

# **SPE ANTEC 2018**

Orlando, Florida, USA  
7-10 May 2018

Volume 1 of 4

ISBN: 978-1-7138-0197-9

**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.**

Copyright© (2018) by the Society of Plastics Engineers  
All rights reserved.

Printed with permission by Curran Associates, Inc. (2020)

For permission requests, please contact the Society of Plastics Engineers  
at the address below.

Society of Plastics Engineers  
100 Reserve Road, Suite B-310  
Danbury, CT 06810 USA

Phone: (203) 740-5400

Fax: (203) 740-5405

[info@4spe.org](mailto:info@4spe.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: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## VOLUME 1

<b>M01-064 : MODIFICATION OF PLA FOR IMPROVED LAYER-TO-LAYER ADHESION IN 3-D PRINTED PARTS</b> .....	1
<i>Michael Thompson</i>	
<b>M01-116 : INFLUENCE OF THE LAYER TIME ON THE RESULTING PART PROPERTIES IN THE FUSED DEPOSITION MODELING PROCESS</b> .....	5
<i>Frederick Knoop</i>	
<b>M01-171 : EFFECTS OF POLYMER RHEOLOGY ON PREDICTED DIE SWELL AND FIBER ORIENTATION IN LARGE SCALE POLYMER COMPOSITE ADDITIVE MANUFACTURING</b> .....	12
<i>Zhaogui Wang</i>	
<b>M01-240 : 3D PRINTED CAPSULES FOR ON-SITE FORMULATIONS</b> .....	17
<i>Derrick Smith</i>	
<b>M01-287 : MECHANICAL PROPERTIES OF REINFORCED COMPOUNDS FOR LARGE FORMAT ADDITIVE MANUFACTURING (LFAM)</b> .....	24
<i>Rabeh Elleithy</i>	
<b>M01-549 : THE INFLUENCE OF MELT FLOW RATE AND NOZZLE TEMPERATURE IN FUSED FILAMENT FABRICATION</b> .....	36
<i>Nicole Hoekstra</i>	
<b>M01-572 : MECHANICAL PROPERTIES OF 3D PRINTED POLYLACTIDE/MICROFIBRILLATED POLYAMIDE COMPOSITES</b> .....	41
<i>Nahal Aliheidari</i>	
<b>M02-033 : POLYCAPROLACTONE NANOFIBERS CONTAINING VASCULAR ENDOTHELIAL GROWTH FACTOR-ENCAPSULATED GELATIN PARTICLES ENHANCE MESENCHYMAL STEM CELL DIFFERENTIATION TO ENDOTHELIAL CELLS AND ANGIOGENESIS OF ENDOTHELIAL CELLS</b> .....	46
<i>Yong-Chao Jiang</i>	
<b>M02-122 : TRANSAMIDATION OF CORN OIL SIDE-STEAM PRODUCT FROM BIOETHANOL INDUSTRY AS STRATEGY TO DEVELOP SUSTAINABLE POLYESTERAMIDES</b> .....	51
<i>Manjusri Misra</i>	
<b>M02-294 : FULLY BIOBASED DEGRADABLE PLASTIC WITH INSECTICIDE FUNCTIONALITY</b> .....	55
<i>Cindu Annand</i>	
<b>M02-361 : EFFECT OF SHISH MATERIAL ON THE FORMATION OF SELF INDUCED SHISH-KEBAB STRUCTURE</b> .....	61
<i>Xiaofeng Wang</i>	
<b>M02-524 : ON THE USE OF HIGH-THROUGHPUT ELECTROSPINNING TO PRODUCE OPTIMIZED PACKAGING FILMS FROM POLYHYDROXYALKANOATES</b> .....	66
<i>Sergio Torres-Giner</i>	
<b>M02-539 : NANOCELLULOSE AS A SIZING AGENT FOR GLASS FIBER TOWARDS AN ENHANCED GLASS FIBER – EPOXY INTERPHASE</b> .....	70
<i>Joyanta Goswami</i>	
<b>M03-170 : MELT-MASTICATION OF ISOTACTIC POLYPROPYLENE FOR IMPROVED THERMAL AND PHYSICAL PROPERTIES</b> .....	76
<i>Brian Cromer</i>	
<b>M03-218 : ANALYSIS OF NEWLY-DEVELOPED TEXTURED PTFE GASKETS SUBJECTED TO CREEP RELAXATION</b> .....	82
<i>Ali Gordon</i>	
<b>M03-313 : COMPOSITION DEPENDENT CHARGE STORAGE AND EMI SHIELDING PERFORMANCE OF THERMOPLASTIC ELASTOMER NANOCOMPOSITES CONTAINING MWNTS</b> .....	88
<i>Uttandaraman Sundararaj</i>	
<b>M03-412 : INNOVATION IN MATURE MARKETS: UNDERSTANDING GLOBAL TRENDS ACROSS THE VALUE CHAIN KEY AND ACCELERATING DEVELOPMENT</b> .....	93
<i>Narayan Ramesh</i>	
<b>M03-453 : WAYS TO ENHANCE THERMOELECTRIC PROPERTIES OF MELT MIXED POLYPROPYLENE-CARBON NANOTUBE COMPOSITES</b> .....	94
<i>Petra Pötschke</i>	

<b>M03-618 : TECHNIQUES TO MEASURE IMPACT PROPERTIES OF POLYMERS</b> .....	100
<i>Stuart Brown</i>	
<b>M04-271 : FLOW, MIXING AND REACTION FOR POLYMER REACTIVE BLENDING IN A TWIN SCREW EXTRUDER</b> .....	104
<i>Cai-Liang Zhang</i>	
<b>M04-325 : NEW INVOLUTE EXTRUDER SCREW ELEMENTS FOR IMPROVED PRODUCTIVITY AND QUALITY</b> .....	109
<i>Paul Andersen</i>	
<b>M04-348 : EXPERIMENTAL VALIDATION OF FILL RATIO, RESIN PRESSURE, RESIN TEMPERATURE OBTAINED FROM THE 2.5D HELE-SHAW MODEL IN FLOW OF COROTATING TWIN SCREW EXTRUDER</b> .....	114
<i>Masatoshi Ohara</i>	
<b>M04-493 : DESIGNING AND COMPUTATIONAL VALIDATION OF EXTENSIONAL MIXING ELEMENTS (EMES) FOR IMPROVED DISPERSIVE MIXING IN EXTRUSION OPERATIONS</b> .....	121
<i>Vivek Pandey</i>	
<b>M04-497 : EFFECT OF HIGH SPEED TWIN AND QUAD SCREW COMPOUNDING ON THE MOLECULAR WEIGHT, MOLECULAR WEIGHT DISTRIBUTION, AND MECHANICAL PROPERTIES OF POLYETHYLENE COMPOSITES</b> .....	126
<i>Carol Barry</i>	
<b>M04-588 : CHARACTERIZATION OF STRESS IN A TWIN-SCREW EXTRUDER FOR PROCESSING AND EXTRUSION OF EXTRINSICALLY SELF-HEALING THERMOPLASTICS</b> .....	133
<i>Connor Armstrong</i>	
<b>M04-643 : IMPROVED NANOCCLAY DISPERSION IN ETHYLENE VINYL ALCOHOL VIA SUB-CRITICAL GAS-ASSISTED PROCESSING</b> .....	138
<i>Thomas Ellingham</i>	
<b>M05-076 : HIGH PERFORMANCE FILLERS - WIDE RANGE OF IMPROVEMENT WITH SMALL PARTICLES!</b> .....	143
<i>Peter Sebo</i>	
<b>M05-086 : 3M™ GLASS BUBBLES - NEW PRODUCTS FOR PLASTIC COMPOSITES</b> .....	163
<i>Steve Amos</i>	
<b>M05-153 : DEVELOPMENT OF MOLECULAR DIFFUSION MODELS FOR ULTRASONIC WELDING OF PLA</b> .....	176
<i>Karla Lebron</i>	
<b>M05-191 : RESEARCH ON TEMPERATURE FIELD OF LASER TRANSMISSION WELDING POLYCARBONATE BASED ON 3D REAL SURFACE TOPOGRAPHY</b> .....	188
<i>Zhong Hongqiang</i>	
<b>M05-192 : TEMPERATURE FIELD AND FLUID FIELD SIMULATION OF LASER TRANSMISSION WELDING POLYCARBONATE</b> .....	192
<i>Yan Tingpei</i>	
<b>M05-480 : CORRELATING ULTRASONIC WELD QUALITY WITH MELT LAYER THICKNESS</b> .....	198
<i>Alex Savitski</i>	
<b>M05-483 : EFFECTS OF BUILD ORIENTATION AND FILL-LEVEL ON MECHANICAL PROPERTIES OF FUSED DEPOSITION MODELING PLA</b> .....	205
<i>Avraham Benatar</i>	
<b>M05-563 : METHODS OF POLYMER WELD QUALITY EVALUATION</b> .....	210
<i>Miranda Marcus</i>	
<b>M05-715 : UNDERSTANDING MELTDOWN DURING QUASI-SIMULTANEOUS LASER TRANSMISSION WELDING</b> .....	217
<i>Philip Bates</i>	
<b>M06-211 : EFFECTS OF PRIMER ON MECHANICAL BEHAVIOR OF CPVC PIPE</b> .....	220
<i>Bingjun Chen</i>	
<b>M06-268 : INNOVATIVE MILLIMETER WAVES TECHNOLOGY FOR MEASURING DIAMETER, OVALITY, WALL THICKNESS AND SAGGING OF LARGE PLASTIC PIPES</b> .....	226
<i>Harry Prunk</i>	
<b>M06-362 : PIPE QUICK BURST PRESSURE INVESTIGATIONS OF SAMPLE LENGTH ON TWO PLASTICS</b> .....	229
<i>Bryan Hauger</i>	
<b>M06-363 : FRACTURE MECHANIC PRINCIPLES FOR MULTI-LAYER PIPE-WALL DESIGN</b> .....	239
<i>Florian Arbeiter</i>	
<b>M06-388 : PERFORMANCE OF PE PIPE RESINS IN CHLORINE DIOXIDE CONTAINING AQUEOUS SOLUTION</b> .....	243
<i>Márton Bredács</i>	

<b>M06-415 : ASSESSMENT OF POLYBUTYLENE PLUMBING INSTALLATIONS AFTER LONG-TERM SERVICE .....</b>	<b>249</b>
<i>Dale Edwards</i>	
<b>M06-422 : QUANTIFYING OXIDATIVE DEGRADATION IN POLYOLEFIN PIPE BY IR SPECTROSCOPY .....</b>	<b>254</b>
<i>Don Duvall</i>	
<b>M07-062 : VALVE GATE OPEN LAG TIME IN CONVENTIONAL HOT RUNNER SYSTEM.....</b>	<b>264</b>
<i>Jinsu Gim</i>	
<b>M07-249 : INJECTION MOLDING SETUP BY MEANS OF MACHINE LEARNING BASED ON SIMULATION AND EXPERIMENTAL DATA .....</b>	<b>269</b>
<i>Christian Hopmann</i>	
<b>M07-256 : ADDITIVE MANUFACTURING OF LARGE, TEMPERATURE-CONTROLLED INJECTION MOLDING TOOLS USING ARC WELDING AND DIFFUSION BONDING .....</b>	<b>275</b>
<i>Johannes Ullrich</i>	
<b>M07-286 : CHARACTERIZATION OF FILLING PERFORMANCES AND MECHANICAL PROPERTIES OF MICRO MOLDED FEATURES .....</b>	<b>282</b>
<i>Jiang Jing</i>	
<b>M07-374 : CONTROLLING THE LOCAL PART PROPERTIES USING A SEGMENTED TEMPERATURE CONTROL IN INJECTION MOLDING .....</b>	<b>287</b>
<i>Mauritius Schmitz</i>	
<b>M07-384 : STUDY ON AN OPTICAL EVALUATION OF SURFACE ADHESION IN THE MULTILAYER INJECTION MOLDING PROCESS .....</b>	<b>292</b>
<i>Byungohk Rhee</i>	
<b>M07-654 : MODELING OF THE ULTRASOUND-ASSISTED EJECTION IN MICRO INJECTION MOLDING .....</b>	<b>297</b>
<i>Giovanni Lucchetta</i>	
<b>M08-360 : NEW INSIGHTS FROM TAILORED DISPERSION OF MULTI-WALLED CARBON NANOTUBES THROUGH THE OPTIMIZATION OF MELT MIXING PARAMETERS DURING PRODUCTION OF POLYPROPYLENE-BASED NANOCOMPOSITES.....</b>	<b>302</b>
<i>Valérie Lison</i>	
<b>M08-376 : ACRYLONITRILE BUTADIENE STYRENE (ABS)/MICA COMPOSITES: PREPARATION AND CHARACTERIZATION.....</b>	<b>310</b>
<i>Mohammed Alghamdi</i>	
<b>M08-445 : STATISTICAL OPTIMIZATION OF ADDITIVES FOR GLASS FILLED POLYPROPYLENE STABILIZATION .....</b>	<b>315</b>
<i>Syed Hassan</i>	
<b>M08-515 : A NEW CARBON BLACK FOR HIGH JETNESS AND EASY DISPERSION.....</b>	<b>322</b>
<i>Marc Delvaux</i>	
<b>M08-655 : MECHANICAL REINFORCEMENT WITH CELLULOSE FILAMENTS.....</b>	<b>333</b>
<i>Helen Lentzakis</i>	
<b>M09-146 : FACING COMPOUNDING CHALLENGES OF THE FUTURE WITH THE RINGEXTRUDER RE<sup>®</sup> - FACING COMPOUNDING CHALLENGES OF THE FUTURE.....</b>	<b>339</b>
<i>Michael Erdmann</i>	
<b>M09-174 : DEVELOPMENT OF ELONGATIONAL MIXING GEOMETRIES FOR TWIN-SCREW COMPOUNDING EXTRUDERS .....</b>	<b>351</b>
<i>Adam Dreiblatt</i>	
<b>M09-442 : S-MAX SERIES SCREENLESS GRANULATOR TECHNOLOGY.....</b>	<b>367</b>
<i>Bridgette McGann</i>	
<b>M09-477 : ENERGY EFFICIENT DRYING WITH AUTOMATIC VFD &amp; FLOW CONTROL FOR YOUR MOLDING PROCESS .....</b>	<b>374</b>
<i>Nicholas Paradiso</i>	
<b>M09-542 : ADVANCED EXTRUSION CONTROL.....</b>	<b>382</b>
<i>Ben Freckmann</i>	
<b>M09-607 : TWW MICRO (TM) EXTRUDER FOR 3D PRINTING .....</b>	<b>388</b>
<i>Timothy Womer</i>	
<b>M09-648 : NEW EXTRUDER DESIGN AND FEATURES .....</b>	<b>403</b>
<i>Bill Kramer</i>	
<b>M09-718 : COPERION PELLETIZING TECHNOLOGY UPDATE - WHAT'S NEW AND WHY? .....</b>	<b>416</b>
<i>Mike Bickley</i>	
<b>M10-087 : 3D PRINTING FEEDSTOCK FROM RECYCLED MATERIALS.....</b>	<b>433</b>
<i>Nicole Zander</i>	

