

DGM

A Key Event of the **Aluminium Week 2008**

2nd International Conference on

Aluminium



in conjunction with the 7th World Trade Fair
ALUMINIUM 2008



24 Sept 2008, Essen



Deutsche Gesellschaft
für Materialkunde eV
www.dgm.de/aluminium

DGM Deutsche Gesellschaft
für Materialkunde eV

Gesamtverband der
Aluminiumindustrie eV

GDA GESAMTVERBAND DER
ALUMINIUMINDUSTRIE e.V.

Reed Exhibitions Deutschland
GmbH

 Reed Exhibitions

General Information

Conference Location

Messe Essen
Conference Centre West
Norbertstraße
45131 Essen, Germany
(adjacent to the exhibition halls)

Conference Language

The conference language will be English.

Conference Office

The conference office will be located on the second floor in the foyer.

Opening hours:

- Tuesday, 23 September:
11:30 to 17:00 h
- Wednesday, 24 September:
08:00 to 17:00 h

Organising Society

DGM - Deutsche Gesellschaft
für Materialkunde e.V.
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Conference Fees

Industry:

Full Day: 400 EUR
Half Day: 250 EUR

University:

Full Day: 300 EUR
Half Day: 200 EUR
Student: 120 EUR



Preface

Following the very successful conference held in conjunction with the ALUMINIUM Trade Fair in 2006, DGM resumes organising this international conference again. The Aluminium Conference 2008 will cover a compact one day lecture programme preferably on application related presentations. The major emphasis is on the aircraft and automotive industry that govern the morning and the afternoon programme, respectively. Particular emphasis has also been put on surface engineering presented in the morning. The programme is completed by keynotes on the Global and Technical Development presented by high ranking representatives of the Aluminium industry. The half day programmes can be booked separately.

The ALUMINIUM Conference and Trade Fair both run in parallel to the International Conference on Aluminium Alloys - ICAA11. This prominent conference series takes place every second year at changing international aluminium related countries. Germany has been invited to become host of ICAA11. Being held at RWTH Aachen University about 80 km from Essen, it has attracted more than 400 presentations. Altogether, the ALUMINIUM Fair, the Aluminium Conference and ICAA11 form the Aluminium Week 2008.

Welcome to both the Aluminium Conference and ICAA11

Programme Committee



J. Hirsch

Hydro Aluminium
Deutschland GmbH,
Bonn (Chairman)



Günter Deinzer

Audi AG, Ingolstadt



W. Heidrich

Gesamtverband der
Aluminiumindustrie
e.V., Düsseldorf



P. P. Schepp

Deutsche Gesell-
schaft für Material-
kunde, Frankfurt



B. Wirtz

Reed Exhibitions
Deutschland,
Düsseldorf



Programme Overview

	Monday 22 Sept 2008	Tuesday 23 Sept 2008	Wednesday 24 Sept 2008	Thursday 25 Sept 2008
Morning	4 Plenary Lectures on Market Areas	Plenary Lecture Parallel Sessions	Session on Fundamental Aspects	Plenary Lecture Parallel Sessions
Afternoon	Parallel Sessions	Parallel Sessions	Local Day Trips	Parallel Sessions
Evening	Welcome Reception	Oral Poster Sessions Poster Evening	Conference Dinner	Plenary Lecture Closing Address

ICAA11 offers a global perspective on the current focus of research and development with a major emphasis on in-depth understanding of conventional and advanced aluminium alloys. On Monday, it includes a number of excellent plenary presentations on market areas. Monday may therefore be booked individually.

The Call for Papers has generated 400 papers originating from 35 countries that cover a broad range of topics. So far, over 500 participants are registered.

On Friday, it will be complemented by technical visits to aluminium plants and aluminium related research institutes in Germany.

