

TAPPI Press

# TAPPI PLACE CONFERENCE 2007

**“Polymers, Laminations, Adhesives,  
Coatings, Extrusions”**

September 16-20, 2007  
St. Louis, Missouri, USA

Volume 1 of 3

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571  
[www.proceedings.com](http://www.proceedings.com)

ISBN: 978-1-60560-062-8

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

TAPPI Press

TAPPI PLACE CONFERENCE  
2007

## TABLE OF CONTENTS

### VOLUME 1

<b>Additives Primer Blown Films, Cast Films &amp; Extrusion Coating</b> .....	1
<i>P. Patel</i>	
<b>The Theory and Practice of Extruder System Purging</b> .....	28
<i>J. Vansant</i>	
<b>Gel Troubleshooting</b> .....	50
<i>L. Piffer</i>	
<b>Troubleshooting Corona Treatment Issues</b> .....	107
<i>R. Wolf</i>	
<b>Optimizing the Shear Slitting Process Summary</b> .....	164
<i>P. Wood</i>	
<b>Metal Adhesion to PET Film</b> .....	243
<i>E. Culbertson</i>	
<b>Nano-Composite Polymer Optical Coatings</b> .....	269
<i>T. Faris</i>	
<b>Basics of Web Tension Control Summary</b> .....	292
<i>D. Whiteside</i>	
<b>Challenges in Winding Flexible Packaging Film</b> .....	315
<i>D. Smith</i>	
<b>Permeation and Measurement Techniques</b> .....	393
<i>J. Fischer</i>	
<b>Active Packaging</b> .....	442
<i>T. Powers</i>	
<b>Determining the Processability of Multilayer Coextruded Structures</b> .....	480
<i>J. Dooley</i>	
<b>Effect of Material Properties and Processing Conditions on PP Film Casting</b> .....	555
<i>K. Aniunoh, G. Harrison</i>	

### VOLUME 2

<b>Flow Surging in Single-Screw, Plasticating Extruders</b> .....	600
<i>M. Spalding J. Powers, P. Wagner, K. Hyun</i>	

<b>Use of Dimensionless Numbers in Analyzing Melt Flow and Melt Cooling Processes</b> .....	647
<i>N. Rao, R. Shastri</i>	
<b>New Thin Film Single Screw Venting Mechanism Tested on 30% Wood Flour/Pellet, 35% Calcium Carbonate/PP Pellets and Undried PMMA</b> .....	699
<i>K. Luker</i>	
<b>What We Know (That Just Isn't So) - Myth Busting in Web Handling</b> .....	788
<i>D. Roisum</i>	
<b>Using Eco-Efficiency Analysis to Measure the Sustainability of Packaging Materials</b> .....	815
<i>C. Bradlee</i>	
<b>Biodegradable Flexible Packaging</b> .....	832
<i>S. Richards</i>	
<b>Case Studies for Improved Sustainability in Packaging</b> .....	858
<i>J. Wooster, J. Nuttall</i>	
<b>Modifying Surface Features</b> .....	881
<i>R. Wolf, A. Sparavigna</i>	
<b>A Model to Predict the Ability of a Flexible Package to Contain Materials</b> .....	905
<i>R. Allen, T. Cheng</i>	
<b>Understanding Why Adhesion in Extrusion Coating Decreases with Diminishing Coating Thickness, Part III: Analysis of Peel Test</b> .....	934
<i>B. Morris</i>	
<b>Flame Plasma Surface Treating - What's it All About</b> .....	967
<i>J. DiGiacomo</i>	
<b>Using DNA to Prevent Counterfeiting and Product Diversion</b> .....	1036
<i>J. Hayward</i>	
<b>General Overview of Overt &amp; Covert Security Features for Brand Protection in Inks and Coatings</b> .....	1072
<i>R. Vig</i>	
<b>Enhancing Productivity in Blown Film: A New Perspective on Additive Interactions and Optimizing Polymer Processing Additive Efficiency through Process Parameters</b> .....	1095
<i>P. Neumann</i>	
<b>A Novel Nucleating Agent for Polyethylene</b> .....	1138
<i>D. Dotson</i>	
<b>Phenol vs. Phenol Free Stabilization and the Impact of Selected Grades of TiO<sub>2</sub></b> .....	1153
<i>Y. Ye, R. King III, P. Patel</i>	
<b>Control of Dispersed Polymer Domain Size Formation in Melt Processing</b> .....	1198
<i>E. Mount III</i>	

### VOLUME 3

<b>PVDC - Past and Current Barrier Material</b> .....	1203
<i>T. Mueller</i>	

<b>PVDC - New Developments, New Opportunities</b> .....	1238
<i>K. Paisley</i>	
<b>Clear Barrier at Atmospheric Pressure - The Second Phase</b> .....	1271
<i>R. Wolf</i>	
<b>Oxygen Permeability Enhancements in Octene LLDPE Film Affected by LDPE Blending and Crystalline Orientation Changes</b> .....	1277
<i>D. Ward, J. Teh, K. Ho, J. Marler, N. Aubee</i>	
<b>High Speed Priming</b> .....	1315
<i>L. Ostness</i>	
<b>Internally Deckled Coating Dies</b> .....	1342
<i>G. Oliver</i>	
<b>Solving Adhesion and Die Buildup Problems in Extrusion Coating</b> .....	1373
<i>B. Foster</i>	
<b>The Effect of Barrier Materials on Salmon Quality and Retort Pouch Properties Stored Under Elevated Conditions</b> .....	1397
<i>Y. Byun, S. Whiteside</i>	
<b>Barrier Coatings of Bio Films</b> .....	1424
<i>R. Cooper</i>	
<b>One-Side Clear Active Barrier Packaging for Moisture Sensitive Medical Devices</b> .....	1460
<i>L. Murray Sr., R. Johnson, J. Sikorsky Sr., R. Merical</i>	
<b>Medium Performance Acrylic Waterborne Laminating Adhesives</b> .....	1476
<i>T. Mueller</i>	
<b>Product Safety and Security</b> .....	1522
<i>G. Armstrong</i>	
<b>Have you Checked your Hazzard Analysis Lately?</b> .....	1536
<i>S. Matuszewski</i>	
<b>GMA - SAFE Audit</b> .....	1555
<i>G. Armstrong</i>	
<b>Some of the Important Design Requirements of a Machine Direction Orientor (MDO) Machine</b> .....	1593
<i>E. Hatfield</i>	
<b>Economic Benefits of Utilizing MDO Films in Flexible Packaging</b> .....	1626
<i>R. Breese</i>	
<b>Higher Tie Layer Adhesion in Machine Direction Oriented (MDO) Barrier Films</b> .....	1649
<i>C. Lee, J. Strebel, J. Goudelock</i>	
<b>Optimisation of Production Output and Film Quality from Blown Film Extrusion Systems</b> .....	1682
<i>M. Andrews</i>	
<b>Polypropylene - Building Blocks for Blown Film Applications</b> .....	1687
<i>S. Hirata, G. Nagarajan</i>	
<b>New Transparent High-Barrier Film for Advanced Retort Applications</b> .....	1764
<i>T. Oshita</i>	
<b>Nylon Nanocomposites in Flexible Packaging Applications</b> .....	1795
<i>Y. Liang</i>	
<b>Author Index</b>	