<b>M10-115 : ASSESSING THE PERFORMANCE OF CONTINUOUSLY REINFORCED ACRYLONITRILE BUTADIENE STYRENE WITH A THERMOTROPIC LIQUID CRYSTALLINE POLYMER IN FUSED FILAMENT FABRICATION.....</b>	<b>439</b>
<i>Mubashir Ansari</i>	
<b>M10-185 : HIGH IMPACT STRENGTH POLYCARBONATE FILAMENT FOR ADDITIVE MANUFACTURING.....</b>	<b>444</b>
<i>Sarah Grieshaber</i>	
<b>M10-193 : BONDING STRENGTH IN ADDITIVELY MANUFACTURED MULTI-MATERIAL PLASTICS PARTS.....</b>	<b>454</b>
<i>Jakob Onken</i>	
<b>M10-391 : PROCESSING CONSIDERATIONS: CELLULOSE NANOCRYSTAL THERMOPLASTIC URETHANE FILAMENT PRODUCTION.....</b>	<b>460</b>
<i>Jacob Fallon</i>	
<b>M10-392 : STRUCTURE AND PROPERTY RELATIONSHIPS OF ADDITIVELY MANUFACTURED POLYPHENYLENE SULFIDE WITH CARBON FIBER REINFORCEMENT.....</b>	<b>465</b>
<i>Peng Liu</i>	
<b>M10-459 : RHEOLOGICAL CHARACTERIZATION AND QUALITY ASSESSMENT OF COMMERCIAL ABS FILAMENTS FOR FUSED DEPOSITION MODELING.....</b>	<b>469</b>
<i>Cybele Lotti</i>	
<b>M10-499 : STRENGTH ANALYSIS OF FUSED FILAMENT FABRICATED CONTINUOUS CARBON FIBER COMPOSITE TEST SAMPLES.....</b>	<b>474</b>
<i>Rogelio Herrera</i>	
<b>M10-579 : IMPROVING THE ELECTRICAL CONDUCTIVITY OF PC/ABS PRINTING FILAMENT FOR FUSED FILAMENT FABRICATION USING CARBON NANOSTRUCTURES.....</b>	<b>482</b>
<i>Nicole Hoekstra</i>	
<b>M10-604 : CRYSTALLIZATION KINETICS DURING MATERIALS EXTRUSION BASED ADDITIVE MANUFACTURING OF POLYCAPROLACTONE.....</b>	<b>487</b>
<i>Kalman Migler</i>	
<b>M11-022 : RELATIONSHIP OF DIFFERENT GRADES OF TITANIUM DIOXIDE WITH THE DECAY OF POLYPROPYLENE GLOSS UNDER ACCELERATED EXPOSURE CONDITIONS.....</b>	<b>491</b>
<i>Philipp Niedenzu</i>	
<b>M11-215 : OPTIMIZING COLOR: A PIGMENT- AND SURFACE-CHEMISTRY PERSPECTIVE.....</b>	<b>499</b>
<i>Christopher Beier</i>	
<b>M11-260 : EXTENDING THE BOUNDARIES: BISMUTH-BASED PIGMENTS FOR THE PLASTICS INDUSTRY.....</b>	<b>503</b>
<i>Cristina Zanzottera</i>	
<b>M11-486 : VOC REDUCING ADDITIVES FOR MASTERBATCHES AND FINAL POLYMER ARTICLES.....</b>	<b>509</b>
<i>Rob Lorenzini</i>	
<b>M11-595 : KEYNOTE - GLOBAL AUTOMOTIVE COLOR TREND, POPULARITY AND WHO'S DRIVING.....</b>	<b>513</b>
<i>Ann Smeltzer</i>	
<b>M11-626 : UNDERSTANDING WARPAGE IN INJECTION-MOLDED THERMOPLASTICS; CAUSES AND THE LATEST PIGMENTARY SOLUTIONS.....</b>	<b>514</b>
<i>Brian Coleman</i>	
<b>M12-141 : REDUCED DENSITY POLYAMIDE 66 COMPOUNDS FOR EXTRUSION APPLICATIONS.....</b>	<b>525</b>
<i>Ying Shi</i>	
<b>M12-168 : EFFECT OF RESIN SELECTION ON PORE FORMATION OF POLYETHYLENE FILMS.....</b>	<b>530</b>
<i>Wenyi Huang</i>	
<b>M12-267 : CLEAR IMPACT CO-POLYMERS FOR THERMOFORMING.....</b>	<b>538</b>
<i>Kevin Herrington</i>	
<b>M12-308 : ACTIVE PACKAGING FILM TO EXTEND SHELF-LIFE OF FRESH POULTRY.....</b>	<b>547</b>
<i>Ankush Gokhale</i>	
<b>M12-359 : VISCOSITY AND DISPERSION ENHANCEMENTS IN POLYETHYLENE TEREPHTHALATE COMPOUNDING.....</b>	<b>558</b>
<i>Prakash Hadimani</i>	
<b>M12-488 : SELF-STERILIZING PACKAGING FOR MEDICAL DEVICES.....</b>	<b>563</b>
<i>Rishabh Jain</i>	

<b>M12-508 : THE RELATIONSHIP BETWEEN STRUCTURE AND THERMAL AND MECHANICAL PROPERTIES OF THERMOPLASTIC POLYESTER MATERIALS</b> .....	572
<i>Jeffrey Jansen</i>	
<b>M12-519 : IMPACT OF PLASTICS PACKAGING ON LIFE CYCLE IMPACTS IN THE U. S. AND CANADA SUBSTITUTION ANALYSIS</b> .....	579
<i>Emily Tipaldo</i>	
<b>M12-578 : EFFECT OF ANNEALING ON THE VISCOELASTIC BEHAVIOR OF POLY(ETHER-ETHER-KETONE)</b> .....	597
<i>Zhiyuan Jiang</i>	
<b>M12-693 : MODELING FILM BEHAVIOR IN PALLET UNITIZATION APPLICATIONS</b> .....	601
<i>Pavan Valavala</i>	
<b>M13-276 : TRANSITION METAL DICHALCOGENIDE THERMOPLASTIC COMPOSITES PREPARED USING LAB SCALE EXTRUSION</b> .....	614
<i>Joshua Orlicki</i>	
<b>M13-295 : 3D NUMERICAL SIMULATION OF MULTIPHASE FLOW IN PARTIALLY FILLED TWIN SCREW EXTRUDERS</b> .....	619
<i>H. M. Metwally</i>	
<b>M13-330 : MECHANICAL PROPERTIES OF ULTRA-HIGH MOLECULAR WEIGHT POLYETHYLENE NASCENT FIBERS AT DIFFERENT SCREW SPEEDS</b> .....	624
<i>Fangke Liu</i>	
<b>M13-398 : ENHANCING THERMAL CONDUCTIVITY OF PVDF/GRAPHENE NANOCOMPOSITES BY WATER-ASSISTED MIXING EXTRUSION</b> .....	628
<i>Han-Xiong Huang</i>	
<b>M13-476 : EFFECTS OF NOVEL EXTENSIONAL MIXING ELEMENTS ON FIBER LENGTH DISTRIBUTION IN COMPOSITE EXTRUSION</b> .....	633
<i>Molin Guo</i>	
<b>M14-238 : MICROINJECTION MODLING OF POLYPROPYLENE/GRAPHITE COMPOSITES</b> .....	639
<i>Shengtai Zhou</i>	
<b>M14-326 : STUDYING OF VISCOELASTICITY ON WARPAGE VALIDATION</b> .....	646
<i>Rujing Jhang</i>	
<b>M14-333 : FOAMING UNIFORMITY CONTROL OF HIGH WEIGHT REDUCTION MICROCELLULAR INJECTION MOLDED THERMOPLASTIC ELASTOMER USING GAS COUNTER PRESSURE</b> .....	652
<i>Chang Che-Wei</i>	
<b>M14-336 : EVALUATING THE THROUGH-PLANE CONDUCTIVITY OF MOLDED PARTS VIA MAGNETIC FIELD IN THE INJECTION MOLDING PROCESS</b> .....	659
<i>Chiu Min-Chi</i>	
<b>M14-341 : MECHANICAL PROPERTIES OF POLYAMIDE 6/ZEOLITE COMPOSITES</b> .....	665
<i>Davoud Jahani</i>	
<b>M14-345 : EFFECT OF STRESS RELAXATION ON SHRINKAGE AND WARPAGE OF INJECTION MOLDED PARTS</b> .....	671
<i>Zhiliang Fan</i>	
<b>M14-367 : EFFECTS OF PROCESSING PARAMETERS ON FIBER LENGTH DISTRIBUTION AND TENSILE STRENGTH OF LONG GLASS FIBER REINFORCED NYLON66 COMPOSITES MOLDED PARTS</b> .....	676
<i>Hsin-Shu Peng</i>	
<b>M14-458 : MECHANICAL AND RHEOLOGICAL CHARACTERISTICS OF PP/PET BLEND WITH MALEIC ANHYDRIDE AND JUTE FIBRE</b> .....	682
<i>Abul Saifullah</i>	
<b>M14-649 : IMPROVED PROCESSABILITY OF ULTRA-HIGH MOLECULAR WEIGHT POLYETHYLENE VIA SUPERCRITICAL NITROGEN AND CARBON DIOXIDE IN INJECTION MOLDING</b> .....	687
<i>Galip Yilmaz</i>	
<b>M17-036 : QUALITY MONITORING OF ROTATIONAL MOLDED PARTS USING A NONDESTRUCTIVE TECHNIQUE</b> .....	693
<i>Felipe Gomes</i>	
<b>M17-324 : ROTATIONAL MOLDING OF HYBRID COMPOSITES BASED ON LINEAR LOW DENSITY POLYETHYLENE/GROUND TIRE RUBBER/MAPLE WOOD FIBERS</b> .....	698
<i>Denis Rodrigue</i>	
<b>M17-344 : MECHANICAL CHARACTERIZATION OF POLYETHYLENE/CARBON NANOFIBER COMPOSITES PREPARED BY ROTATIONAL MOLDING</b> .....	704
<i>Milton Vazquez Lepe</i>	

<b>M17-461 : MORPHOLOGY AND MECHANICAL PROPERTIES OF POLY(LACTIC ACID)/POLYETHYLENE BLENDS PRODUCED BY ROTATIONAL MOLDING .....</b>	<b>709</b>
<i>Eduardo Ruiz Silva</i>	
<b>M17-479 : 3D CHARACTERIZATION AND MECHANICAL ANALYSIS OF POLYETHYLENE FOAMS PROCESSED IN RAPID ROTATIONAL FOAM MOLDING .....</b>	<b>716</b>
<i>Wing Yi Pao</i>	
<b>M17-496 : OPTIMIZATION OF THE ROTATIONAL MOLDING PROCESSING OF AGAVE FIBER / LMDPE COMPOSITE MATERIALS .....</b>	<b>721</b>
<i>Rosa Gabriela López Gonzaleznúñez</i>	
<b>M17-506 : 3-DIMENSIONAL CHARACTERIZATION OF THE QUALITY OF FOAM-TO-SKIN BONDING OF RAPID ROTATIONALLY FOAM MOLDED INTEGRAL-SKIN CELLULAR COMPOSITES.....</b>	<b>726</b>
<i>I. Raktim Utkarsh</i>	
<b>M17-556 : SURFACE TREATMENT OF AGAVE FIBERS AND ITS COMPATIBILIZATION WITH PLA TO PRODUCE ROTATIONAL MOLDED BIOCOMPOSITES .....</b>	<b>731</b>
<i>Jorge Robledo-Ortíz</i>	
<b>M17-681 : NEW SOLUTIONS FOR LIGHT STABILITY OF PE IN ROTOMOLDING - VER. 2 - 9TH JAN 2018.....</b>	<b>736</b>
<i>Enrico Costantini</i>	
<b>M18-046 : ADVANCEMENTS IN FIBER LASER WORKSTATIONS FOR PLASTIC WELDING APPLICATIONS .....</b>	<b>755</b>
<i>Ben Campbell</i>	
<b>M18-147 : TAKING INJECTION MOLD COOLING TO THE NEXT LEVEL .....</b>	<b>765</b>
<i>Kenneth Johnson</i>	
<b>M18-312 : COOLING-FREE VALVE GATING .....</b>	<b>779</b>
<i>Joerg Schmidt</i>	
<b>M18-450 : INTRODUCING STRIDE, A COLLABORATIVE APPROACH TO CONSULTING AND CONTRACT R&amp;D .....</b>	<b>791</b>
<i>Debora Massouda</i>	
<b>M18-469 : NEW OVERMOLDING TPES IN APPLICATIONS WITH UNIQUE REQUIREMENTS.....</b>	<b>800</b>
<i>Kushal Bahl</i>	
<b>M18-505 : MICROPOWER COMBIMOULD - THE NEW STANDARD FOR MAXIMUM FLEXIBILITY .....</b>	<b>810</b>
<i>Brian Heugh</i>	

