

# International Conference and Exhibition

March 21st / 22nd, 2007 Mannheim, Germany



## International Conference Plastics in Automotive Engineering

On 21st and 22nd March 2007 VDI will be holding the International Conference "Plastics in Automotive Engineering" organized by VDI Wissensforum in cooperation with VDI-Society for Plastics Technologies. This highquality event is widely recognized as "the" meeting-place for the automotive industry.

## Innovative variety

Plastics have a decisive influence on both the conceptual design and the appearance of new generations of vehicles. Development objectives such as aesthetic appeal and comfort, safety and lightweight construction, or quality and costs are affected directly by the material concept and the corresponding processing and manufacturing technologies.



## The conference

In 2007 the conference will focus in particular on:

- → Freedom of design
- → High quality interiors
- → Comfort and ease of handling
- → Lightweight design concepts
- → Noise control and damping
- → Safety and passenger protection
- → Networking in development processes
- **→** Fuelconsumption and Emission

### Conference Content Coordination

VDI Society for Plastics Technologies

## VDI Technical Advisory Board for Plastics in Automotive Engineering

Baumgart, Hartmut, Dr., Adam Opel AG Emmermann, Bernd, Dipl.-Ing., Volkswagen AG Kim, Patrick, Dr. Renault, Guyancourt/F Kneifel, Eberhard, Dipl.-Ing., MAN Nutzfahrzeuge AG Lampe, Thomas, Dr., Volkswagen AG Mayer, Andreas, Dipl.-Ing. (FH), IVECO Magirus AG Pälmer, Reinhard, Wilhelm Karmann GmbH Schuh, Thomas, Dr., DaimlerChrysler AG Stauber, Rudolf, Prof. Dr., BMW Group Unverfehrth, Bernd, Dipl.-Ing., EvoBus GmbH Vazan, Marcela, Dr., Ford-Werke AG Wagner, Dieter, Dipl.-Ing., G., Dr.Ing.h.c.F. Porsche AG Wolf, Michael, Dr.-Ing., AUDI AG

## Plastics in Automotive Engineering

System solutions and design approaches based on polymer technologies have sustained the advances in automotive engineering made in lightweight design, active and passive safety features and in the optimisation for aerodynamics and noise abatement. In addition, polymers guarantee attractive designs both for the interior and the exterior in passenger cars and commercial vehicles. Modern styles developed by industrial artists, agreeable impressions of the visual appearance, quality and touch of components are achieved by a targeted use of polymer materials today. The application of plastics allows design solutions for vehicle structures, components and assemblies in passenger cars and commercial vehicles to be optimised for customisation and economic viability. In addition, advanced polymers ensure that motor vehicles continue to have a reduced impact on the environment in a sustained way.

The development and production of polymer-based components for motor vehicles focus in particular on short development cycles and on an optimisation of manufacturing processes for kerbing their cost and enhancing their quality. Computer-aided materials selection, mathematical simulation of the production processes of plastic parts and predictive models for long-term behaviour and service life enable engineers to design and optimise polymer-based components to achieve the targets of economy, effectiveness and efficiency.

The Annual VDI Conference 2007 "Plastics in Automotive Engineering" provides an overview on the most recent advances made for system solutions in polymer engineering in passenger cars and commercial vehicles. Conference speakers give technical presentations on selected polymer-based designs from the fields of car interior, exterior and drive train. In addition, experts report on novel processing techniques for polymer materials and continued development of mathematical modelling associated with plastics. In parallel to the conference, an industrial exhibition for the feedstock producers, automotive suppliers and German manufacturers of passenger cars and commercial vehicles provides valuable and welcome information on current polymer-based products and applications in automotive engineering.

VDI-Gesellschaft Kunststofftechnik invites you cordially to attend the Annual Conference 2007 "Plastics in Automotive Engineering".

Ludy hundy Prof. Dr. Rudolf Stauber

Supported by: www.fisita.com www.eaec.net





### Information about the conference

Dr.-Ing. Ludwig Vollrath, Gabriele Tietze-Schmitz Phone: +49 (0)2 11 62 14-514, Fax: +49 (0)2 11 62 14-160 E-Mail: kunststoffe@vdi.de

## NEW!

## AUTOMOTIVE NIGHT, Tuesday, 20th March 2007, Zeughaus 19.30/7:30 pm

May we invite you to the very first "Automotive Night"? It will take place on 20<sup>th</sup> March 2007, the eve of the first day of the Conference. Take the opportunity to enjoy a snack and tune up for this important "gathering of the clan" – courtesy of **Bayer MaterialScience**.

