

12th International Conference on Numerical Methods in Industrial Forming Processes (NUMIFORM 2016)

MATEC Web of Conferences Volume 80 (2016)

Troyes, France
4 - 7 July 2016

Editor:

Khemais Saanouni

ISBN: 978-1-5108-3167-4

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 license:
<http://creativecommons.org/licenses/by/2.0/>

You are free to:

Share – copy and redistribute the material in any medium or format.

Adapt – remix, transform, and build upon the material for any purpose, even commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. The copyright is retained by the corresponding authors.

Printed by Curran Associates, Inc. (2016)

For additional information, please contact EDP Sciences – Web of Conferences
at the address below.

EDP Sciences – Web of Conferences
17, Avenue du Hoggar
Parc d'Activité de Courtabœuf
BP 112
F-91944 Les Ulis Cedex A
France

Phone: +33 (0) 1 69 18 75 75

Fax: +33 (0) 1 69 28 84 91

contact-edps@webofconferences.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

PREFACE	1
<i>Saanouni K., Chenot J.L., Duval J.L.</i>	
ADVANCED NUMERICAL SIMULATION BASED ON A NON-LOCAL MICROMORPHIC MODEL FOR METAL FORMING PROCESSES	2
<i>Diamantopoulou Evangelia, Labergere Carl, Badreddine Housseem, Saanouni Khemais</i>	
NONLOCAL CONSTITUTIVE EQUATIONS OF ELASTO-VISCO-PLASTICITY COUPLED WITH DAMAGE AND TEMPERATURE	9
<i>Liu Weijie, Saanouni Khemais, Labergère Carl, Badreddine Housseem, Forest Samuel, Hu Ping</i>	
MODELLING OF FLOW BEHAVIOUR AND DYNAMIC RECRYSTALLIZATION DURING HOT DEFORMATION OF MS-W 1200 USING THE PHASE FIELD FRAMEWORK	16
<i>Hiebeler Jan, Khlopkov Kirill, Shchyglo Oleg, Pretorius Thomas, Steinbach Ingo</i>	
APPLICATION OF A SECOND-GRADIENT MODEL OF DUCTILE FRACTURE ON A DISSIMILAR METAL WELD	23
<i>Yang Jun, Lacroix Rémi, Bergheau Jean-Michel, Leblond Jean-Baptiste, Perrin Gilles</i>	
FINITE SIMILITUDE IN METAL FORMING	30
<i>Davey Keith, Darvizeh Rooholamin, Al-Tamimi Anees</i>	
SIMULATION ON MICROSCOPIC DEFORMATION BEHAVIOR OF ENGINE GASKET	37
<i>Cao Ke, Zhao Yixi, Jin Sun</i>	
A NEW MICRO SCALE FE MODEL OF CRYSTALLINE MATERIALS IN MICRO FORMING PROCESS	44