## VOLUME 2

<b>M18-546 : INNOVATIONS IN PLASTIC WELDING TECHNOLOGIES: HOT GAS WELDING .....</b>	<b>824</b>
<i>Anthony Verdesca</i>	
<b>T01-109 : NEW METHODS OF METAL 3D PRINTING .....</b>	<b>838</b>
<i>Ben Arnold</i>	
<b>T01-527 : HP MULTI JET FUSION FOR MANUFACTURING .....</b>	<b>839</b>
<i>David Tucker</i>	
<b>T01-561 : WARP AND DISTORTION OF FIBER-REINFORCED THERMOPLASTIC PARTS – THE EFFECT OF LAYUP AND PLY ORIENTATIONS ON RESIDUAL STRESS AND DIMENSIONAL ACCURACY OF PARTS MADE BY THE FDM PROCESS .....</b>	<b>840</b>
<i>Vittorio Jaker</i>	
<b>T02-041 : BIODEGRADATION OF BIODEGRADABLE AND COMPOSTABLE PLASTICS UNDER INDUSTRIAL COMPOST, MARINE, AND ANAEROBIC DIGESTION.....</b>	<b>841</b>
<i>Joseph Greene</i>	
<b>T02-126 : STUDY OF BIODEGRADABLE POLYBUTYLENE SUCCINATE/POLY(BUTYLENE ADIPATE-CO-TEREPHTHALATE) BLENDS .....</b>	<b>849</b>
<i>Manjusri Misra</i>	
<b>T02-272 : TUNABLE DEGRADATION OF POLY(BUTYLENE SUCCINATE) BY COPOLYMERIZATION AND CATALYSTS .....</b>	<b>853</b>
<i>Siwen Bi</i>	
<b>T02-299 : LOW TEMPERATURE SOLUTION DEPOLYMERIZATION OF PLA .....</b>	<b>857</b>
<i>John Campanelli</i>	



<b>T02-582 : MECHANICAL BEHAVIOR AND ANAEROBIC BIODEGRADATION OF A POLY(LACTIC ACID) BLEND CONTAINING A POLY(LACTIC ACID)-CO-POLY(GLYCOLIC ACID) COPOLYMER .....</b>	<b>862</b>
<i>Christopher Lewis</i>	
<b>T03-101 : EXPERIMENTAL STUDY ON FIBER MATRIX SEPARATION DURING COMPRESSION MOLDING OF FIBER REINFORCED RIB STRUCTURES .....</b>	<b>867</b>
<i>Christoph Kuhn</i>	
<b>T03-124 : EFFECTS OF DIFFERENT FILLERS ON THE THERMO-MECHANICAL PROPERTIES AND COEFFICIENT OF LINEAR THERMAL EXPANSION OF POLYPROPYLENE COMPOSITES .....</b>	<b>876</b>
<i>Manjusri Misra</i>	
<b>T03-357 : UV LIGHT IRRADIATION OF FIBERS IN TERMOPLASTIC PULTRUSION FOR HIGHER SURFACE ENERGY .....</b>	<b>880</b>
<i>Christian Kahl</i>	
<b>T03-468 : PROPERTY CHARACTERIZATION OF INJECTION MOLDED HYBRID COMPOSITES.....</b>	<b>885</b>
<i>Gangjian Guo</i>	
<b>T03-617 : ACOUSTIC AND FLAME RETARDANT LIGHT WEIGHT REINFORCED COMPOSITE.....</b>	<b>890</b>
<i>Ruomiao Wang</i>	
<b>T03-T3K : KEYNOTE: EVOLUTION OF THERMOPLASTIC COMPOSITES IN PORTABLE ELECTRONICS .....</b>	<b>895</b>
<i>Nicholas Abbatiello</i>	
<b>T04-028 : MECHANICAL CHARACTERIZATION OF POLYCARBONATE REINFORCE WITH WOVEN GLASS FIBER.....</b>	<b>896</b>
<i>Omar Solorza-Nicolas</i>	
<b>T04-044 : CORRELATION OF CHAIN DYNAMICS TO MECHANICAL PROPERTIES OF HIGH PERFORMANCE CROSSLINKED SYSTEMS?.....</b>	<b>916</b>
<i>Shaw Hsu</i>	
<b>T04-050 : CHASING THE BOTTOM OF THE ENERGY LANDSCAPE: VAPOR DEPOSITED AMORPHOUS FLUOROCARBONS.....</b>	<b>917</b>
<i>Gregory McKenna</i>	
<b>T04-225 : QUANTITATIVE EVALUATION OF MAR VISIBILITY RESISTANCE OF POLYMER FILMS .....</b>	<b>919</b>
<i>Shuang Xiao</i>	
<b>T04-309 : DEVELOPMENT OF A FILM CONFORMABILITY TESTER .....</b>	<b>924</b>
<i>Haiying Zhang</i>	
<b>T04-481 : UNDERSTANDING THE DEFORMATION BEHAVIOR OF NANOCOMPOSITES WITH DISCRETE CARBON NANOTUBES.....</b>	<b>938</b>
<i>Clive Bosnyak</i>	
<b>T05-021 : INFRARED WELDING OF CONTINUOUS GLASS FIBER-REINFORCED THERMOPLASTICS – APPROACHES TO USE THE FIBERS IN THE JOINT .....</b>	<b>943</b>
<i>Marios Constantinou</i>	
<b>T05-138 : INFRARED WELDING OF HIGHLY FILLED GRAPHITE COMPOSITES.....</b>	<b>951</b>
<i>Martin Facklam</i>	
<b>T05-181 : DIRECT-FRICTION RIVETING OF METAL-CFRP OVERLAP JOINTS .....</b>	<b>959</b>
<i>Natascha Zocoller Borba</i>	
<b>T05-187 : EXPERIMENTAL INVESTIGATION OF AMPLITUDE TRANSMISSION IN ULTRASONIC WELDING OF THERMOPLASTIC COMPOSITES .....</b>	<b>967</b>
<i>Genevieve Palardy</i>	
<b>T05-212 : IMPROVEMENT ON FATIGUE PERFORMANCE OF METAL-COMPOSITE FRICTION SPOT JOINTS BASED ON THE WELD-BONDING CONCEPT.....</b>	<b>972</b>
<i>Natalia Manente Andre</i>	
<b>T05-303 : TIME-DEPENDENT VIBRATION WELDING BEHAVIOR OF FOAM INJECTION MOLDED PARTS IN CONSIDERATION OF VARIOUS FIBER REINFORCEMENTS AND JOINT TYPES .....</b>	<b>980</b>
<i>Dario Heidrich</i>	
<b>T05-315 : ADHESIVE FREE BONDING OF PINE BY VIBRATIONAL WELDING.....</b>	<b>986</b>
<i>Curtis Covelli</i>	
<b>T06-502 : MICRO MOLDING DRUG DELIVERY DEVICES TO MICRON TOLERANCES .....</b>	<b>990</b>
<i>Donna Bibber</i>	

<b>T06-668 : PART PROCESS - DEVELOPMENT AND VALIDATION FOR MULTIPLE MACHINES</b> .....	994
<i>Matthew Therrien</i>	
<b>T06-690 : 3D PRINTING ON POLYMERS FOR DRUG DELIVERY</b> .....	1000
<i>Roger Narayan</i>	
<b>T07-018 : DETERMINING CRITICAL STRESS FOR DUCTILE-BRITTLE TRANSITION OF POLYETHYLENE PIPE UNDER CREEP LOADING</b> .....	1019
<i>Ben Jar</i>	
<b>T07-172 : FRACTURE MECHANICAL CHARACTERIZATION OF NON-VIRGIN PIPE MATERIALS</b> .....	1024
<i>Andreas Frank</i>	
<b>T07-177 : PROPOSED ALLOWABLE SCRATCH DEPTH FOR HIGH-DENSITY POLYETHYLENE (HDPE) PIPES IN SAFETY-RELATED NUCLEAR APPLICATIONS</b> .....	1031
<i>Prabhat Krishnaswamy</i>	
<b>T07-365 : APPLICATION OF J-INTEGRAL METHODS TO TOUGH PIPE MATERIALS</b> .....	1042
<i>Anja Gosch</i>	
<b>T07-381 : COMPARISON OF REAL AND SIMULATED FAILURE TIMES BASED ON THE SLOW CRACK GROWTH BEHAVIOR OF ELECTROFUSION SOCKETS MADE OF POLYETHYLENE</b> .....	1048
<i>Isabelle Berger</i>	
<b>T07-451 : EXAMINING DESIGN CHANGES POTENTIALLY INFLUENCING THE LIFETIME OF ELECTROFUSION SOCKET</b> .....	1054
<i>Jan Poduska</i>	
<b>T08-104 : THERMAL INVESTIGATION BETWEEN PRESSURE CONDITIONING AND THERMAL ANNEALING IN AGING STUDIES OF GLASSY THERMOSETS</b> .....	1059
<i>Brendan Ondra</i>	
<b>T08-243 : OBSERVED PARTICLE MIGRATION DURING PROCESSING OF POLYPROPYLENE WITH GLASS BEADS</b> .....	1064
<i>Jose Luis Colon Quintana</i>	
<b>T08-291 : ANALYTICAL CHARACTERIZATION OF COMMERCIAL PRODUCTS: COOL COMFORT TECHNOLOGIES FOR BEDDING PRODUCTS</b> .....	1070
<i>Praveenkumar Boopalachandran</i>	
<b>T08-379 : TGA-FTIR UNLEASHED AT LAST - INTRODUCING A FULLY-INTEGRATED, TRANSFER LINE-FREE COUPLING FOR EVOLVED GAS ANALYSIS OF POLYMERS</b> .....	1075
<i>Bob Fidler</i>	
<b>T08-435 : ROLE OF FUNCTIONALIZATION OF NANOCCLAY PARTICLES ON DIFFUSION PROPERTIES OF COMMERCIAL GASOLINE THROUGH POLYMER MEMBRANES</b> .....	1076
<i>James Sloan</i>	
<b>T08-583 : POLYETHERETHERKETONE (PEEK) EXPOSURE TO ZNBR2 COMPLETION FLUIDS AT HIGH TEMPERATURES AND PRESSURES: IDENTIFICATION AND QUANTIFICATION OF SMALL MOLECULAR DECOMPOSITION PRODUCTS</b> .....	1081
<i>Joseph Baker</i>	
<b>T09-123 : ADVANCED MATERIALS FOR INCREASING OUTPUT AND REDUCING ENERGY</b> .....	1091
<i>Will Johnson</i>	
<b>T09-201 : SMART LIGHT AND ENERGY MANAGEMENT WITH ACRYLIC GLASS</b> .....	1106
<i>Péter Sebő</i>	
<b>T09-278 : STRESS-INDUCED CRYSTALLIZATION IN POLYPROPYLENE</b> .....	1125
<i>Pierre Donaldson</i>	
<b>T09-396 : USE AND UTILITY OF METAL SOAPS IN POLYOLEFINS</b> .....	1126
<i>Robert Sherman</i>	
<b>T09-528 : NUCLEATION OF SEMI-CRYSTALLINE POLYMERS WITH MINERALS</b> .....	1131
<i>Saied Kochesfahani</i>	
<b>T09-544 : PARTICLE ADDITIVES FOR SIMULTANEOUS ENHANCEMENT OF DEGRADATION AND TOUGHENING IN POLY(LACTIC ACID) FOR ADDITIVE MANUFACTURING</b> .....	1146
<i>Caroline Multari</i>	
<b>T09-558 : A CHARACTERIZATION OF SOY ADDITIVES IN BIOBASED POLYETHYLENE FILMS</b> .....	1150
<i>Peter Perez</i>	
<b>T10-142 : DESIGNING FOR INDUSTRIAL 3D PRINTING</b> .....	1155
<i>Thomas Davis</i>	

<b>T10-234 : HOW TO APPROACH MATERIAL VALIDATION FOR PRODUCTION PARTS</b> .....	1156
<i>Mike Vasquez</i>	
<b>T10-306 : ENSURING MECHANICAL RELIABILITY OF ADDITIVELY MANUFACTURED PARTS THROUGH TESTING AND SIMULATION</b> .....	1157
<i>Mark Oliver</i>	
<b>T10-310 : 3 YOUR MIND: TO PRINT OR NOT TO PRINT, THAT IS THE ADDITIVE MANUFACTURING QUESTION</b> .....	1158
<i>Jim Allen</i>	
<b>T10-329 : EFFECTIVE SUBTRACTION BEFORE ADDITIVE MANUFACTURING: THE ART OF LEVERAGING CONSTRAINTS</b> .....	1159
<i>Ravi Kunju</i>	
<b>T10-386 : BEST PRACTICES FOR DESIGN OF PLASTIC 3D PRINTED PARTS</b> .....	1161
<i>Ashley Eckhoff</i>	
<b>T10-525 : CASE STUDY: THE HP PRINTER THAT PRINTS ITSELF</b> .....	1162
<i>Michael Shannon</i>	
<b>T10-547 : THE OPPORTUNITY WITH DIRECT DIGITAL MANUFACTURING</b> .....	1163
<i>Tomeo Wise</i>	
<b>T11-251 : EFFECT OF MOLECULAR WEIGHT ON DYNAMICS OF LINEAR ISOTACTIC POLYPROPYLENE MELT AT VERY HIGH SHEAR RATES</b> .....	1164
<i>Martin Zatloukal</i>	
<b>T11-372 : INFLUENCE OF OSCILLATING SURFACES ON THE RHEOLOGICAL BEHAVIOR OF THERMOPLASTIC MELT</b> .....	1168
<i>Julius Geis</i>	
<b>T11-426 : MOLECULAR WEIGHT DISTRIBUTION PREDICTION OF RHEOLOGY AGAINST GEL PERMEATION CHROMATOGRAPHY FOR FILM GRADE POLYPROPYLENE</b> .....	1172
<i>Hoda Bayazian</i>	
<b>T11-432 : RHEOLOGY AS A TOOL TO UNDERSTAND ANTI-DRIP PROPERTIES IN FLAME RETARDANT POLYCARBONATE RESINS</b> .....	1177
<i>Manojkumar Chellamuthu</i>	
<b>T11-443 : EFFECT OF SALT ADDITION ON DYNAMIC MECHANICAL PROPERTIES FOR POLY(METHYL METHACRYLATE)</b> .....	1181
<i>Masayuki Yamaguchi</i>	
<b>T11-457 : SYNERGISTIC ABSORPTION OF MICROWAVE RADIATION IN PVDF HYBRID NANOCOMPOSITES CONTAINING MULTIWALL CARBON NANOTUBES AND FERRITE PARTICLES</b> .....	1183
<i>Uttandaraman Sundararaj</i>	
<b>T11-566 : NONLINEAR VISCOELASTIC FLUID MODELS WITH FRACTAL TIME DERIVATIVE</b> .....	1191
<i>Donggang Yao</i>	
<b>T11-633 : DMA – THE OTHER SIDE OF RHEOLOGY</b> .....	1196
<i>Kevin Menard</i>	
<b>T12-081 : EXTRUSION PERFORMANCE ANALYSIS PROTOCOL</b> .....	1197
<i>David Kazmer</i>	
<b>T12-100 : COST ANALYSIS FOR INSTALLING NEW AND OPTIMIZED SCREWS FOR SINGLE-SCREW EXTRUSION LINES</b> .....	1203
<i>Mark A. Spalding</i>	
<b>T12-134 : USE OF PRESSURE AND TEMPERATURE PROFILE INSIDE AN EXTRUDER FOR OPTIMIZING/TROUBLESHOOTING EXTRUSION PROCESSES</b> .....	1208
<i>John W. S. Lee</i>	
<b>T12-236 : A SIMPLE SYSTEM ANALYSIS FOR THE SMALL EXTRUSION SCREW AND DIE</b> .....	1213
<i>Jingyi Xu</i>	
<b>T12-346 : INVESTIGATION ON THE EFFECTS OF THE PROCESSING PARAMETERS ON THE REPLICATION QUALITY OF MICRO-STRUCTURES IN THE EXTRUSION EMBOSSING OF POLYCARBONATE FILMS</b> .....	1220
<i>Florian Petzinka</i>	
<b>T12-371 : A NETWORK-ANALYSIS-BASED COMPARATIVE STUDY OF THE THROUGHPUT BEHAVIOR IN DOUBLE WAVE SCREW GEOMETRIES</b> .....	1226
<i>Hans-Juergen Luger</i>	
<b>T12-400 : MELTING AND RESIDENCE TIME IN THE SINGLE SCREW EXTRUSION</b> .....	1232
<i>Clemens Martin Grosskopf</i>	