## Wednesday, 21st March 2007

#### PLENARY SESSION:

Chair: Prof. Dr. Rudolf Stauber, BMW Group, Munich

## 09:00 Welcoming Words and Tributes

Prof. Dr. Rudolf Stauber, BMW Group, München

## 09:15 Gradient Materials and Self-Repair - Learning Technology from Biology

Prof. Dr. Thomas Speck\*, Dr. Deane Harder, Dr. Olga Speck, Universität Freiburg, Freiburg i.Br.

## 09:45 Future Mobility - Scenarios from 2025

**Dr. Walter Hell**, Institut für Mobilitätsforschung (BMW Group), Berlin passenger and freight traffic – modes of transportation – demography – economic development – infrastructure – technologies

## 10:15 Availability of Oil and Refinery Products as Sources of Energy

**Dr. Klaus Picard,** Mineralölwirtschaftsverband e.V., Hamburg current situation of reserves and resources – developments in the market for petroleum products – influence of political climate on sales scenarios – consequences for refinery structure – future balance of supply and demand

## 10:45 BREAK and visit of the EXHIBITION

## **NEW TECHNOLOGIES**

Chair: Prof. Dr. Rudolf Stauber, BMW Group, München

## 11:30 Heavily Loaded Safety Components in E-LFT Technology

**Diego Jaggi\***; Dipl.-Ing. Stefan Ziegler; Dipl.-Ing. Andreas Rüegg, Esoro AG, CH; Dipl.-Ing. Norbert Stötzner, Weber Fibertech

IE-LFT process - E-LFT sample component 2/3 rear seatback - E-LFT series component tailgate Smart ForTwo - components targeted for E-LFT; Summary; Outlook

#### **EXTERIOR**

Chair: Dr. Thomas Schuh, DaimlerChrysler AG, Sindelfingen

## Modular Car Body Design, Example: Front End of the new X5

Dipl.-Ing. (FH) Udo Hafner\*, Dipl.-Ing. (FH) Joachim Wehner\*, Dipl.-Ing. (FH) Stefan Adler, BMW Group, München

Maximum design freedom for the front end – modular structure satisfies vehicle requirements – materials requirements – selection of materials – designing parts for plastics – outlook

## 12:00 Film Technology for Plastic Add-on Exterior Parts

**Dr.-Ing. Walter Aichholzer\***, Dr. Matthias Beyer, Bernd Kettemann, DaimlerChrysler AG, Sindelfingen Paint-substitute technology - UV paint film - coating techniques - deep-drawing - radiation curing - PUR/SRIM foam technology - integrating antennae

## Cost reduction approaches for exterior plastic parts+

Nicolas Piccirelli, Renault, Guyancourt, F Molded-in colors – quality – appearance – cost - validation

## 12:30 LUNCH at the EXHIBITION

The old residence city of Mannheim is famous for music, museums and mobility (1818: Carl Freiherr Drais invents the bicycle – 1886: Carl Benz invents the automobile)

The modern Rosengarten Congress Center provides a perfect setting for the international Congress and Exhibition "Plastics in Automotive Engineering"



Zeughaus C5, Mannheim

## Wednesday, 21st March 2007

#### INTERIOR

Chair: Dipl.-Ing. Bernd Emmermann, Volkswagen AG, Nutzfahrzeuge, Wolfsburg

## 14:00 Materials and surface concepts in the Skoda Roomster (tailgate exterior as well)

**Jens Rückert**, Skoda Auto, Mlada Boleslav, CZ High quality and low cost - hybrid tailgate - modular switch panel - exterior styling elements - Scout version with applications

## 14:30 Materials selection in a World car: the Renault / Dazia LOGAN

**Alain Giocosa**, Dr. Patrick Kim, Renault, Guyancourt, F Specifications - low cost - LCC suppliers - competitiveness - materials selection

## 15:00 Experience with 'Nano-coating' for Modifying Leather and Leather-look Surfaces

**Rolf Danzebrink**, Nanogate AG, Saarbrücken Surface modification and property profiles of nano-coatings – improving abrasion resistance by programming nano-coatings

