

17 March 2008 (Monday)

07.30 - 08.30 Registration

Session 1 : Single Screw Extrusion I

Moderator : Dr. Chris Rauwendaal

08.30 – 09.30 **Keynote address: Melting Studies using a Device to Visualize In-line and Quantify the Polymer Melting in Plasticating Screw Machines**

Dr. Maria del Pilar Noriega
ICIPC, Colombia

09.30 – 10.00 **Latest Developments in High-Speed Extrusion**

Peter Rieg
Battenfeld Extrusionstechnik GmbH
Germany

10.00 – 10.30 **Troubleshooting the Extrusion Process - Using Statistics to Determine Root Cause**

Daniel Cykana
Bemis Contract Extrusion, USA

10.30 – 11.00 **COFFEE BREAK**

11.00 – 11.30 **Adjustable Flow Channel Geometry - the Future in Extrusion Die Design**

Dr. Heinz Gross
Kunststoff-Verfahrenstechnik
Germany

11.30 – 12.00 **Development of a Head Pressure Index**

Prof. Kirk Cantor,
Pennsylvania College of Technology, USA

12.00 – 14.00 **LUNCH BREAK**

Session 2 : Film & Sheet Extrusion

Moderator : Prof. Kirk Cantor

14.00 – 14.30 **Latest Developments in XPS Foam Sheet Extrusion**

Sunil Jain
Rajoo Engineers Ltd., India

14.30 – 15.00 **Choosing a PE Film Resin**

Prof. Ian Harrison
Penn State University, USA

15.00 – 15.30 **Blown Films for Packaging of Fresh Tropical Produce: Practical Method for Custom Engineered Breathable Plastic Films**

Dr. Wannee Chinsirikul
MTEC, Thailand

15.30 -16.00 **COFFEE BREAK**

16.00 -16.30 **Multi-layer Water Quenched Blown Film**

Philip Kwok
Brampton Engineering, Canada

16.30 – 17.00 **Advantages of Torque Motors in Blown Film Extrusion**

Dr. Flavio Sesia
Macchi S.P.A., Italy

17.00 – 17.30 **Extrusion Calendering Lines for PET, PC, PMMA, PP/PS - Trends and New Innovations**

Rupert Becker
SML Maschinengesellschaft GmbH
Austria

18.00 – 19.30 **Cocktail Dinner**

CONFERENCE PROGRAM

18 March 2008 (Tuesday)

Session 3 : Single Screw Extrusion II

Moderator : Prof. Kirk Cantor

08.30 – 09.30 **How to Achieve Stable and Efficient Extrusion**

Dr. Chris Rauwendaal
Rauwendaal Extrusion Engineering Inc.
USA

09.30 -10.00 **Centrifugal Force & Compressibility in Solids Conveying of Novel Screw Extruder**

Dr. Mingyin Jia
Beijing University of Chemical Technology, China

10.00 – 10.30 **Scale-up and Indices to Assess Mixing Performance in Extruders**

Professor José Covas
University do Minho, Portugal

10.30 – 11.00 **COFFEE BREAK**

11.00 – 11.30 **Barrels designed with Integral Feed Ports**

Tim Womer
Xaloy Inc, USA

11.30 – 12.00 **New Developments in Pipe Extrusion**

Rob Spekrijse
Rollepaal B.V., the Netherlands

12.00 – 14.00 **LUNCH BREAK**

Session 4 : Twin Screw Extrusion & Compounding

Moderator : Dr. Chris Rauwendaal

14.00 – 14.30 **Nexus Channel-F, a New Apparatus to Produce Fiber Reinforced Composites**

Dr. Giuseppe Ponzielli
RCT srl, Italy

14.30 – 15.00 **Twin Screw Extruders Used for Reactive Processing: Design and Applications**

Dr. Tadamoto Sakai
Japan Steel Works, Japan

15.00 – 15.30 **Technology Update on Twin-Screw Extrusion : Geometry Unraveled**

Dr. Babu Padmanabhan
Steer Ltd, India

15.30 – 16.00 **COFFEE BREAK**

16.00 -16.30 **Twin Screw Extrusion - Advances for Compounding, Devolatilization, and Direct Extrusion**

Charlie Martin
Leistritz North America, USA

16.30 – 17.00 **New Process and Materials Developments in Pelletizing Equipment**

George Holmes
CROWN/CDL Technology Inc, USA

17.00 – 18.00 **Round Table Discussion**

Remark : the conference organizer reserves the right to modify or change the program if necessary

