysis of Fiber Optic Sensor to Measure Velocity During Electromagnetic Forming and Welding
E. Thibaudeau, B. Turner, T. Gross, and B. L. Kinsey

MSEC2013-1244 An Investigation of Anisotropic Behavior on 5083 Aluminum Alloy Using Electric Current
Abram D. Pleta, Matthew C. Krugh, Chetan Nikhare, and John T. Roth

MSEC2013-1253 A Novel Hybrid Process for Drawing Operations
Kyle Pender and Gracious Ngaile

ADVANCES IN MODELING ANALYSIS, AND SIMULATION OF MANUFACTURING PROCESSES
MSEC2013-1012 Rapid Finite Element Prediction on Machining Process
Long Meng, Xueping Zhang, and Anil Srivastava

MSEC2013-1018 An Empirical Model for the Coefficient of Friction in Injection Molding of Thermoplastics
Omar Bataineh

MSEC2013-1033 Statistical Cutting Force Model for Orthogonal Cutting of Polytetrafluoroethylene (PTFE) Composites
Felicia Stan, Daniel Vlad, and Catalin Fetecau
<table>
<thead>
<tr>
<th>Conference Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSEC2013-1210</td>
<td>Analysis of 1D Abrasive Vibratory Finishing Using Acoustic Emission</td>
<td>Pradeep Kumar Prakasam and Sathyan Subbiah</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>EQUIPMENT DESIGN INNOVATIONS TO ENHANCE MANUFACTURING PROCESSES</strong></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1041</td>
<td>Effect of Ball Nose End Mill Geometry on High Speed Machining of Ti6Al4V</td>
<td>Ramesh Kuppuswamy, Deon Bower, and Poloko March</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1052</td>
<td>Machining of VP20ISOF Steel With Resharpened Carbide Tools in End Milling</td>
<td>Ricardo Ribeiro Moura and Álisson Rocha Machado</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1095</td>
<td>Design of a 3-DOF Compliant Parallel Mechanism for Displacement Amplification</td>
<td>Qiang Zeng and Kornel F. Ehmann</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1100</td>
<td>A Study of the Impact of Workpiece Location on Machining Performance of a 2-DoF PKM</td>
<td>A. B. Koteswara Rao, Sanjay Darvekar, and K. Ramji</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LASER, PROCESS INNOVATIONS AND ENERGY FIELD MANUFACTURING METHODOLOGY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nanocomposites by a Hybrid Manufacturing Technique</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1066</td>
<td>A New Velocity Estimator for Motion Control Systems</td>
<td>Huawen Zheng, Guokun Zuo, and Wenwu Zhang</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1102</td>
<td>Residual Stress Analysis and Weld Bead Shape Study in Laser Welding of High Strength Steel</td>
<td>Wei Liu, Fanrong Kong, and Radovan Kovacevic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1117</td>
<td>Melt Pool Flow and Surface Evolution During Pulsed Laser Micro Polishing of Ti6Al4V</td>
<td>Chao Ma, Madhu Vadali, Neil A. Duffie, Frank E. Pfefferkorn, and Xiaochun Li</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1192</td>
<td>Comparison of Electrically-Assisted and Conventional Friction Stir Welding Processes by</td>
<td>Hemanth Potluri, Joshua J. Jones, and Laine Mears</td>
</tr>
<tr>
<td></td>
<td>Feed Force and Torque</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSEC2013-1197</td>
<td>Alternative Control of an Electrically-Assisted Tensile Forming Process Using Current Modulation</td>
<td>Joshua J. Jones and Laine Mears</td>
</tr>
</tbody>
</table>
MSEC2013-1175.................................................. V001T01A068
Constant Temperature Embossing of PEEK Films
Ramasubramani Kuduva-Raman-Thanumoorthy, Byung H. Kim, and Donggang Yao

MSEC2013-1237.................................................. V001T01A069
Study of Biobased Shape Memory Polyactic Acid/Thermoplastic Polyurethane (PLA/TPU) Blends
Xin Jing, Hao-Yang Mi, Lih-Sheng Turng, and Xiang-Fang Peng

MSEC2013-1251.................................................. V001T01A070
Synthesis and Characterization of High Performance Polymer Nanocomposite Using Carbon Nanotubes as Fillers
N. Thangapandian, S. Balasivanandha Prabu, and R. Paskaramoorthy

MSEC2013-1254.................................................. V001T01A071
Prediction of Mechanical Properties of Microcellular Plastics Using the Variational Asymptotic Method for Unit Cell Homogenization (VAMUCH) Method
Emily Yu and Lih-Sheng Turng

THERMALLY-ASSISTED MANUFACTURING
MSEC2013-1057.................................................. V001T01A072
Application of Laser in Joining Aluminum Foam Hybrid Materials
Alessandro Ascari and Giampaolo Campana

MSEC2013-1069.................................................. V001T01A073
Characterization of Flow Stress for Commercially Pure Titanium Subjected to Electrically-Assisted Deformation
James Magargee, Fabrice Morestin, and Jian Cao

MSEC2013-1093.................................................. V001T01A074
Modelling of Thin-Film Single and Multi-Layer Nanosecond Pulsed Laser Processing
Adrian H. A. Lutey

MSEC2013-1094.................................................. V001T01A075
A Comprehensive Model for Laser Hardening of Carbon Steels
Alessandro Fortunato, Alessandro Ascari, Erica Liverani, Leonardo Orazi, and Gabriele Cuccolini

MSEC2013-1107.................................................. V001T01A076
Ablation Dynamics of Silicon by Femtosecond Laser and the Role of Early Plasma
Xin Zhao and Yung C. Shin

MSEC2013-1134.................................................. V001T01A077
Investigation and Optimization of Laser Welding of Ti-6Al-4V Titanium Alloy Plates
Fabrizia Caiazzo, Vittorio Alfieri, Gaetano Corrado, Francesco Cardaropoli, and Vincenzo Sergi

MSEC2013-1189.................................................. V001T01A078
Picosecond and Nanosecond Pulsed Laser Ablation of Aluminium Foil
Michele Sozzi, Katia Tragni, Stefano Selleri, Annamaria Cucinotta, Adrian H. A. Lutey, Pier Gabriele Molari, and Simone Carmignato

MSEC2013-1200.................................................. V001T01A079
Micro-Laser Assisted Feasibility Test on Soda-Lime-Glass
Deepak Ravindra, Surya Chaitanya Ponthapalli, and John Patten