

19th International Conference on Metal Forming (MF 2022)

IOP Conference Series: Materials Science and Engineering
Volume 1270

Online
11 – 14 September 2022

Part 1 of 2

ISBN: 978-1-7138-6516-2
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

PART 1

Preface

Appendix C: Peer Review Declaration Form

In Situ EBSD Studies of the Selection of Stress-Induced Martensitic Variants in NiTi Alloy	1
<i>C Li, J Luo, H Y Pang, M Q Li</i>	
Improving the Formability During Ultrasonic-Assisted Multi-Stage Incremental Sheet Forming.....	8
<i>S Ghafoor, Y L Li, G L Zhao, F Y Li</i>	
Research on Flow Behavior of 30CrMnSiA During Current-Assisted Plane Strain Compression Deformation.....	17
<i>Q X Xia, C Chen, G F Xiao, H Y Zhou</i>	
Effect of Solution Treatment on Static Recrystallization of a Post-Deformed GH4586 Superalloy	25
<i>K Chen, J Luo, J Yang, M Q Li</i>	
Significant Analysis of the Influence of Process Parameters on the Wrinkling of Aluminum Alloy Double-Wall Gap Tube in Rotary Draw Bending.....	34
<i>X C Hao, Y L Liu, F K Gong</i>	
The Influence of Material Model on the Neck Development for Aluminium Alloy Sheet.....	44
<i>W Huang, H Lu, B Zhou, B B Xiao</i>	
Wrinkling Behavior of the Ultra-Thin Components with Complex Polygonal-Sections During Tube Hydro-Pressing Process.....	52
<i>C Han, Y P Zhuang</i>	
An Efficient Numerical Integration System for Stiff Unified Constitutive Equations for Metal Forming Applications.....	58
<i>J Dear, Z Shi, J Lin</i>	
Aluminum/Steel Rolled Composite Finite Element Secondary Development Simulation and Experimental Study	67
<i>B X Gao, C Yu, H Xiao</i>	
Digitization of Roll Forming and Its Application.....	76
<i>Y Ren, J Dong, Y Sun, A Sedlmaier, Q Guo, D Zhang, J Yang</i>	
Process Parameters Impact on the Forming Quality of Conical Rotary Parts During Power Spinning.....	85
<i>Y X Xiang, X D Shu, Q Y Lu, J B Zheng, Z W Cen</i>	
Feasibility Study on Straightening Process of Rotating Bending for Small and Medium-Sized Shaft and Pipe Parts	94
<i>Q D Meng, J Zhao, Z K Mu, G C Yu</i>	
Influence of Local Reinforcement on the Collision Performance of B-Pillar	100
<i>F F Li, H B Tian, J P Lin</i>	