<b>T12-569 : EXAMINATION OF POWER CONSUMPTION ON MELT SPINNING: MONO AND BI-COMPONENT FIBERS</b> .....	1239
<i>Javier Vera Sorroche</i>	
<b>T12-585 : EFFECT OF SCALE UP ON THERMAL HOMOGENEITY AND ENERGY EFFICIENCY IN SINGLE SCREW EXTRUSION</b> .....	1243
<i>Javier Vera Sorroche</i>	
<b>T13-031 : INVESTIGATION OF THE EFFECT OF STABILIZER SYSTEM, MEDIUM AND TEMPERATURE ON THE FATIGUE CRACK GROWTH RESISTANCE OF POLYPROPYLENE FOR A PROPER MATERIAL SELECTION</b> .....	1249
<i>Joerg Fischer</i>	
<b>T13-055 : TAN DELTA - THE DIMENSIONLESS PROPERTY THAT TELLS YOU ALMOST EVERYTHING YOU NEED TO KNOW ABOUT A POLYMERIC MATERIAL</b> .....	1254
<i>Michael Sepe</i>	
<b>T13-080 : FRACTOGRAPHY: THE SCIENCE &amp; ART OF DETERMINING HOW PLASTICS BREAK</b> .....	1255
<i>Farzana Ansari</i>	
<b>T13-090 : ANY BULDGING OR PANELING ISSUES FOR YOUR PACKAGES?</b> .....	1256
<i>Jay Yuan</i>	
<b>T13-283 : FATIGUE RESISTANCE AND FAILURE CHARACTERIZATION OF GLASS FIBER REINFORCED PA GRADES</b> .....	1260
<i>Patrick R. Bradler</i>	
<b>T13-380 : RAMAN SPECTROSCOPIC DETECTION OF MICROSCOPIC STRUCTURAL CHANGES IN POLYETHYLENE DURING PHOTODEGRADATION</b> .....	1265
<i>Yusuke Hiejima</i>	
<b>T13-428 : HOW TO USE THERMOANALYTICAL METHODS FOR FAILURE ANALYSIS</b> .....	1270
<i>Tobias Pflock</i>	
<b>T13-475 : FRACTURE PROPERTIES OF HDPE EXPOSED TO CHLORINATED WATER</b> .....	1271
<i>Susan Mantell</i>	
<b>T14-016 : DETERMINATION OF FLAME RETARDANT MATERIALS IN PLASTICS USING A COMBINATION OF ANALYTICAL TECHNIQUES</b> .....	1276
<i>Yanika Schneider</i>	
<b>T14-052 : EFFECTS OF BIODEGRADABLE ADDITIVES ON THE NUCLEATION INTENSITY AND GROWTH RATE OF ISOTACTIC POLYPROPYLENE SPHERULITES</b> .....	1279
<i>Yousef Mubarak</i>	
<b>T14-301 : RHEOLOGICAL METHODS FOR CHARACTERIZING THE DEGREE OF LONG CHAIN BRANCHING IN POLYETHYLENE</b> .....	1285
<i>Greg Kamykowski</i>	
<b>T14-402 : EFFECT OF HNTS DISPERSION IN PVDF ON MORPHOLOGY AND ITS FORMATION MECHANISM OF TENSILE FRACTURED SURFACES</b> .....	1293
<i>Han-Xiong Huang</i>	
<b>T14-423 : PELLET SHAPE CLASSIFICATION USING DEEP NEURAL NETWORKS</b> .....	1298
<i>Brenda Colegrove</i>	
<b>T14-433 : OPEN-CELL FOAMING OF PP/PDPE FIBRILLATED COMPOSITES</b> .....	1305
<i>Yu Guang Chen</i>	
<b>T14-619 : CORE/SHELL STRUCTURE OF ELECTROSPUN POLYCARBONATE NANOFIBERS</b> .....	1307
<i>Yiyang Xu</i>	
<b>T14-664 : CRYSTALLIZATION BEHAVIOR OF SHEARED POLYAMIDE 66</b> .....	1312
<i>Anne Gohn</i>	
<b>T15-001 : ESTABLISHING POLYMER EQUIVALENCY PROCESS FOR MEDICAL DEVICE APPLICATION</b> .....	1316
<i>Shantanu Shivdekar</i>	
<b>T15-151 : OPPORTUNITIES AND OBSTACLES FOR PLASTIC PRIMARY PACKAGING IN DRUG DELIVERY DEVICES</b> .....	1321
<i>Sarah Clark</i>	
<b>T15-163 : PROCESSING OF TPUS FOR MEDICAL APPLICATIONS</b> .....	1323
<i>Ian Pierson</i>	
<b>T15-183 : CHEMICAL AND THERMAL ANALYSIS OF THE SURFACE EXTRACTIVES OF MEDICAL TUBING OF A POLY(ETHER-B-AMIDE) COPOLYMER USING FTIR, GPC, AND DSC METHODS</b> .....	1331
<i>Xiaoping Guo</i>	
<b>T15-518 : ELASTOMERIC TO ENGINEERED THERMOPLASTIC POLYURETHANES</b> .....	1337
<i>Anthony Walder</i>	

<b>T15-567 : EVA POLYMER AS A PLATFORM FOR ADVANCED DRUG DELIVERY</b> .....	1342
<i>Don Loveday</i>	
<b>T15-574 : ANTIMICROBIAL BI-LAYER CATHETERS – EXTRUSION AND PERFORMANCE</b> .....	1354
<i>Timothy Largier</i>	
<b>T15-666 : HIGH PERFORMANCE POLYMERS FOR MEDICAL DEVICES</b> .....	1357
<i>Marissa Tierno</i>	
<b>T15-682 : SMART MATERIAL SELECTION FOR QUIET, SMOOTH-SLIDING MEDICAL DEVICES INCLUDING NEW COLOR CONCEPT</b> .....	1372
<i>Kirsten Markgraf</i>	
<b>T16-077 : PREVENTING PLASTIC PRODUCT FAILURE</b> .....	1375
<i>Paul Tres</i>	
<b>T16-149 : HOW POOR DESIGN CAN SEVERELY LIMIT MATERIALS, TOOLING AND PROCESSING CAPABILITIES</b> .....	1380
<i>Vikram Bhargava</i>	
<b>T16-404 : EFFECT OF HNTS DISPERSION IN PVDF ON MORPHOLOGY AND ITS FORMATION MECHANISM OF TENSILE FRACTURED SURFACES</b> .....	1381
<i>Min Wu</i>	
<b>T16-538 : THE STRATEGIC VALUE OF DESIGNING FOR COST</b> .....	1386
<i>Laurel Bougie</i>	
<b>T16-552 : HOW OVER THE WALL ENGINEERING AFFECTS PROCESS CAPABILITY AND PROCESS ROBUSTNESS</b> .....	1387
<i>Suhas Kulkarni</i>	
<b>T17-019 : NOVEL APPLICATIONS OF BETA NUCLEATED POLYPROPYLENE IN FILM, THERMOFORMING, AND INJECTION MOLDING APPLICATIONS</b> .....	1388
<i>Philip Jacoby</i>	
<b>T17-035 : NANOLAYERED NEXT GENERATION HIGH ENERGY DENSITY CAPACITORS FOR ELECTRIC VEHICLES</b> .....	1406
<i>Michel Ponting</i>	
<b>T17-060 : IMPROVE THE PERFORMANCE OF YOUR FLEXIBLE RETORT FILM</b> .....	1423
<i>Sergi Salva Saez</i>	
<b>T17-078 : THERMALLY PURIFIED CARBONS FOR FOOD CONTACT APPLICATIONS – A CASE STUDY ON EU COMPLIANCE</b> .....	1439
<i>Rijo Jacob Robin</i>	
<b>T17-089 : BIOPOLYMER COMPOUNDS FOR APPLICATIONS REQUIRING MARINE DEGRADATION</b> .....	1450
<i>Stanley Dudek</i>	
<b>T17-220 : SCHULAMID® HIGH PERFORMANCE NYLON FOR FUEL SYSTEM APPLICATIONS</b> .....	1464
<i>Ying Shi</i>	
<b>T17-223 : ADVANCES IN WEAR AND FRICTION SOLUTIONS</b> .....	1474
<i>Edward Williams</i>	
<b>T17-235 : COPOLYESTER BASED WPC(WOOD PLASTIC COMPOSITES ; WPC FROM ECOZEN®, BIO-COPOLYESTER MADE BY SK CHEMICALS</b> .....	1481
<i>Tae Young Kim</i>	
<b>T17-509 : EXTENDING THE USE AND PROPERTIES OF PVDF POLYMER</b> .....	1492
<i>Jason Pomante</i>	
<b>T19-394 : NEW PLASTICS JOINING TECHNOLOGIES</b> .....	1507
<i>Jason Dornbos</i>	
<b>T19-482 : DUKANE'S RECENT ADVANCEMENTS IN PLASTIC WELDING TECHNOLOGY</b> .....	1525
<i>Alex Savitski</i>	
<b>T19-523 : BENEFITS OF VIBRATION WELDING WITH IR PREHEAT</b> .....	1546
<i>John Paul Kurpiewski</i>	
<b>T19-555 : LASER WELDING PLASTICS: RAPID PROTOTYPING TO MASS PRODUCTION USING QUASI-SIMULTANEOUS MULTIDIMENSIONAL MASK WELDING</b> .....	1555
<i>Andrew Geiger</i>	
<b>T19-651 : ULTRASONIC WELDING 20 KHZ VS. 15 KHZ - CHALLENGES POSED BY HIGHLY CRYSTALLINE MATERIAL</b> .....	1572
<i>Dave Krysiak</i>	
<b>TH01-145 : ONE-STEP ELECTROCHEMICAL TREATMENT OF METAL INSERTS FOR TIGHT POLYMER-METAL HYBRID APPLICATIONS</b> .....	1587
<i>Tobias Kleffel</i>	

<b>TH01-273 : THERMOELECTRIC PROPERTIES OF OPEN CELLULAR POLYMER TEMPLATES COATED WITH 1D AND 2D CARBON-BASED NANOPARTICLES</b> .....	1595
<i>Siu Ning (Sunny) Leung</i>	
<b>TH01-385 : EFFECTS OF PROCESSING VARIABLES ON CRYSTALLIZATION PHASES OF P(VDF-TRFE-CFE) THIN FILMS</b> .....	1600
<i>Hao Pan</i>	
<b>TH01-390 : NEW TRANSPARENT HIGH HEAT POLYCARBONATE COPOLYMER RESINS FOR THERMO-OPTICAL APPLICATIONS</b> .....	1604
<i>Mark Van Der Mee</i>	
<b>TH01-446 : HIGH TEMPERATURE DIELECTRIC FILM</b> .....	1608
<i>Matthew Niemeyer</i>	
<b>TH01-658 : HIGHLY FILLED BIOCHAR/ULTRA-HIGH MOLECULAR WEIGHT POLYETHYLENE/LINEAR LOW DENSITY POLYETHYLENE COMPOSITES FOR ELECTROMAGNETIC INTERFERENCE SHIELDING</b> .....	1617
<i>Suiyi Li</i>	
<b>TH02-068 : RECYCLED AND WASTE MATERIALS IN SELECTED AUTOMOTIVE APPLICATIONS</b> .....	1622
<i>Karnik Tarverdi</i>	
<b>TH02-132 : INNOVATIONS IN AUTOMOTIVE PLASTICS “APPLICATIONS” - BASED ON SPE AWARDS</b> .....	1627
<i>Suresh Shah</i>	
<b>TH02-205 : AERODYNAMIC OPTIMIZATION OF A DAY-CAB FAIRING</b> .....	1653
<i>Carlos Pereira</i>	
<b>TH02-210 : INTELLIGENT AUTOMOTIVE DESIGN WITH PLASTICS</b> .....	1659
<i>Michael Ruby</i>	
<b>TH02-327 : HYBRID PEDESTRIAN-SAFE SOLUTION FOR THE AUTOMOTIVE INDUSTRY</b> .....	1670
<i>Pavan Puranik</i>	
<b>TH02-342 : CHEMICAL RESISTANCE OF PMMA, ASA AND ASA+PC FOR AUTOMOTIVE EXTERIOR TRIM APPLICATIONS</b> .....	1675
<i>Tom Pickett</i>	

