

Special Injection Runner Design Techniques for Rubber Molders

8 March 2012, BITEC, Bangkok, Thailand

Instructor: Dr. Van Walworth, USA

(1.30 pm to 5 pm) (Half-Day Program)

How to Reduce Rubber Compound Cost?

8 March 2012, BITEC, Bangkok, Thailand

Instructor: Dr. Hans Joachim Graf, Germany

(1.30 pm to 5 pm) (Half-Day Program)

Flashless / Wasteless Rubber Molding

9 March 2012, BITEC, Bangkok, Thailand

Instructor: Dr. Van Walworth, USA

(9 am to 5 pm) (Full Day Program)

Chemical, Physical & Analytical Testing of Rubber Products

9 March 2012, BITEC, Bangkok, Thailand

Instructor: Raj Kumar, India

(9 am to 5 pm) (Full Day Program)

Design of Experiments (DOE) Case Studies for Rubber Industries

9 March 2012, BITEC, Bangkok, Thailand

Instructor: Dr. Hans Joachim Graf, Germany

(1.30 pm to 5 pm) (Half-Day Program)

Design and Development of Rubber Products for New Generation Automobiles

10 March 2012, BITEC, Bangkok, Thailand

Instructor: Raj Kumar, India (9 am to 5 pm) (Full Day Program)

Remark: All Programs will be conducted in ENGLISH only.

Organized by

**Rubber
Industry
Academy**
@TechnoBiz

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Special Injection Runner Design Techniques for Rubber Molders

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Instructor: Dr. Van Walworth, USA (1.30 pm to 5 pm) (Half-Day Program)

- Injection Molding Overview
 - Hot-Runner Molds
 - Cold-Runner Molds
 - Split Cold Runner Blocks
 - Common Injection Runner Cross-Sections
- Runner Layouts
 - Balanced Runners
 - Un-balanced Runners
 - Hot verses Cold Runners
- Special Runner Design Techniques
 - How Runners and Cavities Fill
 - Sprue Drops
 - Nozzle-Tips
 - Valve Gates
 - Cross-Section Designs
 - Laminar Flow Ratio
 - Vanturi Runner Feature

How to Reduce Rubber Compound Cost?

8 March 2012, BITEC, Bangkok, Thailand

Instructor: Dr. Hans Joachim Graf, Germany (1.30 pm to 5 pm) (Half-Day Program)

- Quality procedures for Change of Compounds (VDA, AIAG, QS 9000)
- Testing and Validation of Raw Materials in a Compound
- Calculation of Amortization of Raw Material Exchange
- Case Studies

Flashless / Wasteless Rubber Molding

9 March 2012, BITEC, Bangkok, Thailand

Instructor: Dr. Van Walworth, USA (9 am to 5 pm) (Full Day Program)

- Flashless and Wasteless Overview
 - Transfer Mold Applications
 - Compression Mold Applications
 - Injection Mold Applications
 - Tear-Trims and Over-Flows
 - Venting
 - Vacuum
- Flashless Molding Techniques
 - Cavity Stacking
 - Micro-Venting
 - Radial Grinding
 - Flash Rupture Coining
 - Die-Cutting
 - Focused PSI Clamping
- Wasteless Molding Techniques
 - Direct Inject
 - Programed Nozzle Tips
 - Sprue Fabric System
- Techniques Enhancing Flashless-Wasteless Molding
 - Insulation on Mold
 - Insulation under Platen
 - Platen Design Considerations
 - Thermal Gradient Issues
 - Back Rind Considerations
 - Pulse-Filling verses Quick-Clamp
 - Regressive Short-Shots
 - Thermally Sensitive Film
 - Pressure Sensitive Film

Chemical, Physical & Analytical Testing of Rubber Products

9 March 2012, BITEC, Bangkok, Thailand

Instructor: Raj Kumar, India (9 am to 5 pm) (Full Day Program)

Chemical & Physical Testing of Rubber Products

- Importance of chemical testing - significance and its role in decision making
- Chemical testing of rubber, specific gravity, swelling studies-Change in weight-Changes in volume-Change in dimensions - Changes in physical properties – TS, Eb %, Hd etc-chemical composition analysis -rubber, carbon content, ash content etc.
- Various important physical testing, its procedures, significance
- Rubber Compound testing -scorch time,-Optimum cure time-Mooney viscosity, Mooney scorch, Raw material testing
- Physical testing such as Tensile strength, Elongation at break, Modulus,- Compression set -At constant load & strain methods ,

- Ageing studies -Types of ageing -Oil ageing-Air ageing -Radiation ageing- Changes in physical properties -Environmental resistance tests -Weather resistance, -ozone resistance - static and dynamic conditions,-Types of Flexing –Dematia ,Ross, Heat buildup, Fatigue to failure tests
- Product testing - Individual product such as hoses, seals, tyres, gaskets, belts etc

Analytical Testing of rubber products

- Various spectroscopic Techniques – principles and interpretation – FTIR, GCMS, ICPS, UV Visible spectroscopy etc
- Various Thermal analysis - principles and interpretation –TGA, DSC & DMA

Design of Experiment (DOE) Case Studies for Rubber Industries

9 March 2012, BITEC, Bangkok, Thailand

Instructor: Dr. Hans Joachim Graf, Germany (1.30 pm to 5 pm) (Half-Day Program)