<i>Luo Liang, Xie Haibo, Wei Dongbin, Wang Xiaogang, Zhou Cunlong, Jiang Zhengyi</i>	
INTRODUCTION TO THE LEVEL-SET FULL FIELD MODELING OF LATHS SPHEROIDIZATION PHENOMENON IN A/B TITANIUM ALLOYS	52
<i>Polychronopoulou D., Bozzolo N., Pino Muñoz D., Bruchon J., Shakoor M., Millet Y., Dumont C., Freiherr von Thüngen I., Besnard R., Bernacki M.</i>	
A NEW ALGORITHM FOR DENSE ELLIPSE PACKING AND POLYGONAL STRUCTURES GENERATION IN CONTEXT OF FEM OR DEM	60
<i>Ilin Dmitrii N., Bernacki Marc</i>	
FULL FIELD MODELING OF DYNAMIC RECRYSTALLIZATION IN A GLOBAL LEVEL SET FRAMEWORK, APPLICATION TO 304L STAINLESS STEEL	68
<i>Boulais-Sinou Romain, Scholtes Benjamin, Muñoz Daniel Pino, Moussa Charbel, Poitault Isabelle, Bobin Isabelle, Montouchet Aurore, Bernacki Marc</i>	
SIMULATION OF THE COMBINED PROCESS “HELICAL ROLLING-PRESSING” IN THE SOFTWARE PACKAGE SIMUFACT. FORMING	74
<i>Abdrakhman Naizabekov, Sergey Lezhnev, Evgeniy Panin, Alexandr Arbuz</i>	
DUCTILITY PREDICTION OF SUBSTRATE-SUPPORTED METAL LAYERS BASED ON RATE-INDEPENDENT CRYSTAL PLASTICITY THEORY	82
<i>Akpama Holanyo K., Bettaieb Mohamed Ben, Abed-Meraim Farid</i>	
DIRECT MICRO-TO-MACRO MODELLING OF THE COLD ROLLING OF PEARLITIC STEEL	90
<i>Delannay Laurent, Tacq Jeroen, Barde Didier, Seefeldt Marc</i>	
STUDY ON MICRO HYDRO-MECHANICAL DEEP DRAWING USING FINITE ELEMENT METHOD	95
<i>Ma Xiaoguang, Zhao Jingwei, Du Wei, Zhang Xin, Jiang Laizhu, Jiang Zhengyi</i>	
MODELING GRAIN ORIENTATION OF DP600 STEEL BY ND:YAG LASER	100
<i>Liu Shibo, Kouadri-Henni Afia, Gavrus Adinel</i>	
COMPACTION SIMULATION OF NANO-CRYSTALLINE METALS WITH MOLECULAR DYNAMICS ANALYSIS	108
<i>Khoei A.R., Rezaei Sameti A., Mofatteh H., Babaei M.</i>	
PREDICTION OF MEAN GRAIN SIZE EVOLUTION DURING THE FORGING OF IN718 TURBINE DISC	116
<i>Haiyan Zhang, Shihong Zhang, Ming Cheng</i>	
RESEARCH ON HOT STAMPING FOR A TYPICAL PART OF B1500HS BORON STEEL USING EXPERIMENT AND NUMERICAL SIMULATION METHODS	121
<i>Li Huiping, Tang Bingtao, He Lianfang, Wang Cheng</i>	
FULL-FIELD SIMULATION OF SOLIDIFICATION AND FORMING OF POLYCRYSTALS	130
<i>Borukhovich Efim, Boeff Martin, Monas Alexander, Tegeler Marvin, Kim Se-Jong, Oh Chang-Seok, Steinbach Ingo</i>	