### VOLUME 3

<b>TH02-370 : COMPUTATIONAL MODELING OF IMPEDANCE TUBE AND VALIDATION FOR TUNING THE ACOUSTIC TRANSMISSION LOSS OF POLYMERIC MATERIALS</b> .....	1679
<i>Vasudev Nilajkar</i>	
<b>TH03-263 : INFLUENCE OF THE FIBER-MATRIX-INTERACTION ON THE FRACTURE BEHAVIOR OF REGENERATED CELLULOSE FIBER REINFORCED POLYPROPYLENE</b> .....	1684
<i>Jan-Christoph Zarges</i>	
<b>TH03-328 : CRYSTALLIZATION BEHAVIOR OF POLY(LACTIC ACID) COMPOSITE NANOFIBERS BY ANNEALING</b> .....	1690
<i>Jian-Hua Hou</i>	
<b>TH03-397 : THE INFLUENCE OF HYGROTHERMAL AGING ON THE MATERIAL PROPERTIES OF ENDLESS FIBER-REINFORCED THERMOPLASTICS</b> .....	1695
<i>Matthias Huettner</i>	
<b>TH03-454 : EFFECT OF FREEZE-DRYING ON THE MORPHOLOGY OF DRIED CELLULOSE NANOCRYSTALS (CNCS) AND TENSILE PROPERTIES OF POLY(LACTIC) ACID-CNC COMPOSITES</b> .....	1701
<i>Nicole Stark</i>	
<b>TH03-580 : EFFECTS OF TRIS(NONYLPHENYL) PHOSTITE ON MECHANICAL PROPERTY OF POLY(3-HYDROXYBUTYRATE-CO-3-HYDROXYHEXANOATE)</b> .....	1706
<i>Takashi Kuboki</i>	
<b>TH03-591 : DAMAGE INDUCED SURFACE TEXTURING OF SHORT FIBER PDMS COMPOSITE MATERIALS</b> .....	1711
<i>Reza Rizvi</i>	
<b>TH03-622 : POTENTIAL OF BIOCARBON AS REINFORCEMENT FOR PBT IN AUTOMOTIVE APPLICATIONS</b> .....	1716
<i>Manjusri Misra</i>	
<b>TH05-227 : DIGITAL INKJET FOR DIRECT TO OBJECT PRINTING</b> .....	1721
<i>Jeff Peterson</i>	

<b>TH05-228 : DIGITAL PRINTING TECHNOLOGIES FOR PLASTICS – FOCUS ON COLOR INKJET AND LASER MARKING</b> .....	1726
<i>Jeff Peterson</i>	
<b>TH05-491 : CARBON BLACK SELECTION FOR SUCCESSFUL THROUGH TRANSMISSION LASER WELDING AND JOINING</b> .....	1733
<i>Avraham Benatar</i>	
<b>TH05-685 : ROBOTIC USE IN PAD PRINTING</b> .....	1738
<i>Chris Demell</i>	
<b>TH05-721 : APPLICATIONS FOR LOW ENERGY EBEBAM CURING TECHNOLOGY IN CONSUMER PRODUCT FLEXIBLE PACKAGING APPLICATIONS</b> .....	1739
<i>Anthony Carignano</i>	
<b>TH05-722 : EFFECTS OF SURFACE TREATMENT ON HARD TO BOND PLASTICS</b> .....	1762
<i>Matthew Miner</i>	
<b>TH06-025 : ALL ENCOMPASSING EXTRUSION TECHNOLOGY FOR PRODUCING A WIDE SPECTRUM OF SIMULTANEOUSLY BIORIENTED FILMS</b> .....	1766
<i>Adolfo Edgar</i>	
<b>TH06-088 : COMPARISON OF ATOMSPHERIC PLASMA AND CORONA TREATMENTS IN PROMOTING SEAL STRENGTH</b> .....	1773
<i>Rory Wolf</i>	
<b>TH06-393 : CHANGEOVER TIME FOR A LAB-SCALE BLOWN FILM LINE</b> .....	1780
<i>Christopher Thurber</i>	
<b>TH06-434 : BIAXIALLY ORIENTED BARRIER FILM (BOPP) WITH NANOSTRUCTURED ADDITIVES</b> .....	1787
<i>Krishnamurthy Jayaraman</i>	
<b>TH06-449 : TRANSPORTATION AND STORAGE FILM</b> .....	1794
<i>Tom Stalun</i>	
<b>TH06-494 : BIAXIALLY ORIENTED POLYETHYLENE (BOPE) FILMS FABRICATED VIA TENTER FRAME PROCESS AND APPLICATIONS THEREOF</b> .....	1809
<i>Lin Yijian</i>	
<b>TH06-640 : METHOD TO MEASURE OXYGEN PERMEANCE IN SEALED FLEXIBLE PACKAGING</b> .....	1814
<i>Alejandro Serna</i>	
<b>TH07-085 : HOW TO USE CAE TO DIAGNOSE THE UNDER-PERFORMANCE PROBLEM OF THE EXISTED MACHINE IN INJECTION MOLDING TO FACE AUTOMATION CHALLENGE</b> .....	1819
<i>Chao-Tsai Huang</i>	
<b>TH07-095 : DEEP LEARNING ON CAE BASED ON THE INTEGRATION OF THE TAGUCHI METHOD AND NEURAL NETWORK</b> .....	1824
<i>Wen-Ren Jong</i>	
<b>TH07-096 : SIMULATION STUDY OF INJECTION COMPRESSION MOULDING PROCESS FOR A 0.6MM THIN POLYMERIC MICROFLUIDIC CHIP</b> .....	1830
<i>Ge Chen</i>	
<b>TH07-196 : USING NEW ANISOTROPIC ROTATIONAL DIFFUSION MODEL TO IMPROVE PREDICTION OF SHORT FIBERS IN THERMOPLASTIC INJECTION MOLDING</b> .....	1835
<i>Alexander Bakharev</i>	
<b>TH07-214 : DEFORMATION AND STRESS PREDICTION OF INJECTION MOLDED COMPONENTS AFTER BEING MOUNTED INTO DESIGNED POSITION</b> .....	1840
<i>Zhiliang Fan</i>	
<b>TH07-265 : EMPIRICAL MODELING AND SIMULATION OF THE MICROSTRUCTURE REPLICATION IN INJECTION MOLDING</b> .....	1845
<i>Torben Fischer</i>	
<b>TH07-543 : MOLDFLOW OPTIMIZATION OF MICRO-CAVITIES FILLING DURING INJECTION MOLDING PROCESS</b> .....	1852
<i>Ali Rajhi</i>	
<b>TH08-275 : EFFECT OF DIFFERENT MOLD COATINGS ON FLOW RESISTANCE IN THIN-WALL INJECTION MOLDING OF POLYSTYRENE PARTS</b> .....	1858
<i>Marco Sorgato</i>	
<b>TH08-424 : ADVANTAGES OF CT SCANNING FOR INDUSTRIAL APPLICATIONS</b> .....	1863
<i>Melissa Butrie</i>	
<b>TH08-606 : THE R&amp;D TAX CREDIT ENCOURAGES INNOVATION FOR PLASTICS PROCESSORS</b> .....	1872
<i>Michael Devereux</i>	

<b>TH08-670 : CHANGE MOLDS FOR EFFICIENT CUSTOMER DEVELOPMENT / PROTOTYPE</b> .....	1876
<i>Tom Worcester</i>	
<b>TH08-696 : STANDARDIZED COMPONENTS ECONOMICALLY IN LARGE MOLDS</b> .....	1885
<i>Brenda Clark</i>	
<b>TH09-105 : EFFECT OF FOAM DENSITY ON ELASTOMERIC NANOCOMPOSITE FOAMS BASED ON POLYISOPRENE RUBBER</b> .....	1901
<i>Ali Vahidifar</i>	
<b>TH09-254 : EFFECT OF SOFT SEGMENTS AND NUCLEATION AGENTS ON THE PROPERTIES OF THERMOPLASTIC POLYURETHANE FOAM</b> .....	1905
<i>Shu-Kai Yeh</i>	
<b>TH09-548 : THEORETICAL AND EXPERIMENTAL INVESTIGATION OF BUBBLE GROWTH IN HIGH-PRESSURE FOAM INJECTION MOLDING</b> .....	1910
<i>Chongda Wang</i>	
<b>TH09-593 : STRAIN HARDENING OF LINEAR POLYMER ENHANCED BY HEAT SHRINKING FIBERS</b> .....	1911
<i>Eric S. Kim</i>	
<b>TH09-594 : IN-SITU VISUALIZATION OF CRYSTAL NUCLEATION AND GROWTH BEHAVIORS OF POLYLACTIC-ACID (PLA) UNDER HIGH PRESSURE CO<sub>2</sub></b> .....	1916
<i>Sandra Romero</i>	
<b>TH09-632 : MODELING OF CELL GROWTH EFFECTS ON THE PERCOLATION THRESHOLD OF ROD-LIKE FILLERS IN CONDUCTIVE POLYMER COMPOSITE FOAMS</b> .....	1921
<i>Sai Wang</i>	
<b>TH09-635 : IN-SITU PP/PET NANO-FIBRILLATED COMPOSITES: THE EFFECT OF VISCOSITY RATIO ON FIBRILLATION AND FOAMING BEHAVIOR</b> .....	1922
<i>Chongxiang Zhao</i>	
<b>TH10-208 : AUTOMOTIVE LIGHTWEIGHTING WITH REDUCED DENSITY POLYAMIDE BLENDS</b> .....	1924
<i>Ying Shi</i>	
<b>TH10-305 : XENOY™ ENH2900 FOR HIGH CHEMICAL RESISTANCE &amp; NON-BR/CL FR APPLICATIONS</b> .....	1936
<i>Emily He</i>	
<b>TH10-321 : A NOVEL DESIGN OF FUNCTIONALIZED ORGANO-MODIFIED SILOXANES FOR SURFACE TREATMENT OF PARTICLES AND FILLERS</b> .....	1941
<i>Ido Offenbach</i>	
<b>TH10-431 : IMPACT PP COPOLYMERS FOR HOME APPLIANCE APPLICATIONS</b> .....	1952
<i>Timothy Farrell</i>	
<b>TH10-437 : DESIGN AND OPERATIONAL CHALLENGES OF WEARABLE DRUG DELIVERY SYSTEMS</b> .....	1959
<i>Hossam Metwally</i>	
<b>TH10-586 : CHAMELEON - AN UNIQUE MULTISCALE MODELING TOOL</b> .....	1974
<i>Lalitha Subramanian</i>	
<b>TH10-603 : THERMOPLASTIC HEATSINK SOLUTION FOR LED LUMINAIRE</b> .....	1991
<i>Remesh Kuzhikkali</i>	
<b>TH10-609 : REALISTIC SIMULATION SOLUTIONS USING FEA FOR DESIGN, OPTIMIZATION, AND FABRICATION OF PLASTICS</b> .....	1998
<i>Arindam Chakraborty</i>	
<b>TH11-004 : HOW PLASTICS HELPS TO CONQUER THE NEW CHALLENGES OF VEHICLE ELECTRIFICATION</b> .....	2018
<i>Werner Posch</i>	
<b>TH11-067 : CONNECTING RHEOLOGY OF POLYOLEFIN ELASTOMERS TO DISPERSION IN A POLYPROPYLENE MATRIX VIA MODELING AND EXPERIMENTS WITH SIMPLE FLOW FIELDS</b> .....	2019
<i>Jeff Munro</i>	
<b>TH11-130 : DEVELOPMENT OF LOW EMISSION POLYOLEFIN COMPOSITES FOR AUTOMOTIVE INTERIORS</b> .....	2025
<i>Tanmay Pathak</i>	
<b>TH11-173 : DYNAMIC WATER PENETRATION PREDICTION FOR PUSH-BACK PROCESS IN WATER-ASSISTED INJECTION MOLDING</b> .....	2030
<i>Jim Hsu</i>	
<b>TH11-262 : A NOVEL GLASS FILLER REINFORCED COMPOUND FOR AUTOMOTIVE INTERIOR PARTS</b> .....	2036
<i>Cheolhee Park</i>	