## 15:30 BREAK and visit of the EXHIBITION

## HIGH-PERFORMANCE APPLICATIONS

Chair: Dr. Patrick Kim, Renault, Guyancourt/F

## 16.00 CFC Technology at BMW - Today and Tomorrow

Dipl.-Ing. (FH) Martin Derks\*; Dipl.-Ing. Franz Birz-le\*, BMW Group, München; Dipl.-Ing. H. Pfitzer, BMW Group, Landshut

Design and production methods - example requirements for interior and exterior applications - development targets for future materials systems

## 16.30 Class-A with CFC - Example: Gallardo Spyder Rear Deck

Dipl.-Ing. Günter H. Deinzer\*, Christoph Hermes, Thomas Scheidewind, Dipl.-Ing. Herwig Reim, Audi AG, Ingolstadt; Dipl.-Ing. Attilio Masini, Automobili Lamborghini S.p.A., Sant' Agata Bolognese, I; Dipl.-Ing. Jürgen Enz, ACE GmbH, Immenstaad Economic feasibility study – requirements on future CFC materials and process technology

## 17.00 Application of High-Performance Plastics in the Bugatti Veyron

Dr.-Ing. Oliver Schauerte\*, Dr.-Ing. Wolfgang Schreiber, Dipl.-Ing. Albert Finbeiner, Dipl.-Ing. Eduard Ene, Dipl.-Ing. (FH) Daniel Starmann, Bugatti Engineering, Wolfsburg Fiber-composite materials – carbon fiber – CFC – lightweight – Body-in-Black – mold core – prepreg – RTM

### **EXTERIOR**

Chair: Dr. Thomas Lampe, Volkswagen AG, Wolfsburg

## Requirements for Materials used in modern Headlights and Luminaires

Dr.- Ing. Dipl.- Phys. Axel Schrödter\*,

Dipl.-Ing. Berend Wegner, Volkswagen AG, Wolfsburg Vehicle illumination – loads – polymer materials – temperature load

## New Materials Generation for Side Wall of 3 Series Coupe and Convertible

Dipl.-Ing. Jürgen Korzonnek\*, BMW Group, München; Dipl.-Ing. Robert Killermann\*, BMW Group, Landshut Materials requirements for online painting – materials selection – component development and process simulations – component production concept and mold concept – automated assembly in car body construction – online painting

## Thermoforming Class "A" Exterior Parts at GM

**Charles Buehler\***, Dave Mattis, GM Corp., Warren, USA; Dr. Hartmut Baumgart, Adam Opel GmbH, Rüsselsheim Thermoforming - TPO - Paint Film - Color-Match-to-Body

### POWERTRAIN

Chair: Dipl.-Ing. Dieter G. Wagner, Dr.Ing.h.c.F. Porsche AG, Weissach

Challenges and Innovations for Plastic Components in the Engine Compartments of Supercharged Engines

## Dipl.-Ing. (FH) Thomas Jessberger,

Mann + Hummel GmbH, Ludwigsburg
Market situation for supercharged engines - function
integration, example intake system - intake acoustics
- damping and designing - innovations for new and
proven components

## Influence of Ethanol Content in Gasoline on Elastomers and Plastics

Sven Himmel\*, Peter Schulz, Carmen Wloka, Lutz Wohlfarth, Volkswagen AG, Wolfsburg Use of gasolines with ethanol content - market situation and future trends - affect on property profiles of various elastomers - affect on mechanical properties of fuel-relevant plastics

## Highly efficient Multitwister® Oil Separator System - Small-Format Polymer Technology

Dipl.-Wirt.-Ing. (FH), Dipl.-Ing. (BA) Christian Schürle, Reinz-Dichtungs-GmbH, Neu-Ulm separating oil from blow-by gas – classification, requirements and description of oil-separation systems – comparison with alternative oil-separation concepts – attractive design features of Multitwister

#### 17.30 STANDING RECEPTION at the EXHIBITION

## Thursday, 22nd March 2007

### SIMULATION

Chair: Reinhard Pälmer, Wilhelm Karmann GmbH, Osnabrück

## 09:00 CAE Driven Development of Interior Components - Status and Future Challenges\*

Dipl.-Ing. (FH) Thomas Enderich\*, Dr.-Ing. Beate Lauterbach, Dr.-Ing. Steffen Frik, Adam Opel GmbH Rüsselsheim; Anders Eriksson, Saab Automobile, AB, Trolhattan, S Current interior components contain a material mix of steel, polymers, and textiles - The paper gives an overview of current simulation applications and simulation techniques.

