

Troubleshooting Extrusion Seminar, Nov 13-14, 2008

Requirements for efficient troubleshooting

- Instrumentation
- Understanding the process
- Collection of historical data •Condition of the equipment
- Information on the feedstock

Tools for troubleshooting

- Temperature measurement devices
- Data acquisition systems
- Microscopy
- Thermochromic materials
- Thermal analysis

Systematic troubleshooting •Upsets versus development problems

- Troubleshooting techniques
- Brainstorming sessions
- Flow charts
- Fishbone diagrams
- Machine related problems
- The drive system
- The feed system
- The heating and cooling system
- Screw binding
- Mechanism of screw binding
- Solving screw binding problems

Polymer degradation

- Thermal degradation
- Mechanical degradation
- Chemical degradation
- Effect temperature and residence time
- Melt temperatures in extrusion •Residence times in extrusion
- Solving degradation problems

Extrusion instabilities

- Frequency of instability
- High frequency instabilities
- Screw frequency instabilities
- Low frequency instabilities
- Very slow fluctuations
- Random fluctuations
- Functional instabilities
- Solids conveying problems
- Melting related problems
- Melt conveying problems
- Mixing related instabilities
- Solving extrusion instabilities

Air entrapment

- Mechanism of air entrapment
- Avoiding air entrapment
- Removing entrapped air

Gel problems

- How and where gels can be produced
- Gels created in polymerization
- Gels created in the extrusion process
- How to measure gels
- Solving gel problems

Die flow problems

- Melt fracture
- Die lip buildup
- V- or W-patterns
- Specks and discoloration
- Die lines and weld lines
- Coextrusion problems
- Solving die flow problem

Wear problems

- Corrosive wear
- Abrasive wear
- Misalignment
- Screw deflection
- Abrasive fillers
- Solving wear problems

Case studies

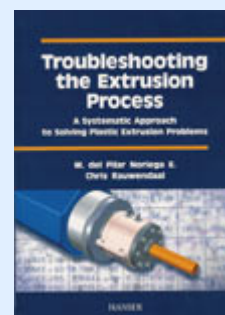
Attendees are encourage to bring actual extrusion problems to the seminar for a hands-on application of the material presented

Computer aided troubleshooting Demonstration of software designed to aid in troubleshooting extrusion problems

Melt conveying problems

“ *Troubleshooting the Extrusion Process* ” (TEP) by Maria Noriega and Chris Rauwendaal is available at a discounted price of \$65.00 when signing up for one of these seminars.

Location: Sheraton Sand Key
Clearwater Beach, FL
Rate \$169 till Oct 10, 1008
Call 727-595-1611 for hotel reservations and mention Rauwendaal Extrusion Seminars



The course fees are:	Prior to Oct 10	Oct 10-24	After Oct 24
Und & Opt Extrusion:	\$895.00	\$995.00	\$1095.00
Troubleshooting Extr:	\$650.00	\$750.00	\$850.00
Foam Extrusion:	\$895.00	\$995.00	\$1095.00
If taking 2 courses:	-\$100.00	-\$100.00	-\$100.00
3rd attendee discount:			
Understanding Book \$30.00			
Troubleshooting Book \$65.00			
Polymer Extrusion \$75.00			
Thermoplastic Foam Ext \$55.00			
Total:			

A 5% discount will be given for the 3rd and up attendees from the same company. The course fees include lunch for each day and the handout material.

Cancellations: A refund, less a \$100.00 cancellation fee, will be made if the registration is cancelled in writing by or on Oct 10, 2008. Rauwendaal Extrusion Engineering, Inc. reserves the right to cancel one or more seminars or substitute instructors. Should this occur the attendees will be notified. We do not take any responsibility for penalty fees or any other cost that may be incurred due to cancellation. We recommend that you book travel with refundable fares. Registrants who fail to attend are liable for the fees of the course registered for.

Fax registration to: 530-269-1084

Name:			
Title:			
Company:			
Billing Address:			
City:		State:	
Country:		Zip:	
Phone:			
E-Mail:			
Fax:			
Charge:	Visa <input type="checkbox"/>	MasterCard <input type="checkbox"/>	American Express <input type="checkbox"/>
PO # or CC #			Exp.: <input type="text"/>
			CVC: <input type="text"/>



10556 COMBIE RD P.M.B. 6677. AUBURN, CA 95602-8908
www.Rauwendaal.com Ph: 530-269-1082 Fx: 530-269-1084