<b>TH11-297 : EFFECT OF GRAIN PATTERN AND TALC CONTENT ON SCRATCH AND MAR BEHAVIORS OF TEXTURED THERMOPLASTIC OLEFINS .....</b>	<b>2040</b>
<i>Shuoran Du</i>	
<b>TH11-298 : VEHICLE LIGHTWEIGHTING AND IMPROVED CRASHWORTHINESS - PLASTICS AND HYBRID SOLUTIONS .....</b>	<b>2045</b>
<i>Fred Chang</i>	
<b>TH11-331 : CORE-BACK TECHNOLOGY FOR AUTOMOTIVE BODY INTERIOR APPLICATIONS .....</b>	<b>2054</b>
<i>Steve McClintock</i>	
<b>TH11-529 : BUMPER TO BUMPER - REMOVING CONTAMINANTS FROM MOLDED PLASTIC PARTS WITH DRY ICE .....</b>	<b>2066</b>
<i>Steve Wilson</i>	
<b>TH12-137 : SYNTHESIS, CHARACTERIZATION AND WATER APPLICATION OF MICROCELLULAR INJECTION MOLDED PPGMA/MMT NANOCOMPOSITES .....</b>	<b>2070</b>
<i>Shyh-Shin Hwang</i>	
<b>TH12-204 : PREPARATION OF POLYPROPYLENE SINGLE-POLYMER COMPOSITES WITH GRAPHENE NANOPATELETS BY FILM-STACKING .....</b>	<b>2074</b>
<i>Mingwang Shao</i>	
<b>TH12-282 : ISOLATING THE EFFECT OF POLYMER-FILLER INTERACTION ON POLYMER COMPOSITE PROPERTY ENHANCEMENT: THE EXAMPLE OF POLYPROPYLENE/HALLOYSITE HYBRIDS .....</b>	<b>2079</b>
<i>Tong Wei</i>	
<b>TH12-401 : IN-SITU VITAMIN C REDUCTION OF GRAPHENE OXIDE FOR PREPARING FLEXIBLE TPU NANOCOMPOSITES WITH HIGH DIELECTRIC PERMITTIVITY .....</b>	<b>2084</b>
<i>Han-Xiong Huang</i>	
<b>TH12-407 : NUMERICAL AND EXPERIMENTAL STUDIES ON FLOW AND WARPAGE DURING RESIN TRANSFER MOLDING PROCESS .....</b>	<b>2089</b>
<i>Sejin Han</i>	
<b>TH12-590 : HIGH FRACTURE RESISTANCE, FILLER ADHESION AND DISPERSION IN EPOXY CARBON NANOFIBER COMPOSITES .....</b>	<b>2095</b>
<i>Muhammad Anwer</i>	
<b>TH12-611 : DEVELOPING ULTRASONIC PROCESSING OF CNT NANOPAPER/SOLVENTLESS EPOXY PREPREG .....</b>	<b>2099</b>
<i>Dan Zhang</i>	
<b>TH13-419 : INJECTION MOLDING PARTS WITH INTEGRATED ALL-INKJET PRINTED STRAIN GAUGE FOR CONDITON MONITORING .....</b>	<b>2104</b>
<i>Thomas Mitterlehner</i>	
<b>TH13-436 : GET THE WEAR OUT .....</b>	<b>2110</b>
<i>Steve Wilson</i>	
<b>TH13-440 : ARE YOUR LINEAR ROBOTS PROPERLY SIZED FOR YOUR INJECTION MOLDING MACHINE AND PROJECT?.....</b>	<b>2119</b>
<i>Robert Arsenault</i>	
<b>TH13-463 : INDUCTION HEAT COOL WITH SABIC RESINS: AN INTRO TO HIGH DEFINITION PLASTICS™ .....</b>	<b>2136</b>
<i>Jos Van Gisbergen</i>	
<b>TH13-464 : WITTMANN 4.0 - INDUSTRY 4.0 IN THE WITTMANN GROUP .....</b>	<b>2146</b>
<i>Markus Klaus</i>	
<b>TH13-557 : INTEGRATED, TRACEABLE, AUTOMATIC FLOW CONTROL FOR YOUR TOOLING AND PROCESS .....</b>	<b>2167</b>
<i>Edgar Sanchez</i>	
<b>TH13-663 : IMPROVING ACCURACY OF MOLD FILLING SIMULATIONS WITH EXPERIMENTAL DATA FROM FAST SCANNING CHIP CALORIMETRY .....</b>	<b>2168</b>
<i>Anne Gohn</i>	
<b>TH15-098 : KNOWLEDGE-BASED PRODUCT PLANNING AND DESIGNING OF INJECTION-MOLDED PARTS .....</b>	<b>2172</b>
<i>Rene Andrae</i>	
<b>TH15-119 : MODELING DOMING DEFLECTION OF CAPS &amp; CLOSURES WITH FINITE ELEMENT METHOD .....</b>	<b>2178</b>
<i>Wenbo Xu</i>	
<b>TH15-148 : YES, YOU CAN BREAK CERTAIN DESIGN RULES AND STILL HAVE A SUCCESSFUL PRODUCT - A LOGICAL LOOK AT THE IMPLICATIONS .....</b>	<b>2184</b>
<i>Vikram Bhargava</i>	

<b>TH15-316 : INFLUENCE OF THERMAL TREATMENT ON THE MECHANICAL PROPERTIES OF THERMOPLASTIC COMPOSITES OBTAINED BY LARGE-FORMAT 3D PRINTING PROCESS.....</b>	<b>2185</b>
<i>Miguel A. Hidalgo Salazar</i>	
<b>TH15-366 : DESIGN FOR MANUFACTURABILITY – 3D-CAD DESIGN METHODOLOGY FOR SPIRAL MILLED POLYMER PROCESSING TOOLS.....</b>	<b>2191</b>
<i>Phil Hungenberg</i>	
<b>TH15-503 : POLYPROPYLENE/ POLYVINYLIDENE FLUORIDE FIBROUS WATER/FUEL FILTERS PRODUCED BY A UNIQUE MULTILAYER CO-EXTRUSION PROCESS .....</b>	<b>2196</b>
<i>Cong Zhang</i>	
<b>TH15-537 : UTILIZING SHOULD COSTS TO ENGAGE MILLENNIALS IN THE WORKPLACE.....</b>	<b>2202</b>
<i>Laurel Bougie</i>	
<b>TH15-625 : TECHNICAL EVALUATION OF LOCTITE® HY 4060GY™: THE IDEAL REPLACEMENT FOR TRADITIONAL 2K 5-MINUTE EPOXIES.....</b>	<b>2203</b>
<i>Matthew Miner</i>	
<b>TH15-650 : QUASI-STATIC, NON-LINEAR, EXPLICIT FINITE ELEMENT ANALYSIS OF SMALL PET BOTTLES.....</b>	<b>2215</b>
<i>Naser Imran Hossain</i>	
<b>TH17-099 : HIGHLY VISCOUS POLYAMIDES MADE OF CAST POLYAMIDE 6 RECYCLATES.....</b>	<b>2221</b>
<i>Benjamino Rocco Formisano</i>	
<b>TH17-107 : INFLUENCE OF THE COMPOUNDING PROCESS PARAMETERS ON THE DISPERSION AND MATERIAL PROPERTIES OF GRAPHENE-BASED PP COMPOSITES USING A TWIN-SCREW EXTRUDER UNDER INDUSTRY RELATED CONDITIONS .....</b>	<b>2226</b>
<i>Maximilian Adamy</i>	
<b>TH17-500 : OPEN-CELL FOAMING OF PP/PTFE FIBRILLATED COMPOSITES .....</b>	<b>2233</b>
<i>Yuhui Qiao</i>	
<b>TH17-511 : AN APPLICATION OF THERMOPLASTIC POLYURETHANE FOAMING IN HANDRAIL EXTRUSION.....</b>	<b>2234</b>
<i>Qingping Guo</i>	
<b>TH17-541 : FLEXURAL TESTING OF PET-NANOFIBER AND PP FOAMED COMPOSITES .....</b>	<b>2238</b>
<i>Lun Howe Mark</i>	
<b>TH17-550 : PROTECTED BIOFILM GROWTH IN MACROPOROUS POLYVINYLIDENE FLUORIDE CARRIERS FOR BIOLOGICAL ORGANIC REMOVAL FROM MUNICIPAL WASTEWATER.....</b>	<b>2251</b>
<i>Pardis Ghahramani</i>	
<b>TH17-592 : IMPACT MANAGEMENT AND PROTECTION FOR PLAYING SURFACES USING EXPANDED POLYOLEFIN PARTICLE FOAM – NEW MATERIALS AND DESIGNS .....</b>	<b>2256</b>
<i>Steven Sopher</i>	
<b>TH17-596 : A SYSTEM FOR VISUALIZING AND MEASURING STRESS OF PLASTIC FLOWS UNDER SHEAR CONDITIONS.....</b>	<b>2264</b>
<i>Taylor Ducharme</i>	
<b>TH17-599 : ULTA-LOW DENSITY FOAMS OF NANOCRYSTALLINE CELLULOSE REINFORCED WITH POLYVINYLE ALCOHOL.....</b>	<b>2269</b>
<i>Nahal Aliheidari</i>	
<b>TH17-691 : MINING THE VALUE FROM OIL SANDS TAILINGS PONDS.....</b>	<b>2274</b>
<i>Pavani Cherukupally</i>	
<b>TH18-111 : COPOLYESTERS AS HEAT DISTORTION TEMPERATURE MODIFIERS IN RIGID PVC.....</b>	<b>2287</b>
<i>Robert Young</i>	
<b>TH18-351 : INNOVATIVE AND USEFUL CHARACTERISTIC VALUES FOR THE PROCESSING OF THERMOSETTING MOLDING COMPOUNDS.....</b>	<b>2298</b>
<i>Thomas Scheffler</i>	
<b>TH18-354 : SIMULATION OF MOLD FILLING CHARACTERIZATION OF PHENOLIC INJECTION MOLDING COMPOUNDS WITH SLIP BOUNDARY CONDITION .....</b>	<b>2306</b>
<i>Ngoc Tu Tran</i>	
<b>TH18-462 : NON-ISOCYANATE POLYURETHANE NETWORKS CAN BE MELT-REPROCESSED WITH FULL PROPERTY RECOVERY ASSOCIATED WITH CROSS-LINK DENSITY: THE CASE OF POLYHYDROXYURETHANE NETWORKS.....</b>	<b>2313</b>
<i>John Torkelson</i>	

<b>TH18-709 : TEMPERATURE CONTROL IN ACCELERATED LABORATORY WEATHERING TESTING OF PLASTICS.....</b>	2316
<i>Andy Francis</i>	
<b>TH18-710 : A NEW METHOD TO DETERMINE TF AND CLASH BERG STIFFNESS (ASTM D1043), USING A ROTATIONAL RHEOMETER .....</b>	2330
<i>Greg Kamykowski</i>	
<b>TH19-054 : NYLON6,6 RICH CO- AND TERPOLYMERS: HOW TUNING THERMAL BEHAVIOR ENHANCES FUNCTIONALITY AND ENABLES NEW APPLICAITON SPACES.....</b>	2341
<i>Jacob Ray</i>	
<b>TH19-314 : BIODEGRADABLE PHA FOR USE IN FASHION TEXTILES .....</b>	2361
<i>Molly Morse</i>	
<b>TH19-339 : SABIC THERMOCOMP™ HIGH MODULUS DUCTILE (HMD) PORTFOLIO .....</b>	2369
<i>Emily He</i>	
<b>TH19-409 : TAILOR-MADE UHMWPE BY HIGH SHEAR POLYMER MODIFICATION .....</b>	2374
<i>Binay Patel</i>	
<b>TH19-410 : ENHANCEMENT OF PROTECTIVE PACKAGING FILMS WITH CYCLIC OLEFIN COPOLYMERS (COC) .....</b>	2383
<i>Paul Tatarka</i>	
<b>TH19-587 : A NEW GRADE OF HIGH MELT STRENGTH POLYSTYRENE FOR THE XPS FOAM MARKET .....</b>	2394
<i>Ted Harris</i>	
<b>TH19-645 : NEW DEVELOPMENTAL COPOLYESTER.....</b>	2401
<i>Katherine Hofmann</i>	
<b>TH19-665 : DEVELOPING HIGH-TEMPERATURE POLYAMIDES TO RESIST PROLONGED HEAT STRESS, WHILE MAINTAINING AESTHETIC PROPERTIES AND EASE OF PROCESSING .....</b>	2412
<i>Robert Zappa</i>	
<b>TH21-102 : STYLIGHT - NEW MATERIAL SOLUTION FOR LIGHTWEIGHT DESIGN.....</b>	2421
<i>Brian Haggart</i>	
<b>TH21-241 : VOLUMETRIC TO GRAVIMETRIC CONVERSION .....</b>	2440
<i>Riley Wittmann</i>	
<b>TH21-266 : INFLUENCE OF GAS-COUNTER PRESSURE ON THE FOAMING BEHAVIOR AND THE CELL MORPHOLOGY OF FLEXIBLE POLYURETHANE FOAM.....</b>	2441
<i>Daniel Schneider</i>	
<b>TH21-421 : NEW GENERATION HDPE FOR PRESSURIZED APPLICATIONS – BEYOND PE100.....</b>	2446
<i>Jonathan Rabiei Tabriz</i>	
<b>TH21-526 : SABIC SOLUTIONS FOR PERSONAL HYGIENE APPLICATIONS: INDUSTRY TRENDS AND SABIC OFFERINGS, AND DEVELOPMENTS.....</b>	2457
<i>Jelena Bozovic-Vukic</i>	
<b>TH21-600 : KEPITAL® H100.....</b>	2469
<i>Jim Divita</i>	
<b>TH21-638 : SUPER HIGH FLOW VALOX FOR CONNECTORS.....</b>	2474
<i>Kenneth Thiel</i>	
<b>W01-231 : SEMICONDUCTIVE LLDPE POWER CABLE INSULATION SHIELD.....</b>	2483
<i>Jason Zhang</i>	
<b>W01-244 : STRUCTURE-PROPERTY RELATIONSHIPS OF MICROPOROUS MEMBRANES PRODUCED BY BIAXIAL ORIENTATION OF COMPATIBILIZED PP/NYLON 6 BLENDS.....</b>	2490
<i>Jingxing Feng</i>	
<b>W01-257 : INVESTIGATION OF DROPLET BEHAVIOR UNDER REAL MIXING CONDITIONS .....</b>	2495
<i>Oguz Celik</i>	
<b>W01-302 : INFLUENCE OF PROCESSING AND FORMULATION ON THE PROPERTIES OF PP-PET-BLENDS .....</b>	2500
<i>Christoph Burgstaller</i>	
<b>W01-517 : NYLON 12/PMMA/SAN ALLOYS FOR TRANSLUCENT MEDICAL CATHETERS.....</b>	2506
<i>Timothy Largier</i>	
<b>W01-531 : DESIGN OF EXTENSIONAL FLOW STATIC MIXERS FOR BLENDING OF TERNARY NANOPARTICLE-POLYMER-POLYMER BLENDS.....</b>	2509
<i>Matthew Thompson</i>	
<b>W02-139 : LOW BIREFRINGENT CELLULOSE ACETATE PROPIONATES FOR PLASTIC DISPLAY LENS COVERS .....</b>	2517
<i>Laura Weaver</i>	