CRYSTAL PLASTICITY EXTEND FEM IMPLEMENTATION OF THERMAL-TENSILE ALUMINUM ALLOY	136
<i>Liu Yang, Zhu Yiguo, Ying Liang, Hu Ping</i>	
BIAXIAL EXPERIMENTS AND NUMERICAL ANALYSES ON DAMAGE PREDICTION IN METAL FORMING PROCESSES	141
<i>Brüning Michael, Gerke Steffen, Schmidt Marco</i>	
DUCTILE FAILURE ANALYSIS OF HIGH STRENGTH STEEL IN HOT FORMING BASED ON MICROMECHANICAL DAMAGE MODEL	149
<i>Ying Liang, Liu Wenquan, Wang Dantong, Hu Ping</i>	
PREDICTION OF FORMING LIMIT DIAGRAMS UNDER COMBINED BENDING-STRETCHING LOADINGS	154
<i>Bettaieb Mohamed Ben, Lagaza Honoré, Abed-Meraïm Farid, Lemoine Xavier</i>	
EVALUATION OF DUCTILE FAILURE MODELS IN SHEET METAL FORMING	161
<i>Amaral Rui, Teixeira Pedro, Azinpour Erfan, Santos Abel D., Cesar de Sa J.</i>	
PREDICTION OF WRINKLING AND SPRINGBACK IN SHEET METAL FORMING	167
<i>Neto D.M., Oliveira M.C., Alves J.L., Santos A.D., Menezes L.F.</i>	
NUMERICAL PREDICTION OF DUCTILE FAILURE IN THE BLANKING PROCESS BY MEANS OF UNCOUPLED AND COUPLED PHENOMENOLOGICAL DAMAGE MODELS	175
<i>Canales Cristian, Ponthot Jean-Philippe</i>	
DETERMINATION OF INSTABILITY OF A DP 980 STEEL SHEET UNDER DIFFERENT STRESS STATES BASED ON EXPERIMENT AND THEORETICAL MODELS	183
<i>Song Hong-Wu, Sun Dong-Zhi, Andrieux Florence, Zhang Shi-Hong</i>	
FEM-DEM COUPLING SIMULATIONS OF THE TOOL WEAR CHARACTERISTICS IN PRESTRESSED MACHINING SUPERALLOY	189
<i>Ruitao Peng, Heng Tang, Xinzi Tang, Zhuan Zhou</i>	
FINITE ELEMENT METHOD ANALYSIS OF SURFACE ROUGHNESS TRANSFER IN MICRO FLEXIBLE ROLLING	197
<i>Qu Feijun, Xie Haibo, Jiang Zhengyi</i>	
ADVANCED WEAR SIMULATION FOR BULK METAL FORMING PROCESSES	205
<i>Behrens Bernd-Arno, Bouguecha Anas, Vucetic Milan, Chugreev Alexander</i>	
COMPARATIVE ANALYSIS OF BONDING MECHANISM IN SOLID STATE METAL WORKING PROCESSES	209
<i>Buffa G., Pellegrino S., Lo Valvo E., Fratini L.</i>	
HEAT TRANSFER MODELING IN ASYMMETRICAL SHEET ROLLING OF ALUMINIUM ALLOYS WITH ULTRA HIGH SHEAR STRAIN	217
<i>Pesin Alexander, Pustovoytov Denis</i>	
MODELING OF THE ROLL WEAR AND MATERIAL DAMAGE DURING HIGH-RATIO DIFFERENTIAL SPEED ROLLING OF ALUMINIUM ALLOY 7075	223
<i>Pesin Alexander, Pustovoytov Denis, Lokotunina Natalya</i>	
ON TWINNING AND ANISOTROPY IN ROLLED MG ALLOY AZ31 UNDER UNIAXIAL TENSION	229
<i>Guo Xiaoqian, Chapuis Adrien, Mao Xianbiao, Liu Qing, Wu Peidong</i>	
TENSION-COMPRESSION ASYMMETRY MODELLING: STRATEGIES FOR ANISOTROPY PARAMETERS IDENTIFICATION.	234
<i>Barros Pedro, Alves José Luís, Oliveira Marta, Menezes Luís Filipe</i>	
FRACTURE PREDICTION WITH A MATERIAL MODEL BASED ON STRESS-RATE DEPENDENCY RELATED WITH NON-ASSOCIATED FLOW RULE	242
<i>Oya Tetsuo, Yanagimoto Jun, Ito Koichi, Uemura Gen, Mori Naomichi</i>	
CREEP AGE FORMING OF AL-CU-LI ALLOY: APPLICATION TO THICK SHEET FORMING OF DOUBLE CURVATURE AIRCRAFT PANEL	247
<i>Younes Wael, Giraud Eliane, Ahmed Zouari, Dal Santo Philippe, van der Veen Sjoerd</i>	
MULTI SCALE MODELS FOR FLEXURE DEFORMATION IN SHEET METAL FORMING	252
<i>Di Pasquale Edmondo</i>	
RESIDUAL STRESSES OF A MAGNESIUM ALLOY (AZ31) WELDED BY THE FRICTION STIR WELDING PROCESSES	259
<i>Kouadri-Henni A., Barrallier L., Badji Riad</i>	
MODELING METADYNAMIC RECRYSTALLIZATION OF A DIE STEEL DURING INGOT BREAKDOWN PROCESS	266
<i>Chadha Kamwal, Shahriari Davood, Jahazi Mohammad</i>	