## 09:20 Virtual Interior Development

 $\label{limited} \begin{tabular}{ll} \textbf{Dipl.-Ing. Michael Hagemann*}, \textbf{Dipl.-Ing. Ulf Hillemann,} \\ \textbf{Volkswagen AG, Wolfsburg} \end{tabular}$ 

Materials models – non-linear structural mechanics – low-cycle dynamics – creep – vibration analysis – modeling strategy

## 09:40 CAE Development of Plastic Crashpads, Example: Corsa Door Panel

**Dipl.-Ing. Alexander Thomas\***, Dr.-Ing. Beate Lauterbach, Adam Opel GmbH, Rüsselsheim; Dipl.-Ing. Eric Zimmermann, Faurecia Interior Systems, Scheuerfeld introduction – requirements – working principle of cones – stiffness zones – simulation – outlook

# 10:00 Optical analysis of the deformation behavior of plastic components under thermal and/or mechanical loading

Prof. Dr.-Ing. Rainer Renz\*, Dr.-Ing. Gerhard Stelzer, Dipl.-Ing. Kamil Jerdonek, TU Kaiserslautern
Loading - deformation behavior - FE simulation - plastic components - optimal measuring methods - parameter determination - materials characterization

### 10:20 BREAK and visit of the EXHIBITION

## PLENARY SESSION

Chair: Prof. Dr. Rudolf Stauber, BMW Group, München

## COMMERCIAL VEHICLES

Chair: Dipl.-Ing. Eberhard Kneifel, MAN Nutzfahrzeuge AG, München

New concept for plastics in commercial vehicle

**Ing. Jocopo Corsi**, IVECO, Torino/I weight, recycling, innovation, quality, costs

## Half a million Thermoplastic Exterior Components Painted Inline - per Year!

**Dipl.-Ing. (FH) Hartmut Häberle**, MAN Nutzfahrzeuge, München

History – description of assembly – materials – series validation of all process steps – data (costs, weight)

## Plastics Concepts in the VW Constellation

**Dipl.-Ing. Joerg Hain\***, Dipl.-Ing. (FH) Andreas Teuber, Volkswagen AG, Wolfsburg

Requirements profile of South American market - plastics concepts exterior - plastics concepts interior - PP instrument panel

## Developing a new Generation of Urban Bus Seating

**Dipl.-Ing. Roland Scharl**, EvoBus GmbH, Mannheim Modular structure of seating family to produce all configurations – innovative mold technology – significant shape language – benchmark for installation space and weight – total function integration with vehicle-specific concept

## 11:00 Innovations in Materials and Process Engineering for Tomorrow's Vehicles

Dr. Ulrich Liman, **Olaf Zöllner\***, Bayer MaterialScience AG, Leverkusen Materials properties by neural networks - luxurious surfaces - combination of different processing technologies - possibilities in pilot plant stations

## 11:30 Polymer materials and the future

**Prof. Dr. Rolf Mühlhaupt**, Uni Freiburg, Freiburg Innovations and trends

## 12:00 Biopolymers for Technical Applications

**Dr. Stefan Greulich**, Du Pont, Le Grand-Saconnex, CH Why should we be interested in biopolymers? - What are biopolymers? - How are they produced? - examples of biopolymers and their areas of application - outlook

## 12:30 Closing Words

Prof. Dr. Rudolf Stauber, BMW Group, München

## End of Conference, approx. 13:00/1 pm

## The exhibition

A highlight of the automotive conference in Mannheim is the exhibition which is held in parallel with it. Our exhibition is held directly adjacent to the conference. It is an attractive opportunity for you to present your products and services to an interested and well-informed specialist public. Here you can talk directly to your core target group.



In the lobby of the Congress Center plastic components from quantity production as well as innovative, forward-looking exhibits and system solutions may be viewed. The exhibition is supplemented by an automobile salon with current models of cars and commercial vehicles.