VOLUME 4

<b>W02-218 : THE EVOLUTION &amp; CONTINUED GROWTH OF TPO APPLICATIONS.....</b>	2527
<i>Mark Barrera</i>	
<b>W02-304 : INTRODUCTION TO THE USAGE OF THERMALLY CONDUCTIVE COMPOUNDS IN AUTOMOTIVE LIGHTING .....</b>	2542
<i>Paul Kruger</i>	
<b>W02-387 : NEW RESIN FOR LIQUID COOLED MODULES IN ELECTRIC VEHICLE BATTERY PACKS (EVBPS) .....</b>	2549
<i>Rudy Gorny</i>	
<b>W02-652 : PLASTIC RESINS FOR SENSORS AND ELECTRONIC COMPONENTS TO MINIMIZE LONG TERM CORROSION.....</b>	2557
<i>Josh McIlvaine</i>	
<b>W02-653 : NEXT GENERATION IN HYDROLYSIS RESISTANCE POLYESTER (PBT) FOR ELECTRICAL CONNECTORS AND COMPONENTS .....</b>	2566
<i>Josh McIlvaine</i>	
<b>W03-110 : WHEAT PROTEIN AS A PARTICIPANT IN THE SULFUR-CURING OF ISOPRENE RUBBER .....</b>	2573
<i>Barbara Debutts</i>	
<b>W03-117 : STUDY OF BIOCOMPATIBILIZER FOR NEW RENEWABLE BLENDS OF POLYPROPYLENE CARBONATE AND POLYBUTYLENE SUCCINATE.....</b>	2579
<i>Barbara Calderon</i>	
<b>W03-349 : MECHANICAL PROPERTIES AND EFFECTS OF MICROFIBRILLATION OF 100 % BIOMASS SISAL-PLA COMPOSITE .....</b>	2585
<i>Hiroyuki Nishimura</i>	
<b>W03-373 : SYNTHESIS OF HIGH HARDNESS POLYESTER RESIN FOR POWDER COATINGS.....</b>	2592
<i>Junseop Im</i>	
<b>W03-408 : EFFECTS OF MOLDING CONDITIONS ON MECHANICAL BEHAVIOR OF DIRECT INJECTION MOLDED PLA/WOOD-FIBER COMPOSITES.....</b>	2597
<i>Gangjian Guo</i>	
<b>W03-620 : HIERARCHICAL MICRO/NANOSTRUCTURES OF POLY (LACTIC ACID) SCAFFOLDS FOR MEDICAL APPLICATIONS .....</b>	2602
<i>Shujie Yan</i>	
<b>W03-641 : PHYSICAL FOAMING USING HIGH PRESSURE GAS SATURATION FOR BIOPOLYMER APPLICATIONS.....</b>	2608
<i>Juan Fernando Campuzano Vallejo</i>	
<b>W04-094 : DEVELOPMENT OF A RAPID THERMAL CYCLING BLOW MOLDING TECHNOLOGY AND MOLD HEATING SYSTEM OPTIMIZATION .....</b>	2613
<i>Cheng-Long Xiao</i>	
<b>W04-203 : SIMULATIVE PREFORM OPTIMIZATION FOR IMPROVED TOPLOAD BEHAVIOR OF PET-BOTTLES MANUFACTURED IN THE TWO STAGE STRETCH BLOW MOLDING PROCESS.....</b>	2619
<i>Benjamin Twardowski</i>	
<b>W04-274 : EBM WITH A #1 .....</b>	2625
<i>Scott Steele</i>	
<b>W04-389 : A SIMULATION FRAMEWORK FOR BLOW-MOLDING: A PRELIMINARY CASE STUDY ON INJECTION STRETCH BLOW MOLDING FOR BULB COVERS .....</b>	2627
<i>Raghavendra Janiwarad</i>	
<b>W04-711 : NUMERICAL SIMULATION OF SHRINKAGE AND WARPAGE DEFORMATION OF AN INTERMITTENT-EXTRUSION BLOW MOLDED PART: VALIDATION CASE STUDY.....</b>	2635
<i>Zohir Benrabah</i>	
<b>W05-489 : FLOW PROBLEMS THAT COULD ARISE FROM ADDING BIOMASS MATERIALS TO PLASTICS.....</b>	2644
<i>Carrie Hartford</i>	
<b>W05-495 : PREDICTION OF FIBER REINFORCED PLASTICS CONSIDERING LOCAL FIBER LENGTH AND ORIENTATION .....</b>	2649
<i>Fabian Willems</i>	
<b>W05-520 : CRYSTALLIZATION MECHANISM OF POLYVINYLIDENE FLUORIDE VIA NON- ISOTHERMAL CRYSTALLIZATION AND SUPERCRITICAL CO2 PROCESSING .....</b>	2656
<i>Ji Eun Lee</i>	

<b>W05-577 : PRACTICAL SIMULATION OF LIQUID CRYSTAL POLYMER DIRECTIONALITY DURING PROCESSING</b> .....	2661
<i>Anthony Sullivan</i>	
<b>W05-584 : MACROMOLECULAR SPECTROSCOPY FOR DETERMINING MECHANICAL PROPERTIES OF POLYDIMETHYLSILOXANE (PDMS)</b> .....	2667
<i>Ahmed Anwer</i>	
<b>W05-680 : FOAM STRUCTURE AND THERMAL COMFORT IN POLYURETHANE MATTRESS FOAMS</b> .....	2671
<i>Douglas Brune</i>	
<b>W05-713 : ROTOMOLDING PROCESSES FOR POLY(ARYL KETONES) AND OTHER HIGH TEMPERATURE POLYMERS</b> .....	2676
<i>Manuel Garcia-Leiner</i>	
<b>W06-252 : EFFECT OF DIE EXIT STRESS STATE, DEBORAH NUMBER AND EXTENSIONAL RHEOLOGY ON NECK-IN PHENOMENON</b> .....	2681
<i>Martin Zatloukal</i>	
<b>W06-485 : ROLE OF INTERFACIAL CRYSTALLIZATION IN DESIGNING POLYOLEFIN BLENDS FROM MIXED STREAM RECYCLE FEEDS</b> .....	2689
<i>Alex Jordan</i>	
<b>W06-512 : EVALUATION OF THERMOPLASTIC POLYURETHANE (TPU) RESINS AS POSSIBLE SUBSTITUTES OF CURRENT RESINS FOR ESCALATOR HANDRAILS</b> .....	2692
<i>Qingping Guo</i>	
<b>W06-630 : PRELIMINARY STUDY OF BIREFRINGENCE DISTRIBUTION IN BLOWN FILM</b> .....	2697
<i>Jin Wang</i>	
<b>W06-647 : ENERGY GAP METHOD (EGM) APPLIED TO IMPROVE EXTRUSION ENERGY PERFORMANCE: SUCCESSFUL CASE STUDIES</b> .....	2704
<i>Juan Carlos Ortiz Pimienta</i>	
<b>W06-702 : MICRO-LAYERED TUBING AND PIPES VIA MULTI-LAYER CO-EXTRUSION</b> .....	2711
<i>Tyler Schneider</i>	
<b>W07-289 : AUXETIC FOAM SENSOR WITH SILVER NANOWIRE</b> .....	2716
<i>Changchun Zeng</i>	
<b>W07-296 : PIEZOELECTRIC FOAMS WITH HIGH THERMAL STABILITY AND FLEXIBILITY</b> .....	2721
<i>Changchun Zeng</i>	
<b>W07-601 : ENHANCING ELECTROMAGNETIC SHIELDING PERFORMANCE OF PVDF/MWCNT COMPOSITES THROUGH FOAMING</b> .....	2728
<i>Chenyinxia Zuo</i>	
<b>W07-605 : AEROGEL NANO-NETWORK STRUCTURAL ASSEMBLY AND ITS CORRELATION WITH THE THERMAL PROPERTIES</b> .....	2732
<i>Mohammed Alshrah</i>	
<b>W07-634 : POLY(VINYLDENE FLUORIDE)/ GRAPHENE NANOPATELETS COMPOSITES WITH MICROCELLULAR STRUCTURE TO ENHANCE ELECTROMAGNETIC SHIELDING PROPERTIES</b> .....	2746
<i>Biao Zhao</i>	
<b>W08-015 : INOVIA FLAME RETARDANTS BASED ON IONIC LIQUIDS</b> .....	2758
<i>Yanjie "Jeff" Xu</i>	
<b>W08-229 : SURFACE ENHANCEMENT VIA POLYPROPYLENE METALLIC COMPOUNDS</b> .....	2762
<i>Tanmay Pathak</i>	
<b>W08-292 : NOVEL APPROACH TO CONTROLLED MIGRATION OF ANTIFOG ADDITIVES IN MULTILAYER PACKAGING FILMS</b> .....	2776
<i>Evgeni Zelikman</i>	
<b>W08-323 : NEW TECHNOLOGY FOR IMPROVING HALOGEN FREE FLAME RETARDANT PERFORMANCE IN POLYMER APPLICATION</b> .....	2788
<i>Ido Offenbach</i>	
<b>W08-369 : TUBALL™ SINGLE WALL CARBON NANOTUBES FOR THERMOPLASTICS</b> .....	2803
<i>Maus Christian</i>	
<b>W08-378 : A NOVEL SYNERGIST FOR HALOGEN FREE FLAME RETARDANTS</b> .....	2806
<i>Amit Paul</i>	
<b>W09-167 : THERMO-RHEOLOGICAL MODELING AND SIMULATION OF HEAT SEALING PROCESS FOR MULTI-LAYER FLEXIBLE PACKAGING APPLICATIONS</b> .....	2817
<i>Vinod Kumar Konaganti</i>	
<b>W09-239 : HEAT TRANSFER MODELLING IN MULTILAYER FILMS USED FOR FLEXIBLE PACKAGING</b> .....	2825
<i>Dan Ward</i>	

<b>W09-288 : BARRIER MATERIALS HAVING LAYER-LIKE MORPHOLOGY FOR PACKAGING USE:EXTRUDED FILM AND ORIENTED FILM.....</b>	2831
<i>Guojun Zhang</i>	
<b>W10-226 : ELASTIC RECOVERY AND ACTUATION IN POLYOLEFIN THERMOPLASTIC ELASTOMERS .....</b>	2836
<i>Justin Barone</i>	
<b>W10-660 : FROM RECYCLED TIRES TO PLASTIC PARTS: MICRONIZED RECYCLED RUBBERS IN THERMOPLASTIC POLYOLEFINS .....</b>	2840
<i>Haikun Xu</i>	
<b>W10-714 : SHIFTING MARKETPLACE DYNAMICS AND POSITIONING TPES FOR FUTURE PROFITABILITY, DIVERSIFICATION AND GROWTH.....</b>	2846
<i>Robert Eller</i>	
<b>W11-133 : A CLOSED FORM SOLUTION FOR PREDICTING FINAL PART STRENGTH OF FUSED DEPOSITION MODELING.....</b>	2851
<i>Steven Devlin</i>	
<b>W11-200 : 3D PRINTED METAL TOOL FOR EFFICIENT INJECTION MOLDING.....</b>	2857
<i>N. Venkatesha</i>	
<b>W11-350 : 3D PRINTING PROCESS SIMULATIONS AND THEIR APPLICATIONS.....</b>	2876
<i>Prasad Dasappa</i>	
<b>W11-364 : MATERIAL SELECTION, TESTING AND VALIDATION OF ADDITIVELY MANUFACTURED COMPONENTS .....</b>	2882
<i>Johannes Wiener</i>	
<b>W11-405 : CRITICAL CAPILLARY NUMBER IN A HYPERBOLIC CONVERGING NOZZLE FOR POLYMER BASED ADDITIVE MANUFACTURING .....</b>	2886
<i>Aditya N Sangli</i>	
<b>W11-467 : PROCESS IMPACT OF ELLIPTIC SMOOTHNESS AND POWDER SHAPE FACTORS ON ADDITIVE MANUFACTURING WITH LASER SINTERING.....</b>	2893
<i>Marc Vetterli</i>	
<b>W11-473 : FUNDAMENTAL CHARACTERIZATION OF CLIP 3D PRINTED MATERIALS .....</b>	2901
<i>Danielle L. Grolman</i>	
<b>W11-521 : CHARACTERIZATION AND MECHANICAL BEHAVIOR OF SLS PROCESSES PA-11/CB NANOCOMPOSITES .....</b>	2905
<i>Gabrielle Esposito</i>	
<b>W11-522 : INVESTIGATION OF SELECTIVE LASER SINTERING PARAMETERS ON THE TENSILE PROPERTIES OF POLYAMIDE-11 .....</b>	2910
<i>Gabrielle Esposito</i>	
<b>W11-540 : INVESTIGATION OF A NOVEL ADDITIVE MANUFACTURING TECHNIQUE “4D-RHEOPRINTING” FOR THE MANUFACTURE OF ENHANCED POLYMERIC PRODUCTS .....</b>	2914
<i>Alaauldeen Duhduh</i>	
<b>W11-637 : 3D PRINTED TOOLING SOLUTIONS .....</b>	2919
<i>Venkatesha N</i>	
<b>W12-128 : RHEOLOGY OF POLYMER NANOCOMPOSITES.....</b>	2927
<i>Avraam I. Isayev</i>	
<b>W12-144 : THE IMPORTANCE OF HOW ONLINE RHEOMETERS ACCURATELY INDICATE MELT FLOW RATE IN AN EXTRUDER.....</b>	2928
<i>Catherine Lindquist</i>	
<b>W12-198 : INVESTIGATION ON THE VISCOSITY CHARACTERIZATION OF THE GLASS MAT THERMOPLASTICS (GMT) IN COMPRESSION MOLDING SYSTEM.....</b>	2937
<i>Chien Tse-Yu</i>	
<b>W12-264 : VISUALIZATION OF THE FLOW PATHS IN A TANGENTIAL INTERNAL MIXER TO OPTIMIZE THE MIXING BEHAVIOR.....</b>	2943
<i>Annika Lipski</i>	
<b>W12-416 : RHEOLOGICAL METHOD DEVELOPMENT: POLYMER DESIGNS FOR BLOW-MOLDED, AUTOMOTIVE SEATBACKS .....</b>	2949
<i>Mary Ann Jones</i>	
<b>W12-474 : ROOT CAUSE ANALYSIS OF POLYOLEFIN-BASED WIRE AND CABLE FORMULATION DIE BUILD-UP .....</b>	2955
<i>Kurt Koppi</i>	
<b>W12-564 : MODIFICATION OF RHEOLOGICAL AND CRYSTALLIZATION PROPERTIES OF HIGH PERFORMANCE POLYMERS FOR THERMOPLASTIC COMPOSITE APPLICATIONS .....</b>	2959
<i>Sarah Morgan</i>	