SIMULATION OF NONLINEAR BENCHMARKS AND SHEET METAL FORMING PROCESSES USING LINEAR AND QUADRATIC SOLID-SHELL ELEMENTS COMBINED WITH ADVANCED ANISOTROPIC BEHAVIOR MODELS	271
<i>Wang Peng, Chalal Hocine, Abed-Meraim Farid</i>	
AUTOMATIC CORRECTION OF THE TIME STEP IN IMPLICIT SIMULATIONS OF THERMOMECHANICAL PROBLEMS	279
<i>Martins J.M.P., Neto D.M., Alves J.L., Oliveira M.C., Menezes L.F.</i>	
INTERACTION OF VARIOUS FUNCTIONAL ELEMENTS IN THIN-WALLED CUPS FORMED BY A SHEET-BULK METAL FORMING PROCESS	287
<i>Schulte Robert, Schneider Thomas, Lechner Michael, Merklein Marion</i>	
A NEW SHELL ELEMENT TAKING THICKNESS-STRETCHABILITY INTO ACCOUNT FOR MECHANICS-BASED SPRINGBACK COMPENSATION SYSTEM	295
<i>Arashiyama Hibiki, Oya Tetsuo, Ito Koichi</i>	
AN ELEMENT FREE GALERKIN METHOD FOR AN ELASTOPLASTIC COUPLED TO DAMAGE ANALYSIS	300
<i>Sendi Zohra, Belhadjsalah Hédi, Labergere Carl, Saanouni Khémis</i>	
FINITE ELEMENT MODELING OF DEPOSITION OF CERAMIC MATERIAL DURING SLM ADDITIVE MANUFACTURING	307
<i>Chen Qiang, Guillemot Gildas, Gandin Charles-André, Bellet Michel</i>	
APPLICATION TO THE ADDITIVE FABRICATION OF OBJECT ORIENTED METHODOLOGY	316
<i>Couturier Jean-François, Schneider Alexandre</i>	
CROSS DIES FORGING: A NEW METHOD TO REDUCE FORGING FORCE & PRICE UP TO 80% THANKS TO FEM METHOD	322
<i>Mansouri Hamid, Mohajerani Ahmad Nasri</i>	
RESEARCH ON OPTIMIZATION DESIGN OF CONFORMAL COOLING CHANNELS IN HOT STAMPING TOOL BASED ON RESPONSE SURFACE METHODOLOGY AND MULTI-OBJECTIVE OPTIMIZATION	329
<i>He Bin, Si Yanglei, Ying Liang, Hu Ping</i>	
SEMI-ANALYTIC PARAMETER IDENTIFICATION FOR COMPLEX YIELD FUNCTIONS	336
<i>Küsters Niklas, Brosius Alexander</i>	
CONSTRAINED DESIGN OF SHEET FORMING PROCESSES	344
<i>Loukaides Evripides G., Allwood Julian M.</i>	
MULTI-OBJECTIVE OPTIMIZATION UNDER UNCERTAINTY FOR SHEET METAL FORMING	352
<i>Lafon Pascal, Adragna Pierre Antoine, Nguyen Von Dim</i>	
SENSITIVITY ANALYSIS OF THE EXPANSION PROCESS FOR ALLOY UNS N08028	357
<i>Navarro Aitor, Lechner Mario, Ruiz Unai, Lopez Alejandra</i>	
FAST VARIABLE STIFFNESS COMPOSITE CYLINDER UNCERTAINTY ANALYSIS BY USING REANALYSIS ASSISTED COPULA FUNCTION	363
<i>Yang Zeng, Li Enying, Wang Hu</i>	
NUMERICAL INVESTIGATION OF MANUFACTURING HOLLOW PREFORMS BY COMBINING THE PROCESSES BACKWARD CUP EXTRUSION AND PIERCING	368
<i>Henry Robinson, Liewald Mathias</i>	
MULTI-CRITERIA OPTIMIZATION STRATEGIES FOR PRODUCTION CHAINS	374
<i>Kusiak Jan, Morkisz Pawel, Oprocha Piotr, Pietrucha Wojciech, Sztangret Lukasz</i>	
RAPID TOOLS COMPENSATION IN SHEET METAL STAMPING PROCESS	380
<i>Iorio Lorenzo, Strano Matteo, Monno Michele</i>	
A NEW OPTIMIZATION PROCEDURE FOR THE ACCURATE CHARACTERIZATION OF THERMAL PHASE TRANSFORMATION CURVES BASED ON CONTROLLED QUENCHING EXPERIMENTS	388
<i>Peterli Maurice, Truong Minh-Trung, Manopulo Niko, Hora Pavel</i>	
OPTIMIZATION OF THE SINGLE POINT INCREMENTAL FORMING PROCESS FOR TITANIUM SHEETS BY USING RESPONSE SURFACE	394
<i>Saidi Badreddine, Giraud-Moreau Laurence, Cherouat Abel</i>	
IDENTIFICATION OF MATERIAL PARAMETERS USING INDENTATION TEST —STUDY OF THE INTRINSIC DIMENSIONALITY OF P-H CURVES AND RESIDUAL IMPRINTS	399
<i>Meng Liang, Breikopf Piotr, Le Quilliec Guenael</i>	
ELASTIC-PLASTIC TRANSITION: A UNIVERSAL LAW	404
<i>Chen Zhong, Bong Hyuk Jong, Li Dayong, Wagoner R.H.</i>	
PRINCIPLES OF POLYMER PROCESSING MODELLING	412
<i>Agassant Jean-François, Mackley Malcolm. R.</i>	