Experimental Study on Laser Peen Forming of Aluminium Alloy 2024-T351 Plate	105
<i>X Huang, Y S Zeng, M T Wang, S K Zou</i>	
Research on Cross Wedge Rolling Forming Technology of Railway Axles.....	112
<i>J S Xu, Y L Cui, X L Zhao, S L Li, C P Yang, Z F Xue</i>	
Effect of Surface Treatment on Bonding Strength of Hot Rolled Steel Aluminum Clad Plate.....	119
<i>Z J Deng, C Yu, H Xiao</i>	
The Evolution of Cross-Sectional Dimension for Double Wall Brazed Tube in the Multi-Pass Roll Forming	127
<i>M M Liu, Y L Liu, Y Li</i>	
Increase in Ironing Limit of Stainless Steel Cups with Lubricants Containing Ceramic Particles.....	136
<i>Y Abe, T Yamashita, K Mori</i>	
Processing and Performance of Electromagnetic Deformation Combined with Heat Treatment of 2195 Al-Li Alloy	144
<i>J H Xu, L Huang, B X Xie, J J Li</i>	
Plastic Deformation of Ultra-Thin Pure Titanium Sheet Subject to Tension-Compression Loadings.....	152
<i>Y Hou, X L Zhang, J Y Min, M G Lee</i>	
Analytical Modeling of Surface Roughness of Metal Manufactured Components Based on Building History	160
<i>C Bruni, D Ciccarelli, T Mancia, M Pieralisi, L Greco</i>	
Modelling of Ductile Damage in Single Point Incremental Forming Process Using Enhanced CDM Model	168
<i>K Zhang, Z M Yue, C J Su, R Wang, H Badreddine</i>	
Analysis of the Properties and Microstructure of Ultra-Thin Tube	174
<i>J P Yan, R Zhao, B Meng, M Wan, Z X Wang</i>	
Crystal Plasticity Modeling on the Selective Laser Melted AlSi10Mg Alloy	180
<i>Z X Luo, J P He, D Y Li, Y H Peng</i>	
Die Design and Process Optimization for Aluminum Flat Tube Profile with Offset Small Channel	187
<i>X W Wang, G Q Zhao, L Sun, Y L Wang</i>	
Evaluation on Dimensional Stability of Cf/AZ91D Composite Based on the Micro-Yield Strength.....	194
<i>J M Zhou, K Yun, Z Chen, L H Qi</i>	
A Study on Electric Pulse Treatment of Stainless Steel Constructive Forming Process.....	200
<i>J D Deng, T Han, W T Li, F Wang, D S Qian</i>	
Key Technologies of Cooling and Lubrication for Closed Hot Extrusion Automatic Production Line.....	208
<i>Y Q Guo, J H Cui, L D Pan, S Li</i>	
Research on the Edge Effect of 7075 Aluminium Alloy Damaged Aircraft Component Strengthened by Laser Shock Peening	220
<i>X Q Cheng, J H Zhang, S Z Cheng, Q X Xia</i>	
A Study of the Formability of Stainless Steel Foils During Micro Deep Drawing.....	227
<i>L Li, Y Y Qi, X G Ma, Z Y Jiang, K Manabe, C S Lee, J W Zhao</i>	

Study on Twist Defect of Thin-Walled Components with Asymmetric Section During Roll Forming	236
<i>JJ Cheng, JG Cao, KRuan, XS Wang, JLiu, RG Zhao</i>	
Prevention of Peeling of Al-Si Coated Layer in Hot Stamping Using Corner Thickening by Planar Compression	244
<i>T Maeno, Y Ohtsuka, A Talebi-Anaraki, R Watanabe</i>	
Incremental Rolling Forming Process to Fabricate Surface Micro-Grooves.....	252
<i>HYuan, YL Li, GL Zhao, FF Liu, FY Li</i>	
Study on Anti-Barrel Deformation of Ultrasonic-Assisted Upsetting	258
<i>NY Zhu, JL Chen, WK Lai, SB Zuo</i>	
Study on Hybrid Hydroforming Process of Sheet Metal with Multi-Concave and Convex Surface Parts.....	268
<i>XT Xiao, CX Qi, FWu, ZR Zhang, MT Chen, FQ Zhou, XL Chen, XS Zhou</i>	
Research on Densification Mechanism of Inconel 718 Alloy Miniature Gear by Electric Field-Assisted Sintering.....	276
<i>LY Ma, BMeng, ZY Zhang, MWan</i>	
Plastic Deformation Behavior of Bending Aluminum Fiber Porous Material Under Compressive Load.....	282
<i>J Li, YH Peng, YX Zhang, ZR Zhang, FWu</i>	
Spinning Deformation Mechanism of Aluminum Alloy Cylinder with Multi-Level Stiffeners Based on Numerical Simulation.....	288
<i>YH Meng, XP Yu, ZL Lai, YX Zhao, ZQ Yu</i>	
A New Dieless Forming Method for Metal Bellows Induced by Local Thermal Buckling	294
<i>TY Zhang, DQ Li, TJ Xu, YF Sui, XH Han</i>	
Circumferential Pure Shear Test of Thin-Walled Aluminum Alloy Tubes	301
<i>SN Zhang, XS Wang, ZY Lin, GLiu</i>	
Investigation on the Influence of Grinding Parameters on Surface Integrity of Substrate in Metal Additive Forging	307
<i>J Feng, Y Zhao, DJ Feng, ZJ Jin, J Guo</i>	
Effect of Loading-Path on the Elastic Modulus Degradation of High Strength Steels.....	316
<i>HY Yu, HY Wu, ZK Chu</i>	
Numerical Simulation of Extrusion of FeMnSiCrNi/NiTiNb Dissimilar Shape Memory Alloy Composite Tube Based on Finite Element Method and Cellular Automaton	328
<i>SY Jiang, DSun</i>	
Die Design for Fine Micro-Blanking Process.....	336
<i>K SJi, YX Liu, YJ Zhang, HZhang</i>	
Multi-Scale Simulation of Deformation and Recrystallization of Austenitic Stainless Steels with Solidified Columnar Crystal Structures.....	345
<i>XT Zhu, HZhu, J Chen, HQ Chen</i>	
Study on the Key Process Parameters of Hydrodynamic Deep Drawing on the Stainless Steel Single Sink with Countertop	352
<i>FWu, YH Hong, SQ Zhao, J Chen, QJ Liang, BJ Mo, ZR Zhang, XT Xiao, FQ Zhou</i>	