<http://www.plasticextrusionasia.com>

Profile Extrusion

(19 March 2008, Century Park Hotel, Bangkok)

Course Instructor : Mr. Daniel Cykana
Director of Extrusion Engineering
Bemis Manufacturing Co., USA

COURSE OUTLINE:

1. **Introduction** (Markets served, Materials for Profile extrusion)
2. **Extrusion Line Layout** (Extruder requirement, Ancillary equipment)
3. **Part Design Considerations - Profile Die Design** (Types of profile dies, Drawdown ratios, Critical design parameters)
4. **Sizing** (Cooling, Differential sizing, Calibration)
5. **Processing** (intermediate to advanced)
6. **Troubleshooting** (Profile extrusion process problems)

Daniel Cykana is the Director of Engineering- Extrusion for the E&CT (Extrusion and Component Technologies) Division of Bemis Manufacturing Company where he mentors the Engineering and technical staff in Die Design, New Product Development, Advanced Technology and Processing. Daniel has dedicated his career to plastics processing, primarily extrusion, which spans 42 years. The first third of his career (14 years) was with Northland Plastics where he was a Development Technician, then Plant Manager and finally Director of Manufacturing. The last 29 years (1978-2007) at Bemis Manufacturing he moved from Technical Development Manager, to Engineering Manager to Director of Engineering. Daniel is a Senior Member in the Society of Plastics Engineers for the past 25 years. For the past 10 years he served as a Director of the Extrusion Board of Directors. In 2004 he was TPC (Technical Program Chair), and Chair of the Extrusion Division Board of Directors 2005-2006. In 2006 he was appointed to the SPE Executive Committee for a three-year term. Dan has held numerous Chair positions while serving on the Board of Directors, International Chair, Seminars Chair, Honored Service Chair, and PROCON Chair. As a frequent speaker for the SPE, Daniel also gives Processing Seminars for the SPE and assists Dr. Chris Rauwendaal in his seminars sessions. Daniel has published numerous articles, as well as being a contributing author to The Extrusion Process and Troubleshooting Guide.

Dr. Chris Rauwendaal - the President of Rauwendaal Extrusion Engineering Inc., USA since 1990. He was previously with American Enka Company and Raychem Corporation. Chris received a M.Sc from Delft University and Ph.D in Polymer Processing from Twente University in the Netherlands. **Chris** has been a top seminar instructor for more than 25 years. He has taught with SPE, UWM & UC Berkeley & teaches many in-house courses. He is a well known plastics author. Chris has 30+ years experience in the plastics industry. His experience is in a wide range of extrusion operations, including fiber spinning, film, sheet, tubing, medical tubing & profile extrusion, coextrusion, and reactive extrusion. He has worked on both practical and theoretical problems such as screw & die design, troubleshooting, modeling and computer simulation, material analysis, failure analysis, etc. Chris has authored 6 books on extrusion and related fields. Since 1990 he has been President of Rauwendaal Extrusion Engineering, Inc., a company that provides custom extruder screws and other extrusion hardware, training programs, engineering & expert witness services to the plastic industry. With screw design as his specialty, over the past 5 years REE had developed patented technologies in the following areas: Elongational Mixing Devices, Mixing non-return valves, Single screw compounding extruder, Cooling screws for foam extrusion .

Troubleshooting Extrusion Problems

(20-21 March 2008, Century Park Hotel, Bangkok)

Course Instructor : Dr. Chris Rauwendaal
President, Rauwendaal Extrusion Engineering Inc., USA

COURSE OUTLINE :

1. **Requirements for efficient troubleshooting** (Instrumentation, Understanding the process, Collection of historical data, Condition of the equipment, Information on the feedstock)
2. **Tools for troubleshooting** (Temperature measurement devices, Data acquisition systems, Microscopy, Thermochromic materials, Thermal analysis)
3. **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)
4. **Polymer degradation** (Thermal degradation, Mechanical degradation, Chemical degradation, Effect temperature and residence time, Melt temperatures in extrusion, Residence times in extrusion, Solving degradation problems)
5. **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)
6. **Air entrapment** (Mechanism of air entrapment, Avoiding air entrapment, Removing entrapped air)
7. **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)
8. **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)
9. **Wear problems** (Corrosive wear, Abrasive wear—Misalignment, Screw deflection, Abrasive fillers, Solving wear problems)
10. **Case studies** (Participants are encouraged to bring actual extrusion problems to the seminar for a hands-on application of the material presented)