SIGNIFICANCE OF THE LOCAL SHEET CURVATURE IN THE PREDICTION OF SHEET METAL FORMING LIMITS BY NECKING INSTABILITIES AND CRACKS.....	419
<i>Hora Pavel, Tong Longchang, Gorji Maysam, Manopulo Niko, Berisha Bekim</i>	
SUPPORT TOOL FOR ANCHORING SYSTEM OPTIMIZATION OF TITANIUM CRANIOFACIAL PROSTHESES.....	427
<i>Ciancio Claudio, Caruso Maria Vittoria, Fragomeni Gionata, Ambrogio Giuseppina</i>	
DYNAMIC DOE FOR PORTHOLE DIE EXTRUSION OPTIMISATION.....	433
<i>Ciancio Claudio, Gagliardi Francesco, Ambrogio Giuseppina, Filice Luigi</i>	
COMPUTER SYSTEM FOR IDENTIFICATION OF TOOL WEAR MODEL IN HOT FORGING.....	439
<i>Wilkus Marek, Rauch Lukasz, Gronostajski Zbigniew, Polak Slawomir, Pietrzyk Maciej</i>	
CASE STUDY ON THE INFLUENCE OF KINEMATIC HARDENING WITHIN A PARAMETER-FREE AND NON-INVASIVE FORM FINDING APPROACH.....	445
<i>Landkammer Philipp, Steinmann Paul</i>	
SIMULATION OF FRICTION STIR PROCESSING IN 304L STAINLESS STEEL.....	451
<i>Miles M.P., Nelson T.W., Liu F.C., Gunter C., Fourment L.</i>	
NUMERICAL SIMULATION OF TEMPERATURE DISTRIBUTION AND MATERIAL FLOW DURING FRICTION STIR WELDING 2017A ALUMINUM ALLOYS.....	456
<i>Mimouni Oussama, Badji Riad, Hadji Mohamed, Kouadr-Davidi Afia, Rachid Hamel, Chekroun Nabil</i>	
SENSITIVITY ANALYSIS OF SIZE EFFECT ON THE PERFORMANCE OF HYDROSTATIC BEARING.....	464
<i>Dongju Chen, Lihua Dong, Shuai Zhou, Jinwei Fan</i>	
FEM ANALYSIS OF THE MULTI-WEDGE HELICAL ROLLING PROCESS FOR A WORKHOLDING BOLT.....	471
<i>Pater Zbigniew</i>	
THEORETICAL STUDY ON COLD OPEN DIE FORGING PROCESS OPTIMIZATION FOR MULTIPASS WORKABILITY.....	477
<i>Gaikwad Ajitkumar, Kirwai Shreyas, Koley Provat, Balachandran G. Dr., Singh Rajkumar Dr.</i>	
THE PROCESS PARAMETERS EFFECT OF OVALITY IN CROSS WEDGE ROLLING FOR HOLLOW VALVE WITHOUT MANDRIL.....	483
<i>Ji Hongchao, Liu Jinping, Wang Baoyu, Lin Jianguo, Tang Xuefeng</i>	
NUMERICAL ANALYSIS OF BEVEL GEAR FORMING.....	489
<i>Bartnicki Jaroslaw</i>	
NUMERICAL INVESTIGATIONS OF MULTICOMPONENT PROCESS LIGHTWEIGHT DESIGN FOR JOINING GEARWHEELS BY LATERAL EXTRUSION.....	495
<i>Meissner Robert, Liewald Mathias</i>	
INTERPOLATION OF FINAL GEOMETRY AND RESULT FIELDS IN PROCESS PARAMETER SPACE.....	503
<i>Misiun Grzegorz, Wang Chao, Geijselaers Hubert, van den Boogaard Ton</i>	
IMPLEMENTING DIGITAL IMAGE CORRELATION FOR DETERMINING THE TENSILE CHARACTERISTICS OF POST-PROCESSED THIN SHEET METAL.....	511
<i>Evans Andrew D., Das Amit, Croft Nick</i>	
APPLICATION OF MULTIVARIATE ADAPTIVE REGRESSION SPLINES TO SHEET METAL BENDING PROCESS FOR SPRINGBACK COMPENSATION.....	518
<i>Dilan Rasim Askin, Balkan Tuna, Platin Bülent E.</i>	
FINITE ELEMENT ANALYSIS OF NON-ISOTHERMAL WARM DEEP DRAWING OF DUAL PHASE STEEL.....	526
<i>Pepelnjak T., Kaftanoglu B.</i>	
METHOD FOR DEEP DRAWING PROCESS CONTROL USING SEGMENTED-MULTIPLE ACTIVE DRAWBEADS.....	534
<i>Maier Catalina, Paunoiu Viorel, Marinescu Vasile, Epureanu Alexandru</i>	
INFLUENCE OF SURFACE-PROFILE AND MOVEMENT-PATH OF ROLLER ON THICKNESS THINNING DURING MULTI-PASS DEEP DRAWING SPINNING.....	539
<i>Xia Qinxiang, Zhang Junhao, Huang Chenglong, Cheng Xiuquan</i>	
FINITE ELEMENT ANALYSIS OF HOT SINGLE POINT INCREMENTAL FORMING OF HIP PROSTHESES.....	545
<i>Sbayti Manel, Ghiotti Andrea, Bahloul Riadh, Belhadjsalah Hedi, Bruschi Stefania</i>	
THINNING BEHAVIOR OF LAMINATED SHEETS METAL IN WARM DEEP-DRAWING PROCESS UNDER VARIOUS GRAIN SIZES.....	552
<i>Kadkhodayan Mehran, Afshin Ehsan</i>	