Constitutive Model and Forming Limit Prediction of AA5182-O Aluminium Alloy Sheet in Electromagnetic Forming	363
<i>W Liu, Y Z Lin, Z H Meng, J Q Li, S Y Huang</i>	
Springback Prediction Model of Ti-6Al-4V Tube Warm Bending Based on Modified JC Model Considering Variable Temperature Field	371
<i>L Wang, Z L Wang, S Y Zhang, Y C Lin, M Y Fu</i>	
Research on Forming Limit of Ni-Based Superalloy During Spinning Under Complex Strain Path	380
<i>G F Xiao, Q X Xia, Y Chang, H Y Zhou</i>	
Intelligent Template Based Die Face Design Method for Process Reuse of Automotive Panel	388
<i>H J Kong, Z B Zhang, Y Q Liu, Y Wei, Z Wang</i>	
Titanium Clad Plate Forming: Critical Consideration and How Different it is from Solid Titanium Forming	393
<i>T Parmar, V Bangar, R Gupta, K P Bhatt</i>	
High Strain Rate Compressive Behaviour of 6000-Series Aluminium Alloy Sheet Under SHPB Impact Loading.....	401
<i>F F Zhang, K He, B Huang, H L Chen</i>	
Analysis and Characterization of Roping in AA6XXX Automotive Sheet	407
<i>Y Hu, X Yuan, G Zhou, L Cao, B Yang, D Li</i>	
Simulation and Experimental Study of GGG70L Laser Quenching.....	415
<i>H Y Ding, Y J Guan, Y Q Li, J Q Zhai, J Lin, Q H Ren, X J Li</i>	
Microstructure and Mechanical Properties of a 2000 MPa Grade Ultrahigh Strength Boron Steel	426
<i>Z Y Chang, Z Y Liu, Q Yu, S Chen, C S Yu, L Li, Z W Zheng</i>	
Research on Variation Law of Workpiece Temperature of Three Roll Skew Rolling Hollow Axle	431
<i>J T Wang, X D Shu, S Zhang, Y X Xia, Z Pater</i>	
Influence of Cold Rolling Process on the Lankford Coefficient, Drawability and Texture of AISI 430 Ferritic Stainless Steel	437
<i>L L T Vaughan, B M Gonzalez, J A G Sousa, F J R Cangue, I Z Saraiva, S H F S Rocha</i>	
Development and Perspectives of Rolling of Rib Stiffened Plate	447
<i>Y Alfawzan, Z Shi, J Lin</i>	
Strain Distribution at the Transition from Bent to Unbent Regions in Tube Rotary Draw Bending: An In-Situ, Real-Time Measurement Study	455
<i>X He, J Ma, T Welo</i>	
Virtual Rolling Automation and Setup Calculations for Six Stands FEM Finishing Mill	463
<i>J Ilmola, O Seppälä, A Pohjonen, J Larkiola</i>	
Development of a Multi-Container Extrusion Method for Extruding Lightweight Wide Plates and Sheets	475
<i>W Li, J Yu, J Lv, Z Shi, J Lin</i>	
Effect of Process Parameters on Forming Quality of Hollow Axle Blank with Rotary Piercing	481
<i>C Q Ye, X D Shu, F Lin, J T Wang, Y X Xia, S Zhang</i>	
Study on Grain Deformation in Bending Zone of SUS304 Stainless Steel Foil.....	488
<i>Y S Xu, L C Xu, W G Zhang</i>	

