

Rubber Technique 2020

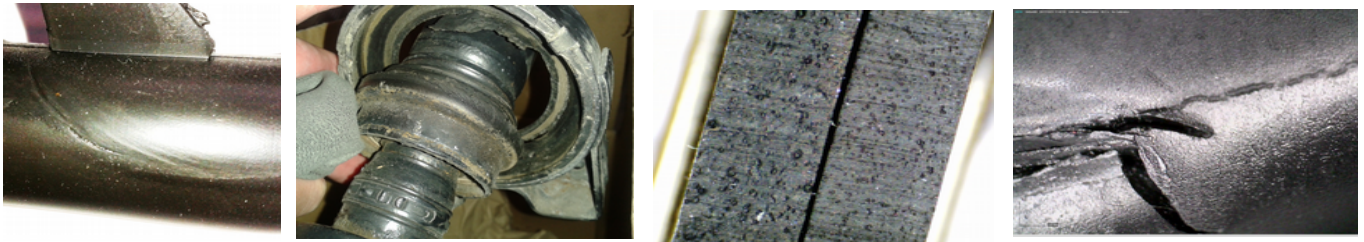
Schlüchtern, DE

18 – 19 February 2020

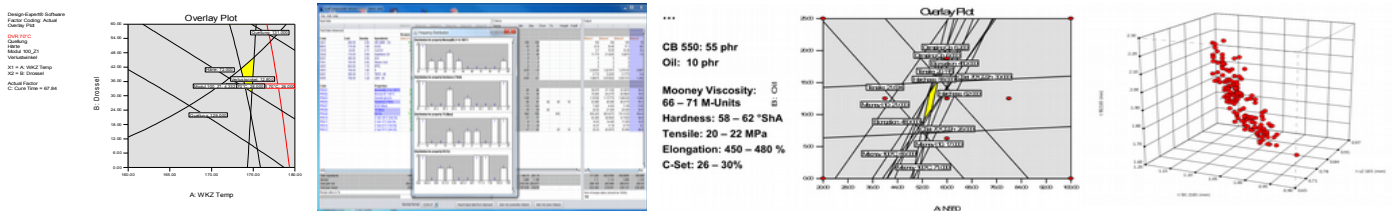
Akzent Hotel Stadt Schlüchtern, DE-36381 Schlüchtern

Seminars for Chemists, Engineers and Technical Managers

Seminar Schedule



18. February 2020	Strategic Compounding with Rubber Blends	DE-21	Robert Schuster
19. February 2020	Rubber Fatigue Strength through Selection of Compound Ingredients and Skilful Compounding	DE-23	Robert Schuste



18. February 2020	Design of Experiments [DoE] for Practitioners: Introduction into Statistic Experimental Design (Design Expert® 12) Training with Examples of Rubber Manufacturing.	DE-22	Hans-Joachim Graf
19. February 2020	Statistical Process Models and its Use to Improvement of Rubber Manufacturing: Demonstration with Examples from Mixing, Extrusion & Injection Molding.	DE-24	Hans-Joachim Graf

Strategic Compounding with Rubber Blends.

Starting from the basics of polymer compatibility the influence of molecular weight and chemical constitution of rubbers on miscibility will be presented in relation to phase morphology, phase adhesion and interfacial effects that control important physical properties of rubber blends. The use of phase compatibilizers to improve processing and compound properties will be presented. In addition, the advantages of the blend technology will be demonstrated for technological important blend systems. However, the limitations of the technology will be also addressed to avoid adverse effects that can be made in application. The Seminar will provide a platform for reliable decisions in designing recipes to increase factory productivity, reducing costs and manufacturing defects.

Fatigue Strength Through Compound Ingredient Selection.

Rubber parts under dynamic use are exposed to internal stress. It is well known, that sulphur bridge structure is determining life time under dynamic load. Filler or filler blends play a different role and must be selected with great care. Surface energy determines distribution. Sufficient surface modification of the filler through silanisation or other surface active ingredients prevent reagglomeration of the filler. Those structure will influence crack formation and crack growth under dynamic stresses. But all other ingredients play a role in dynamic as well. In this seminar all compound ingredients are reviewed under this aspects

Design of Experiments [DoE] plus Compounding Tools for Practitioners:

Workshop: Compounding in Rubber Manufacturing.