SUITABILITY OF THE ELECTROMAGNETIC RING EXPANSION TEST TO CHARACTERIZE MATERIALS UNDER HIGH STRAIN RATE DEFORMATION	560
<i>Yang Kang, Taber Geoffrey, Sapanathan Thaneshan, Vivek Anupam, Daehn Glenn S, Raelison Rija Nirina, Buiron Nicolas, Rachik Mohamed</i>	
MATERIAL FLOW ANALYSIS IN DISSIMILAR FRICTION STIR WELDING OF AA2024 AND TI6AL4V BUTT JOINTS	567
<i>Buffa Gianluca, De Lisi Michele, Barcellona Antonio, Fratini Livan</i>	
FINITE ELEMENT MODELING OF TUBE DEFORMATION DURING COLD PILGERING.....	574
<i>Azizoglu Yagiz, Gärdback Mattias, Sjöberg Bengt, Lindgren Lars-Erik</i>	
FORMABILITY EFFECTS OF VARIABLE BLANK HOLDER FORCE ON DEEP DRAWING OF STAINLESS STEEL	582
<i>Koowattanasuchat Pramote, Mahayotsanun Numpon, Ngernbamrung Sukunthakan, Mahabunphachai Sasawat</i>	
FEM ANALYSIS OF PUNCHING-PROCESS IN CONSIDERATION OF MICRO DIE WEAR.....	588
<i>Ueda Takashi, Izuka Takashi, Enoki Shinichi</i>	
BIOMEDICAL TITANIUM ALLOY PROSTHESES MANUFACTURING BY MEANS OF SUPERPLASTIC AND INCREMENTAL FORMING PROCESSES	593
<i>Piccininni Antonio, Gagliardi Francesco, Guglielmi Pasquale, De Napoli Luigi, Ambrogio Giuseppina, Sorgente Donato, Palumbo Gianfranco</i>	
FINITE ELEMENT MODELLING OF COMBINED PROCESS OF PLATE ROLLING AND STAMPING.....	601
<i>Pesin Alexander, Drigunt Ernst, Pustovoytov Denis, Pesin Ilya</i>	
THE ROLE OF EVOLUTIVE ELASTIC PROPERTIES IN THE PERFORMANCE OF A SHEET FORMED SPRING APPLIED IN MULTIMEDIA CAR INDUSTRY	608
<i>Silva Joel, Faria João, Ferreira Rita, Bernardo Pedro, Alves J. L</i>	
SOLUTIONS FOR SAFE HOT COIL EVACUATION AND COIL HANDLING IN CASE OF THICK AND HIGH STRENGTH STEEL.....	615
<i>Sieberer Stefan, Pichler Lukas, Hackl Manfred</i>	
INVESTIGATION OF A COMPOSITE RING ROLLING PROCESS BY FEM AND EXPERIMENT.....	622
<i>Seitz Joachim, Schwich Gideon, Guenther Stefan, Hirt Gerhard</i>	
A NUMERICAL STUDY OF MULTI-PASS DESIGN BASED ON BEZIER CURVE IN CONVENTIONAL SPINNING OF SPHERICAL COMPONENTS	629