Effect of Rolling Reduction on the Microstructure of the Copper/Aluminum Composite Strip Produced by Micro Flexible Rolling	496
<i>C Wang, L N Ma, X G Ma, T Wang, Z Y Jiang, L A Dobrzański, J W Zhao</i>	
Ti6554 Titanium Alloy Electrically Assisted Compression: Modelling and Simulation Based on Dislocation Density Theory.....	504
<i>Y Zhou, C Wu, Z Qu, B Lin</i>	
Biaxial Tension Under Bending and Compression - Development of a New Formability Test for Incremental Sheet Forming	513
<i>S Ai, H Long</i>	
PART 2	
Wall Thickness Control in Multi-Stage Hydroforming of Multiwave Seal Ring with Small Diameter	525
<i>B Y Yan, B Meng</i>	
Effect of Impact Loading on Structural Properties of Multi-Layered Ta/Cu, Nb/Cu and Fe/Cu Plates Fabricated by Single-Shot Explosive Welding	537
<i>H Paul, M M Miszczyk, M Prażmowski, R Chulist, P Petrzak, N Schell, M Fatemi</i>	
Strength of Nano-Twinned Gradient Nano-Grained Copper: Molecular Dynamic Simulation.....	548
<i>Y Tian, F Chen</i>	
Study on LBW/SPF/DB Technology of TA15 Four-Storey Lightweight High Strength Cylinder.....	554
<i>X F He, R Ding, Z Q Liu, X K Yang, Q Q Zhao, Q Zhang</i>	
Effect of Coating on Hydrogen Embrittlement of Hot Stamping 22MnB5 High Strength Steel During Electrochemical Charging.....	564
<i>Y Liu, Y Chen, C D Yang, X H Han</i>	
Study on Dynamic Recrystallization Mechanism and Model of TB15 Titanium Alloy	571
<i>D Zhang, X J Dong, Y Xu, Z L Tu, S Q Lu, S H Gong</i>	
Dimensional Optimization of Variable Thickness Tube in T-Shaped Tube Hydroforming Using Response Surface Methodology	582
<i>M T Chen, X T Xiao, J H Tong, H Guo, F Q Zhou, F Zhou</i>	
Simulation of Edge Cracking Using Shear GTN Damage Model During Hot Plate Rolling of Magnesium Alloys.....	596
<i>C C Zhao, J L Liu, Z X Li, R Jia, Z Q Huang, T Wang</i>	
An Analytical Model for Predicting the Extrusion Force for the Torsion Extrusion Process of Metals	605
<i>Z Y Liu, S L Zhao, Z S Cui</i>	
Modelling in Materials Behavior of Strength Differential Effect and Yield Locus Evolution with Non-Associated Flow Rule.....	616
<i>Y Zhou, Q Hu, J Chen</i>	
Analysis of Grain Size Distribution Evolution of Steel During Recrystallization and Grain Growth.....	627
<i>O Seppälä, A Pohjonen, M Ali, J Larkiola, T Fabritius</i>	
Central Defects Control of Ti-6Al-4V Alloy with Heavy Section Reduction During Flat Cross Wedge Rolling	641
<i>M J Shi, M Cheng, S H Zhang, H Tan, M Chen, V Petrenko, G V Kozhevnikova</i>	