#### The exhibition covers

- **→** Development of materials and components
- → Component calculation and simulation
- Mass-produced components for the car interior and exterior
- → Engineering services
- → Tool- and mould-making





Select one of three types of presentation

- → Platform area
- → Fully equipped system stand
- → Floor space for company's own stand construction system

#### Exhibitors

Among those registered for the 2007 exhibition are: A.Schulman GmbH, Albis Plastics GmbH, AVK-TV e.V., BASF Aktiengesellschaft, Bayer MaterialScience AG, Bertrandt AG, BRANSON ULTRASCHALL Niederlassung der EMERSON, color plastic chemie Albert Schleberger GmbH, csi-entwicklungstechnik GmbH, Decoma Germany GmbH, Degussa, Röhm Formmasse, DEMAT GmbH, Dow Automotive, DSM Engineering Plastics, EJOT GmbH & Co. KG, Elastogran GmbH, EMS-Chemie (Deutschland) GmbH, European Allicance for SMC/BMC, c/o AKV e.V., Evolution-Team Bruno Sattlecker GmbH, ExxonMobil Chemical Europe Inc., Frimo Group GmbH, GE-Plastics (Automotive), Georg Kaufmann Formenbau AG, HBPO GmbH, Husky Injection Molding Systems, Hüthig GmbH & Co. KG, interform engineering GmbH & Co. KG, Intier Automotive Europe, J&A Plastics GmbH, KIEFEL AG, KRAIBURG TPE GmbH & Co. KG, Krauss-Maffei Kunststofftechnik GmbH, LANXESS Deutschland GmbH, Leonhard Kurz GmbH & Co. KG, Manfred Jacob Kunststofftechnik GmbH, Minelco GmbH, Nova Chemicals Vertrieb GmbH, Peguform, PolyOne, Pröll KG, Resin Express GmbH, ROWA GmbH, SABIC Deutschland GmbH & Co. KG, SAXONIA Galvanik GmbH, Schmale GmbH, Schneider Form GmbH, SEKISUI ALVEO AG, Senco (Europe) GmbH, Solvay Advanced Polymers, SWA s.r.o., Ticona GmbH, TREXEL GmbH, Victrex Europa GmbH, Wipag



### Information about the exhibition

... can be obtained from Heinz Küsters VDI-Wissensforum IWB GmbH Tel.: + 49 (0) 2 11 62 14-5 92

Fax: + 49 (0) 2 11 62 14-1 67 E-Mail: fachausstellungen@vdi.de

We look forward to seeing you!

## Information

## Organizer

VDI Wissensforum IWB GmbH

The scope of services includes lunch, the evening event and a beverage during breaks. The conference handbook will be distributed on the spot to attendees. Additional offer: If you attend the conference, we offer you the opportunity of VDI membership for six months free of charge.

## Information and application

VDI Wissensforum IWB GmbH

Customer centre Telefon +49 (0) 211 62 14-201 P.O. Box 10 11 39 Telefax +49 (0) 211 62 14-154 40002 Düsseldorf, wissensforum@vdi.de www.vdi-wissensforum.de

**Applications** must be made in writing. We will send you confirmation of registration and the invoice. Please do not pay the conference fee until you have received the invoice.

#### Location of conference

Congress Center Rosengarten Rosengartenplatz 2, 68161 Mannheim, Germany Phone +49 (0) 621-4106 - 0 (switchboard) www.mcon-mannheim.de

### Conference office

Congress Center Rosengarten, lobby Phone +49 (0) 621-4106-5002 Fax +49 (0) 621-4106-5901

### Office hours:

Wednesday, 21<sup>st</sup> March 2007 8:00 am to 8:00 pm Thursday, 22<sup>nd</sup> March 2007 8:00 am to 2:00 pm

### Conference languages

German and English (with simultaneous translation)

## Note

Make best use of your time in Mannheim for contacts and save yourself waiting time when the conference begins by picking up your conference documents on Tuesday, 20th March 2007 between 6:00 pm and 9:00 pm at our late check-in facility in the Dorint Kongress-Hotel Mannheim.

## Room reservation

Conference hotel
Dorint Kongress-Hotel Mannheim
Friedrichsring 6, 68161 Mannheim, Germany
Phone +49 (0) 621-12510
Fax +49 (0) 621-1251100
www.accorhotels.com

We have a number of rooms reserved at the Dorint Kongress-Hotel, Mannheim, at a special rate of  $\in$  161.50 per single /  $\in$  178,00 per double room including breakfast (please quote the booking code: vdi2007).

Early reservation of rooms is recommended.