Introduction into Statistic Experimental Design with examples from manufacturing of Rubber. Program Introduction: We use Design Expert® - please download Trial Version. Analysis of DoEs from Literature, Development and manufacturing sources. Compounding: Effect of Polymer Blends / Oil Filler / Accelerator Effect on Properties, Accelerator Optimization with a Combination of Response Surface & Mixture Designs Compounding with Recipe Simulation Tools using Literature Compound Database in Comparison with DoE Evaluations.

We use Design Expert® 12 - Trials version and GrafCompounder 3.211 (Personal License is included).

Design of Experiments in Process Design & Improvement:

Workshop with Examples from Mixing, Extrusion and Injection Moulding.

Stability of Rubber Manufacturing Processes and their Optimization using Statistic Experimental Design. It is based on the identification of independent process factors, which are influencing the process at large. Operating Window in Mixing with SBR and EPDM Rubbers, Review of Classic Mixing Evaluations and Effect of Work Input on Compound Properties. Injection Molding: Statistic Model of the Injection Process, Operating Window and Cycle Time Reduction. Extrusion Process: DoE in Extrusion, Screw Design and Process Window. Influence of Compound on Process Stability.

18. February 2020 (Robert Schuster) (DE-21)

18. February 2020 (Hans-Joachim Graf) (DE-22)

19. February 2020 (Robert Schuster) (DE-23)

19. February 2020 (Hans-Joachim Graf) (DE-24)

Robert Schuster: is a rubber scientist and technologist, who receives a lot of attention all over the world. After his doctorate thesis at the Macromolecular Institute of the University of Freiburg, he took over the management of the German Institute for Rubber Technology (DIK) from 1991 to 2010 and made this institute significantly influential. For his services he has been awarded the "Carl Harries" medal by the German Rubber Society (DKG) in 1998. He also received the Melvin Mooney Distinguished Award from the American Rubber Society (RdofACS) in 2012. He teaches lectures and seminars in rubber technology around the world and is a consultant to Arlanxeo. He has written three scientific books on rubber and published more than 415 scientific and technological articles in journals.



Hans-Joachim Graf: brings more than 40 years experience in the rubber processing industry both as a material and as a process developer. After completing his doctorate at the Macromolecular Institute of the University of Freiburg, he gained his experience primarily in the production of technical articles, in the chemical as well as in the machinery industry. He has published over 60 technical articles and has participated in more than 15 patents. He has held seminars and lectures at the DIK, as well as at the University of Waterloo, Canada. He was honored with the "Erich Konrad" Medal of the German Rubber Society (DKG) 2012. Since 2009 he has been working as a consultant in various companies of the rubber industry as well as a scientific consultant and partner of the TechnoBiz Group.



Schedule: 09.00-17.00 hrs (each day)

Hotel Address: AKZENT Hotel Stadt Schlüchtern, Breitenbacher Str. 5, 36381 Schlüchtern (www.hotel-stadt-schluechtern.de)

Registration - Rubber Technique 2020, Schlüchtern

18. February 2020	Strategic Compounding with Rubber Blends	DE-21	450,- Euro/person
18. February 2020	Design of Experiments [DoE] for Practitioners <i>(Licence of GrafCompounder included)</i>	DE-22	650,- Euro/person
19. February 2020	Rubber Fatigue Strength and Ingredient Selection	DE-23	450 ,- Euro/person
19. February 2020	Design of Experiments for Process Improvement	DE-24	450,- 0Euro/person

German participants: Add 19% GST / EU Participants: Reverse Charge / None EU Participants: Registration Fee = Net Price

Early Bird Discount:

- Register 3 months before event dates, 15% discount on total registration fee
- Register 2 months before event dates, 10% discount on total registration fee
- Register 1 month before event dates, 5% discount on total registration fee

Group Discount If 3 or more than delegates register same course from the same organization, 10% total discount on course fee in addition to early bird discounts.

Event will take place with minimum of 5 participants each Seminar / Maximum is 15 participants

In case of cancellation a charge of 25% will be applied.

Company Name VAT Number.....

Address.....

Tel Fax.....

Participant Name 1 Designation Course Codes.....

Email Mobile Number

Participant Name 2 Designation Course Codes.....

Email Mobile Number

Date Registered : Total Fee: + VAT 19% =€

Payment Method: Bank Transfer to: Dr. Hans-Joachim Graf
Comdirect Bank AG, Germany
IBAN: DE37 2004 1111 0340 3847 00

Credit Card:
Email Invoice upon request

Please send the registration form to: H-JG Consulting / TechnoBiz Europe,
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