Effect of Asymmetric Rolling on Microstructure and Mechanical Properties of Aluminum Matrix Composites	650
<i>K G Luo, H L Yu</i>	
Effect of Surface Roughness on Strain Distribution During Bending	658
<i>A Kaijalainen, A-P Pokka, M Jaskari, J Kömi</i>	
Simulation Study on the Texture Evolution Mechanism of Magnesium Alloy Cylindrical Parts with Inner Ribs During Hot Power Spinning.....	665
<i>S Yuan, Q X Xia, X Q Cheng, G F Xiao</i>	
An Application Exploration of Flexible Skew Rolling a Rail Car Axle	675
<i>L F Lin, B Y Wang, J P Liu, Z H Zheng, C B Zhu</i>	
Forming Limit of AZ31B Magnesium Alloy Under In-Plane Complex Biaxial Loading Paths with Cruciform Specimens	684
<i>H B Wang, Z C Liu, X Z Deng</i>	
Numerical and Experimental Investigation of the Thermal Behavior and Microstructure of Wire Arc Additive Manufactured 316L Stainless Steel Straight Wall Part	698
<i>Y Y Di, Z Z Zheng, S Y Pang, J J Li</i>	
Design of a Novel Experimental Profile for the Development of a Numerical Model for Extrusion Processing of a Magnesium Alloy	706
<i>J E Plumeri, W Z Misolek</i>	
Investigation of Flexible Free Incremental Sheet Forming (FFISF) Process to Form Ti6Al4V Free-Form Surface Panel at Room Temperature.....	713
<i>M Yang, Z D Chang, J Chen</i>	
Plastic Deformation Behavior of Ti45Nb in Ultrasonic Vibration-Assisted Compression.....	719
<i>C X Yu, L Zhang, Z L Wang, Y D Zhai, C Shao, J Q Zhai, Y J Guan, J Lin</i>	
Multi-Scale Modelling of Deformation Heterogeneities in Explosively Welded Layered Sheets.....	724
<i>M Mojzeszko, K Perzynski, L Madej, J Majta</i>	
Model for Characterizing Static Softening Behaviour of GH4500 Superalloy During Two-Pass Thermal Compression	730
<i>Z Y Zhou, Y W Wang, S Zhu, L G Guo</i>	
Influence of Mechanical Properties and Alloying Elements of Low Carbon Steels on Fine Blanking and Heat Treatment Processes Response.....	741
<i>T Chiavazza, M Marnier, A Achille, V Woimbee, D Even, C Colasse, D Osmond, S Eve, E Hug</i>	
Experimental Investigation of Longitudinal and Transverse Welds During Sideways Extrusion	748
<i>X Lu, J Yu, V A Yardley, Z Wu, H Liu, Z Shi, J Lin</i>	
Effects of Annealing Temperature on Micro Deep Drawing of Stainless Steel-Copper Composite.....	754
<i>Y Y Qi, X G Ma, L N Ma, T Wang, Z Y Jiang, L A Dobrzański, J W Zhao</i>	
A Flow Forming Process Model to Predict Workpiece Properties in AISI 304L.....	762
<i>B Arian, A Oesterwinter, W Homberg, J R Vasquez, F Walther, L Kersting, A Trächtler</i>	
Investigation of the Influence of Material and Sheet Thickness on a Three-Stage Process Chain for Cold Forming of Micro Gears with a Module of 0.1 mm.....	776
<i>M Leicht, A Rohrmoser, M Kraus, M Merklein</i>	

Layout Optimization of Robot Forging Unit Based on Genetic Algorithm.....	786
<i>N Zhang, Y B Zhao, Q S Liu, Q Zeng, B Liu, X Y Ding</i>	
Forgeability Characterization of Multi-Material Based Functionally Graded Materials Manufactured Through Friction Stir Consolidation	799
<i>A Latif, G Ingara, G Buffa, L Fratini</i>	
Experimental Study on Friction Stir Modification of LA103Z Mg-Li Alloy	807
<i>F J Chen, J Q Zhai, Y J Guan, Y Li, H Chen, K Hu, J Lin, Q H Ren, X J Li</i>	
A Unified Model to Predict the Hot Stamping and Subsequent Stress-Relaxation Process of a Ti- 6Al-4V Alloy	818
<i>H S Chen, L H Du, M Shahzad Khan, T Zhang, Y H Mu, Y Zhang, Y Li</i>	
Crystallographic Aspect of Shear Bands Formation in Pure Iron Deformed at High Strain Rates.....	829
<i>I Mania, H Paul, R Chulist, P Petrzak, M Prażmowski</i>	
Simulation and Experiment of Thermal Deformation Behavior of Reflector Panels with Honeycomb Sandwich Structure	837
<i>D S Li, M X Ye, M M Wang, J Q Liu</i>	
Estimation of Frictional Coefficient Between Tool and Specimen in Container-Less Tapered Plug Penetration Test	844
<i>K Asai, K Kitamura</i>	
Effect of In-Situ Transverse Magnetic Field on the Fluid Flow, Microstructure Evolution and Corrosion Resistance of GMAW 316L Stainless Steel.....	854
<i>Y Zhong, Z Z Zheng, J J Li, C Wang</i>	
Hot Workability and Microstructure Evolution of Wire Arc Additive Manufactured 300M Steel	867
<i>Y B Xiong, D X Wen, Z Z Zheng, J J Li</i>	
Research on Ultrasonic Vibration Assisted Ploughing-Extrusion Process in Forming μ -Scale Micro Grooves	875
<i>H D Zhang, L Deng, X Y Wang</i>	
Grain Refinement of Ti2AlNb-Based Alloy Through Canned Multi-Directional Forging.....	884
<i>Z Y Yang, H W Liu, Z S Cui</i>	
Micro-Indentation of Oxidized Low Carbon Steel to Evaluate Properties of Oxides	891
<i>V Claverie-Burgué, P Montmitonnet, K Inal, A Burr, A Nicolay, M Picard, A Settefrati</i>	
Plastic Deformation Behavior of Aluminum Alloy Fiber Porous Body and Its Filled Tube Under Impact Loading.....	904
<i>S W Zheng, Y H Peng, Z R Zhang, F Wu</i>	
Dynamic Transformation of a Near Alpha High-Temperature Titanium Alloy During Hot Deformation.....	910
<i>W X Xu, Z L Zhao, N Liu, X Y Huang, S Li, Y B Wang</i>	
Improved Binarization Based Method for Local Formability Characterization of Modern Steels.....	924
<i>S Upadhyaya, S Rosenthal, S Wernicke, M Yasir, K Unruh, A E Tekkaya</i>	
Optimum Arrangement of Rubber Layout for Stretch Bending Method to Improve the Shape Accuracy.....	933
<i>T Muranaka, Y Fujita, M Otsu</i>	