- Short Introduction to Statistical Design of Experiments (DOE)
- Advantage of DOE compared with other methods.
- DOE Examples:
 - Compounding (Master Batch, Accelerator Design)
 - Mixing of Rubber
 - Processing (Extrusion, Molding)

Design and Development of Rubber Products for New Generation Automobiles

10 March 2012, BITEC, Bangkok, Thailand

Instructor: Raj Kumar, India (9 am to 5 pm) (Full Day Program)

- Challenges faced by the new generation vehicles – Tyres and Non-tyres – over view
- Introduction of general purpose of rubbers and its limitations,
- Selection of Elastomers for automotive Rubber components
- Understanding the product / customer requirements to design formulation in view of advancement in automotive applications
- Dynamic mechanical properties – Loss factor, Storage modulus / Loss modulus.
- Specialty Testing requirements of Automotive Rubber components – Ozone resistance, CNG / LPG resistance test requirements etc
- Quality Tools for automotive rubber components industry

Instructors

Dr. Van Walworth is a consultant to the rubber, plastic, and pipe industries. Walworth is an internationally recognized educator, and technical instructor. Walworth has been conducting seminars with the University of Wisconsin Milwaukee for 18 years. His professional career spans 30 years practicing product R&D, tool and equipment design, process establishments and improvements, troubleshooting, project management, and spontaneous creativity. Walworth is President of Research & Design Specialties, Inc., based out of Nashville, Tennessee, USA. During Walworth's career, he has held management positions with Parker-Hannifin, Wynn's Precision, Ashtabula Rubber Company, Thunderline Corporation, and Reeves Rubber Company. Four USA patents for rubber products have been issued based on his work, with over a dozen additional patents pending. Walworth's education includes a BS degree in Engineering Design and Drafting, Masters in Business Administration, and a PhD in Business Management.

Dr. Hans-Joachim Graf has over thirty years experience in the rubber industry. He was first with manufacturing companies for pharmaceutical and technical rubber parts. He then joined DESMA a manufacturer of Rubber Injection molding and polyurethane shoe machines (DESMA) responsible for process development, followed by RheinChemie as senior manager of material developments for rubber industry. After Cooperstandard Automotive (CAN), division of profile extrusion, as a director of materials he is today with WOCO (GE), a manufacturer of injection molded parts in charge for material development and process design. Mr. Graf has authored over 60 publications and paper presentations and invented more than 15 patents. He has given a rubber technology course for graduates at University of Waterloo and is teaching courses in recipe design and industrial bonding at University of Hannover (GE) continuing education department. He is a member of the American Chemical Society, Deutsche Chemische Gesellschaft and Deutsche Kautschuk Gesellschaft. He received his diploma degree from University of Mainz and his doctorate in polymer chemistry from University of Freiburg, both Germany.

Mr. K Rajkumar is Sr. Asst. Director at Indian Rubber Manufacturers Research Association (IRMRA), which offers R&D Services for Indian Rubber Industry. With one year experience from M/s. Synthesis & Chemical Ltd., he has joined IRMRA in the year 1999 and actively involved in many activities. He is involved in establishing testing methods for evaluating polymers & polymer additives using Pyrolyser -GC-MS & FID in IRMRA. He has undertaken several assignments like specification development, product development, reverse engineering and consultancy work. He has presented many technical papers in national and international conferences. He has delivered several lectures on various topics in various technical training courses conducted by IRMRA at national and international levels.

Registration Form – Training Program for Rubber Industries 8-10 March 2012, Bangkok, Thailand

(Kindly fill all the information in ENGLISH. Please use additional forms for multiple registrations)

We would like to register following programs

	Program Name	Registration Fee, US\$/Person		
		Before 20 Dec 2011	Before 25 Jan 2012	After 25 Jan 2012
<input type="radio"/>	Special Injection Runner Design Techniques for Rubber Molders	150 US\$	200 US\$	300 US\$
<input type="radio"/>	How to Reduce Rubber Compound Cost	150 US\$	200 US\$	300 US\$
<input type="radio"/>	Flashless / Wasteless Rubber Molding	300 US\$	400 US\$	500 US\$
<input type="radio"/>	Chemical, Physical & Analytical Testing of Rubber Products	200 US\$	300 US\$	400 US\$
<input type="radio"/>	DOE Case Studies for Rubber Industries	150 US\$	200 US\$	300 US\$
<input type="radio"/>	Design & Development of Rubber Products for New Generation Vehicles	200 US\$	300 US\$	400 US\$

Company Name

Address

..... Country Zip.....

Contact Person Mobile..... Email

Participant Names:

Participant 1 :..... Position Email.....

Participant 2 :..... Position Email.....

Participant 3 :..... Position Email.....

Participant 4 :..... Position Email.....

(Group Registration – 10% discount will be offered for the group of 3 or more than delegates registers for the same program from the same company. Full-day training program fee includes training documentation, lunch and refreshments. Half-day training program fee includes training documentation and refreshments)

Payment Methods

Payment Method:

- Bank Transfer to *A/C Name: TechnoBiz Communications Co., Ltd.; A/C No: 010-431690-5*
Bank Name: Siam Commercial Bank, Bank Address : Lat Phrao Soi 59 Branch, Bangkok, Thailand
Swift Code: SICOTHBK (Kindly pay all the bank charges)

- Credit Card Visa Master Card

Credit Card Number Cardholder Name.....

Card Expiry Date..... Last 3 Digits on Signature Panel

Cardholder Signature Date.....

Please send registration form to



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