<i>Gan Tian, Kong Qingshuai, Yu Zhongqi, Zhao Yixi, Lai Xinmin</i>	
ADVANCED CONSTITUTIVE MODELING AND APPLICATION TO INDUSTRIAL FORMING PROCESSES	636
<i>Barlat Frédéric, Kim Dong-Jin</i>	
FINITE ELEMENT SIMULATION OF STRETCH FORMING OF ALUMINIUM-POLYMER LAMINATE FOILS USED FOR PHARMACEUTICAL PACKAGING	643
<i>Müller Simon, Weygand Sabine M.</i>	
NUMERICAL INVESTIGATION OF BLANKING FOR METAL POLYMER SANDWICH SHEETS	650
<i>Gutknecht Florian, Übelacker David, Clausmeyer Till, Erman Tekkaya A.</i>	
NUMERICAL INVESTIGATIONS FOR SIMULTANEOUSLY PROCESSING METAL AND PLASTIC USING IMPACT EXTRUSION.....	657
<i>Wälder Jonas, Wellekötter Jochen, Felde Alexander, Liewald Mathias, Bonten Christian</i>	
EFFECT OF NORMAL STRESSES ON THE RESULTS OF THERMOPLASTIC MOLD FILLING SIMULATION.....	663
<i>Bakharev Alexander, Astbury David, Ray Shishir, Costa Franco S., Speight Russell</i>	
PREDICTION OF ACOUSTIC FOAM PROPERTIES BY NUMERICAL SIMULATION OF POLYURETHANE FOAMING PROCESS.....	668
<i>Abdessalam Hichem, Abbès Boussad, Li Yuming, Guo Ying-Qiao, Kwassi Elvis, Romain Jean-Luc</i>	
DEVELOPMENT AND IDENTIFICATION OF RHEOLOGICAL MODEL ADAPTED FOR POWDER INJECTION MOULDING.....	673
<i>Claudé Dimitri, Sahli Mohamed, Barriere Thierry, Gelin Jean-Claude</i>	
DETERMINATION OF THE ACTIVATION ENERGY OF SILICONE RUBBERS USING DIFFERENT KINETIC ANALYSIS METHODS	677
<i>Ou Huibin, Sahli Mohamed, Barriere Thierry, Gelin Jean-Claude</i>	
MECHANICAL BEHAVIOR OF FIBER/MATRIX INTERFACES IN CFRP SHEETS SUBJECTED TO PLASTIC DEFORMATION.....	682
<i>Kamiya Ryuta, Oya Tetsuo</i>	
HOMOGENIZATION ON MULTI-MATERIALS' ELEMENTS: APPLICATION TO PRINTED CIRCUIT BOARDS AND WARPAGE ANALYSIS	688
<i>Araújo Manuel, Alves J. L., Silva Paulo, Delgado Pedro</i>	

INTEGRATED THERMOMECHANICAL MODEL FOR FORMING OF GLASS CONTAINERS	696
<i>Martins Bruno, Reis Ana, Teixeira Pedro, Machado Margarida, Rodrigues Jaime, Cesar de Sá J.</i>	
Author Index	