Investigation on Thickness Size Effect on Ductility of Magnetron Sputtered Niobium Coatings on SS316L Substrate for Forming of Precoated Metallic Bipolar Plates..... <i>C Z Li, Z T Xu, L F Peng, X M Lai</i>	939
Research on Short Process Hot Forming Technology of a Medium Manganese Steel..... <i>Z R Hou, J Y Min, J F Wang, Q Lu, X Zhang, J P Lin</i>	948
Construction of Extrusion Processing Window for P/M Nickel-Based Superalloy Using Deep Neural Network and Its Validation <i>H N Wen, J S Jin, X Y Wang</i>	955
Investigation on the Thermo-Mechanical Properties of Hot Stamped Parts by Using Laser-Implanted Tool Surfaces..... <i>S Schirdewahn, N Carstensen, K Hilgenberg, M Merklein</i>	962
Comparison of Two CDM-Based Models for Necking and Fracture Limits of Metal Sheets Under Hot Stamping Conditions <i>R Zhang, J Lin</i>	970
New Developments of Formability Evaluation Methods for Hot Stamping..... <i>J Li, Q Cheng, R Zhang, Z Shi, J Lin</i>	977
Microstructure Evolution and Interface Characteristics of Diffusion Bonded Dissimilar Titanium Alloys <i>Q W Zhang, T L Li, J J Wu, X F Li, J Chen, G H Wu</i>	985
The Preparation of Gradient Titanium Alloy Through Laser Deposition <i>N Liu, Y L Liu, Z L Zhao, H O Yang, W X Xu</i>	991
Influence of Amorphous Phase on Crack Initiation and Propagation Behaviours in NiTi Shape Memory Alloy Based on Extended Finite Element Simulation..... <i>Y Zhang, K Guo, S Jiang</i>	1002
Characterization of Anisotropic Hardening of AA3003-O <i>Y Lou, Z Chen, C Zhang, N Jiang, G Yang</i>	1011
Investigation on Temperature Uniformity Control of Titanium Extrusion in Hot Stretch Bending Process..... <i>F C Cao, B S Liu, Y S Zeng, W Wu, Y J Wang</i>	1017
Advances on Manufacture Methods for Wide Lightweight Aluminium Stiffened Panels..... <i>Z Zhang, W Zhou, Z Shi, J Lin</i>	1025
Optimisation of Panel Component Regions Subject to Hot Stamping Constraints Using a Novel Deep-Learning-Based Platform..... <i>H R Attar, A Foster, N Li</i>	1033
Mechanical and Geometrical Characterisation of Tumbling Self-Piercing Riveting Joints in Multi-Material-Systems..... <i>S Wituschek, M Lechner</i>	1043

Author Index