#### Accommodation service

m:con Hotelreservierung Rosengartenplatz 2 68161 Mannheim Telephone +49 (0) 621-4106 -8641 Fax +49 (0) 621-4106 -80222

## Getting there

By car:

A 5 - A 6 - A 61

By train:

From the station it is 0.8 km to the Congress Center Rosengarten

By air:

Airport in Frankfurt/Main, then A 5 - 80 km to Mannheim

### Parking

We have reserved parking places for you in the 'Rosengarten' and 'Wasserturm' underground car parks which have direct access to the Mannheim Congress Center. The special price is € 16.80 + VAT. The parking ticket is valid from 1 pm March 20th to 5 pm March 22nd and entitles the holder to come and go in either car park as desired. The number of parking places is limited so make sure you book a place early with your conference application. Orders will be processed on a first come, first served basis.



Payment should be made by bank transfer upon receipt of the invoice. Please note that the bank transfer form must bear the invoice number. The local conference office cannot accept cash payments but can accept credit card payment by our non-EU foreign attendees (American Express, Diners Club, Eurocard/ MasterCard and Visa).

#### Terms and Conditions

With registration, the participant accepts the terms and conditions of VDI Wissensforum IWB GmbH. Cancellations must be made in writing. If registration is cancelled 14 days prior to commencement of the conference, an administration fee of EURO 50 plus VAT will be charged. After this date, the invoiced participation fee is payable in full. The postmark is decisive. In this case, the conference documents will be sent against return. It is possible to have someone else attend the course instead of a registered person by agreement. If a course has to be cancelled due to unforeseen circumstances, participants will be immediately notified. In this case, the participation fee will be refunded if already paid. In exceptional cases, we reserve the right to change lecturers and/or the conference content without prior notice. In any event, the liability of VDI Wissensforum IWB GmbH is limited solely to the participation fee.





## Anmeldeformular/Registration form International Conference Plastics in Automotive Engineering

March 21<sup>st</sup> and 22<sup>nd</sup>, 2007 · Mannheim, Germany Telefax: +49 (0) 211 62 14-1 54

(IWB) 328704

Updated details on the International Conference on Plastics in Automotive Engineering can be found under:

## www.vdi.de/automotive

- Conference topics and schedule
- Exhibition

Date/Datum



- EXHIBITION			
Surname/Nachname	First Name/Vorname	Title/Ti	tel
Company/Firma/Institut			
Department/Abteilung des Teilnehmers	Country/Land		
Post Code, City/PLZ, Ort	P.O. Box or Street/F	Postfach oder Straße	
Phone/Telefon	Fax/E-Mail		
Conference Fees/Teilnahmegebühren Fees plus VAT/Preise zzgl. MwSt. including coffee breaks, lunch, welcome-reception and proceedings			
1 Charge for attending / Teilnahmegebühr			870,00
2 VDI, FISITA, EAEC members / VDI, FISITA, EAEC-Mitgliede	٢		783,00
3 VDI, FISITA, EAEC members at Universities / VDI, FISITA,	EAEC-Mitglieder von Hoo	hschulen	435,00
N1 Parking ticket (special price) from March 21 - 22, 2007 / Parkticket (Sonderpreis) gültig vom 21 22. März 2007			16,80
N2 Automotive Night, March 20 <sup>th</sup> 2007, Zeughaus			15,00
Für studentische VDI-Mitglieder haben wir ein Kontingent von Freikarten reserviert. Bitte nehmen Sie frühzeitig Kontakt auf mit Gabriele Tietze-Schmitz, Tel.: +49 (0) 211 6241 - 514, kunststoffe@vdi.de			
For price levels 2 and 3 you must quote your membership society and membership no./Für die Preisstufen 2 und 3 ist die Angabe der VDI-Mitgliedsnummer erforderlich.			
VDI member-no./VDI-Mitglied-Nummer			
FISITA/EAEC society:	member-no.:		
Please send me information about the 6-months free VDI membership./			
Bitte senden Sie mir Informationen für die 6-monatige kostenfreie VDI-Mitgliedschaft zu.			
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amount of: EUR	Valid from date	expiry date	
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# Wissensforum

Tagungskalender 2007 Kunststofftechnik



Polyurethan 24./25.01.2007 in Bad Neuenahr mit Fachausstellung



Spritzgießen 14./15.02.2007 in Baden-Baden mit Fachausstellung



Kunststoffe im Automobilbau 21./22.03.2007 in Mannheim mit Fachausstellung



Blasformtechnik 08./09.05.2007 in Baden-Baden



Extrusionstechnik 13./14.06.2007 in Neu-Ulm



Elastomerspecial 23.10.2007 in Düsseldorf



Aufbereitungstechnik 28./29.11.2007 in Köln