<b>W12-570 : THE EFFECTS OF METAL STEARATES ON THE RHEOLOGICAL PROPERTIES OF POWDER INJECTION MOLDING FEEDSTOCKS AND RESULTING MOLDED GREEN PARTS.....</b>	2962
<i>Michael Shone</i>	
<b>W12-573 : A MECHANISTIC MODEL FOR NANOCAVITY FILLING.....</b>	2967
<i>Donggang Yao</i>	
<b>W13-061 : GEOMETRICAL EFFECTS ON FIBER MICRO-STRUCTURE VARIATIONS AND THE INFLUENCES ON LONG FIBER REINFORCED THERMOPLASTICS (FRT) PARTS .....</b>	2972
<i>Chao-Tsai Huang</i>	
<b>W13-113 : FUNDAMENTAL UNDERSTANDING OF TRIBOLOGICAL BEHAVIOR OF MULTIPHASE POLYMERIC SYSTEMS USING FEM MODELING.....</b>	2978
<i>Mohammad Hossain</i>	
<b>W13-135 : EXPERIMENTAL VERIFICATION ON MOLDEX3D FIBER ORIENTATION PREDICTION IN HIGH FIBER CONCENTRATIONS.....</b>	2985
<i>Huan-Chang Tseng</i>	
<b>W13-247 : AN INVESTIGATION OF RHEOLOGICAL PROPERTIES OF POLYPROPYLENE SINGLE-POLYMER COMPOSITES .....</b>	2990
<i>Mingxing Yu</i>	
<b>W13-270 : SUPPRESSION OF NECKING IN LLDPE/SEPS RUBBER BILAYER LAMINATES.....</b>	2994
<i>Sachin Velankar</i>	
<b>W13-347 : HIGH CONFIDENCE PERFORMANCE PREDICTIONS FOR HYBRID THERMOPLASTIC COMPOSITE APPLICATIONS.....</b>	3000
<i>Subhransu Mohapatra</i>	
<b>W13-384 : STUDY ON AN OPTICAL EVALUATION OF SURFACE ADHESION IN THE MULTILAYER INJECTION MOLDING PROCESS.....</b>	3005
<i>Bongju Kim</i>	
<b>W13-444 : DRAPING BEHAVIOR OF UNI-DIRECTIONAL TAPE LAMINATES – EXPERIMENTAL AND NUMERICAL STUDIES .....</b>	3010
<i>Sandeep Kulkarni</i>	
<b>W13-510 : IN-SITU SYNTHESIS OF POLY(ETHYLENE TEREPHTHALATE) GRAPHENE NANOCOMPOSITES.....</b>	3019
<i>Vahid Shabafrooz</i>	
<b>W13-514 : VIRTUAL CHARACTERIZATION OF PREPREG PLATELET LENGTH EFFECT ON TENSILE PROPERTIES OF COUPONS WITH STOCHASTIC MORPHOLOGY.....</b>	3026
<i>Sergey Kravchenko</i>	
<b>W14-129 : THERMAL CONDUCTIVITY ENHANCEMENT THROUGH STRETCHING OF POLYETHYLENE-GRAPHENE NANOCOMPOSITES .....</b>	3033
<i>Brian Grady</i>	
<b>W14-178 : NUMERICAL MODELLING OF COMPLEX PARISON AND SHEET FORMATION IN BLOW MOLDING PROCESSES USING BLOWVIEW SOFTWARE .....</b>	3034
<i>Zohir Benrabah</i>	
<b>W14-281 : PROCESSING PARAMETERS EFFECT ON BARRIER PROPERTIES OF NITRILE BASED NANOCOMPOSITE MEMBRANE.....</b>	3035
<i>Mohamed Zemzem</i>	
<b>W14-425 : SYNERGISTIC REINFORCING AND TOUGHENING HIGH DENSITY POLYETHYLENE BY INTRODUCING DYNAMIC SHEAR FORCE FIELD AND ULTRAHIGH MOLECULAR WEIGHT POLYETHYLENE.....</b>	3041
<i>Tong Liu</i>	
<b>W14-472 : EXPLOITING CAPILLARY FORCES IN FILLED PLASTICS: ELECTRICALLY CONDUCTIVE PLASTICS BY BONDING COPPER FILLER WITH MOLTEN SOLDER .....</b>	3045
<i>Sachin Velankar</i>	
<b>W14-501 : CHARACTERIZATION OF SCRATCH BEHAVIORS OF MULTILAYER AUTOMOTIVE COATINGS FOR VARIOUS SCRATCH CONDITIONS.....</b>	3050
<i>Sung Wook Moon</i>	
<b>W14-554 : BIOMIMETIC NANOCOATINGS WITH EXCEPTIONAL MECHANICAL, BARRIER, AND FLAME RETARDANT PROPERTIES FROM LARGE SCALE ONE-STEP CO-ASSEMBLY.....</b>	3054
<i>Jingjing Liu</i>	
<b>W14-581 : EFFECTS OF EXTRUDER SCREW CONFIGURATION ON THERMAL PROPERTIES OF GLASS FIBER REINFORCED POLYAMIDE 6 COMPOSITES THROUGHOUT THE DIRECT LONG-FIBER-REINFORCED THERMOPLASTICS PROCESS.....</b>	3055
<i>Takashi Kuboki</i>	

<b>W14-616 : ARCHITECTURE OF MICRO- AND NANO-LAYER STRUCTURE AND ITS FUNCTIONAL PROPERTIES OF POLYMERS .....</b>	<b>3062</b>
<i>Shaoyun Guo</i>	
<b>W14-712 : MICROCAPILLARY FILM MEMBRANES BASED ON POLYVINYLIDENE FLUORIDE .....</b>	<b>3063</b>
<i>Gerald Billoviits</i>	
<b>W15-006 : OPTIMIZING FLUTED MIXERS.....</b>	<b>3070</b>
<i>John Perdikoulis</i>	
<b>W15-065 : MODELLING THE CONTAMINATION BEHAVIOR OF POLYMER MELT FILTERS AND PRESSURE LOSS SIMULATIONS OF FILTRATION MEDIA .....</b>	<b>3075</b>
<i>Peter Meilwes</i>	
<b>W15-175 : EXPERIMENTAL STUDY ON THE MELT ENCAPSULATION: AN ANALYSIS OF DIE PRESSURE AND REARRANGEMENT EFFECTS.....</b>	<b>3081</b>
<i>Christopher Höfs</i>	
<b>W15-179 : THE EFFECT OF CHANNEL CURVATURE ON THE FLOW RATE AND VISCOUS DISSIPATION OF POWER-LAW FLUIDS.....</b>	<b>3087</b>
<i>Wolfgang Roland</i>	
<b>W15-206 : A HEURISTIC MODEL FOR PREDICTING THREE-DIMENSIONAL NON-NEWTONIAN FLOWS IN METERING CHANNELS .....</b>	<b>3094</b>
<i>Christian Marschik</i>	
<b>W15-237 : UNIFIED SIMULATION OF EXTRUDATE DISTORTION DUE TO NON-UNIFORM EXIT VELOCITY AND COOLING SHRINKAGE .....</b>	<b>3100</b>
<i>Mahesh Gupta</i>	
<b>W15-255 : MODELING THE OPERATING PERFORMANCE OF MELT FILTRATION IN POLYMER RECYCLING.....</b>	<b>3105</b>
<i>Sophie Pachner</i>	
<b>W15-269 : MODELING OF A SIMPLE NUMERICAL CALCULATION METHODOLOGY TO IMPLEMENT CROSS FLOWS IN EXTRUSION DIE DESIGN BASED ON NETWORK THEORY.....</b>	<b>3110</b>
<i>Bianka Jacobkersting</i>	
<b>W16-180 : USING MAGNETO-ARCHIMEDES LEVITATION FOR NON-INVASIVE CHARACTERIZATION OF INJECTION MOLDED PARTS .....</b>	<b>3115</b>
<i>Peng Zhao</i>	
<b>W16-195 : MULTILAYER INJECTION MOLDING OF THICK-WALLED OPTICS USING DYNAMIC MOLD TEMPERING AND OPTIMIZED LAYER THICKNESS DISTRIBUTION .....</b>	<b>3120</b>
<i>Malte Röbig</i>	
<b>W16-259 : INFLATION BEHAVIOR OF PREFORMS IN THE SPECIAL INJECTION MOLDING PROCESS GITBLOW COMBINING GAS ASSISTED INJECTION MOLDING AND BLOW MOLDING .....</b>	<b>3124</b>
<i>Björn Landgräber</i>	
<b>W16-335 : VERIFICATION OF NUMERICAL AND PRACTICAL APPROACH IN IMPLEMENTING PVT PROPERTIES OF POLYMER TO CONTROL TO CONTROL SHRINKAGE QUALITY OF MOLDED .....</b>	<b>3131</b>
<i>Tzu-Hsiang Wei</i>	
<b>W16-353 : EFFECT OF INJECTION MOLDING CONDITION ON MOLD ADHESION DURING THERMOPLASTIC POLYURETHANE INJECTION MOLDING.....</b>	<b>3138</b>
<i>Jian-Yu Chen</i>	
<b>W16-368 : ZERO DEFECT MANUFACTURING IN INJECTION COMPRESSION MOLDING OF POLYMER FRESNEL LENSES .....</b>	<b>3145</b>
<i>Dario Loaldi</i>	
<b>W16-382 : 3D SURFACE CHARACTERIZATION OF ETCHED, INJECTION MOLDED PARTS BEFORE A FOLLOW UP ELECTROPLATING PROCESS .....</b>	<b>3150</b>
<i>Jens P. Siepmann</i>	
<b>W16-395 : STABILIZATION OF BMC INJECTION MOLDING BY PROCESS CONTROL MEASURES.....</b>	<b>3155</b>
<i>Nicolina Topic</i>	
<b>W16-430 : AUTOMATIC ANOMALY DETECTION AND ROOT CAUSE ANALYSIS FOR HOLISTIC PROCESS MONITORING AND CONTROL IN INJECTION MOLDING .....</b>	<b>3162</b>
<i>Alexander Schulze Struchtrup</i>	
<b>W17-106 : ACCELERATED AGING OF MEDICAL-GRADE RESINS: Q10 FACTORS AND MATERIAL AGING MODELS.....</b>	<b>3167</b>
<i>Rob Klein</i>	



<b>W17-154 : EFFECTS OF THE BIOLOGICAL ENVIRONMENT ON THERMOPLASTIC POLYURETHANES .....</b>	<b>3172</b>
<i>Ajay Padsalgikar</i>	
<b>W17-456 : ACCOUNTING FOR DIFFERENCES IN MODULUS AND STRESS RELAXATION BEHAVIOR IN PLASTICS UNDERGOING CHEMICAL RESISTANCE TESTING .....</b>	<b>3178</b>
<i>Mark Yeager</i>	
<b>W17-602 : SYSTEMS ENGINEERING FOR MEDICAL DEVICE DEVELOPMENT: APPLICATION TO INSULIN PUMPS .....</b>	<b>3183</b>
<i>Marc Horner</i>	
<b>W17-631 : DEGRADATION PRODUCTS OF MEDICAL DEVICES IN COMPLEX BIOLOGICAL ENVIRONMENTS: RISK ASSESSMENT STRATEGIES .....</b>	<b>3188</b>
<i>Adam Kozak</i>	
<b>W17-636 : THE REGULATION OF MICRO-SUPER-HYDROPHOBIC SILICONE RUBBER TO THE BEHAVIOR OF HUMAN LENS EPITHELIAL CELLS .....</b>	<b>3204</b>
<i>Liuxueying Zhong</i>	
<b>W17-688 : SUPERCRITICAL CARBON DIOXIDE ASSISTED EXTRUSION OF GRAPHENE NANOFILLER REINFORCED POLYMERS FOR BIOMEDICAL APPLICATIONS .....</b>	<b>3213</b>
<i>Austin Coffey</i>	
<b>W17-689 : NEW GENERATION PHARMACEUTICAL PACKAGING SOLUTIONS .....</b>	<b>3220</b>
<i>Prakash Iyer</i>	
<b>W18-112 : 3D LINE CONFOCAL IMAGING: NEW HIGH-RESOLUTION SENSOR TECHNOLOGY FOR CHALLENGING ONLINE &amp; OFFLINE PLASTIC MEASUREMENT APPLICATIONS .....</b>	<b>3229</b>
<i>Juha Saily</i>	
<b>W18-216 : LABORATORY WEATHERING FOR PLASTICS .....</b>	<b>3252</b>
<i>Andy Francis</i>	
<b>W18-217 : LEVERAGING ADVANCED EDGE ANALYTICS FOR IMPROVED FAULT DETECTION IN DISCRETE MANUFACTURING PROCESSES .....</b>	<b>3275</b>
<i>Andrew Wilson</i>	
<b>W18-224 : ACCELERATED WEATHERING INSIGHTS INTO ASA POLYMER UV RESISTANCE: XENON VS QUV VS FLORIDA AND ARIZONA .....</b>	<b>3291</b>
<i>Steven Blazey</i>	
<b>W18-317 : CHARACTERIZATION OF CURE OF POLYMERIC MATERIAL BY DIELECTRIC ANALYSIS (DEA) .....</b>	<b>3304</b>
<i>Yanxi Zhang</i>	
<b>W18-429 : THE NEW DISCOVERY DMA850 FROM TA INSTRUMENTS .....</b>	<b>3321</b>
<i>Greg Kamykowski</i>	
<b>W18-438 : 75% OF ERP FAIL - HOW TO AVOID IT .....</b>	<b>3340</b>
<i>Pierre Maillet</i>	
<b>W18-439 : OPTICAL METROLOGY FOR STRESS DETERMINATION .....</b>	<b>3348</b>
<i>Steven Danyluk</i>	
<b>W20-066 : FILM TECHNOLOGIES FOR ADVANCING BUILDING SKIN FEATURES .....</b>	<b>3359</b>
<i>Sebastian Zehentmaier</i>	
<b>W20-250 : CORROSION INHIBITION MODEL FOR ALUMINIUM BY SODIUM CABOXY METHYL CELLULOSE (POLYMER) IN ACIDIC SOLUTION .....</b>	<b>3360</b>
<i>Macdenis Egbuhuzor</i>	
<b>Author Index</b>	