More information is available at www.dgm.de/icaa11

Topics

- A** Alloy Development
- B** Casting and Solidification
- C** Thermomechanical Processing
- D** Simulation and Modelling
- E** Phase Transformation
- F** Recrystallisation and Texture
- G** Mechanical Properties
- H** Forming and Formability
- I** Characterisation
- K** Joining Technology
- L** Corrosion and Surface
- N** Novel Materials
- O** Applications
- Q** Recycling



23 Sept

24 Sept

25 Sept

ALUMINIUM World Trade Fair, Essen

Aluminium Conference (9:00-17:10)

Aircraft

Keynote Lectures:

- Vision of Future Aircraft Structure
- Enigma 787 Dreamliner

Surface Engineering

Lectures:

- New Methods for the Surface Finishing of Aluminum Casted Parts by Slide Grinding
- Environmental Compliance without Compromising Quality in Anodising and Pretreatment
- Durable good looks is what it's all about – Powder Coating Solutions for the 21 century
- BEHROXAL - Functional Surface Treatment for Aluminium Heat Exchangers

Global and Technical Development

Keynote Lectures:

- Efficient Solutions for Customers and the Climate
- Novelis Fusion TM - The New Aluminium

Automotive

Keynote Lecture:

- The Modern Body Lightweight Design as a Challenge for the Aluminium Industry

Lectures:

- High Strength Crashworthy Aluminum Profiles for Automotive Applications
- The Karmann Aluminium Concept Study
- Recent Developments in AlSiMg Die-casting Alloys
- Influence of the Casting Process on Mechanical and Fatigue Strength of Aluminium Based Components for Automotive Applications

Global and Technical Development

Lecture:

- Successfull Dry Restart of the Hamburg Aluminium Smelter

Keynote Lecture:

- Which Globalisation for the Aluminium Industry?

Morning

Afternoon

Lecture Hall Berlin

Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)

9:00 Start of the Conference, Welcome

Keynote Lecture

9:10 **Alcan Vision of Future Aircraft Structure**

J.-C. Ehrström (Sp), T. Warner, Alcan SA, Voreppe (France); F. Eberl, P. Lequeu, Alcan Rhenalu, Issoire (France)



The proportion of metallic structures in large commercial airframes currently in development is significantly lower than in comparable previous generation aircraft. Our analysis of the underlying reasons indicates that the airframers' decisions are based on both quantifiable arguments (technical and economic) and less quantifiable parameters. Technically, it is argued that CFRP panels have a significant weight advantage particularly in damage tolerance- or stiffness-dominated parts. Equally, it is generally recognized that metallic solutions are currently lower cost. Less quantifiable arguments include: the future potential of CFRP structures, the concomitant technological gap with newcomers to the large commercial airframe business that could be created by developing such solutions, and the advantage of CFRP's relative novelty in obtaining government support for development activities.

This analysis has led Alcan to respond around four principal axes. Firstly, in response to the weight challenge very competitive metallic solutions are developed using optimum existing technologies (alloys, design, assembly techniques) in innovative ways. Secondly, in many cases, combinations of materials represent optimum weight-cost solutions; to enable this, technologies for hybrid joining need to be optimized. Thirdly, we are making increased efforts on breakthrough metallic technologies along with developing a more aggressive communication on metallic structures' advantages. Finally, a more balanced co-development strategy is introduced, partially redeploying resources from the development of generic solutions for large airframes to more targeted projects addressing a greater variety of specific customer developments.

Lecture Hall Berlin

Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)

Keynote Lecture

9:40

Enigma 787 Dreamliner

G. Djukanovic, Aluminium Market Analyst, Podgorica (Montenegro)



It has been passed almost a decade since Boeing introduced its capital project 787 Dreamliner, designated as 7E7 until recently, as the first commercial aircraft being made by prevailing composite materials.

Suspensions in validity of prevailing use of composite materials in commercial airplanes recently were intensified by an interview for a cable TV station of former Boeing's engineer Vincent Weldon who claims that Boeing should not switch proved aluminium alloy (duraluminium) with new composite materials.

In air industry the main composite material reinforced plastics with carbon fiber called "Carbon Fiber Reinforced Plastics". Plastics, carbon fiber and resin are pressed and heated in special ovens making laminar composite mass (similar to plywood).

Despite of all, use of composite materials in airplanes is increasing in each new model. For instance, world's largest airplane Airbus A 380, has "only" a quarter of composite materials.

To conclude, regardless all tests, the aircraft will pass and safety certificates it may earn, regardless all arguments for and against, it is certain that it will pass several years of its exploitation prior the Dreamliner really proves in the air it is safe for commercial transportation. There is no alternative way of proving this with absolute certainty. In this particular case the time is the only judge.

Lecture Hall Berlin

Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)

Lecture

10:10

New Methods for the Surface Finishing of Aluminum Casted Parts by Slide Grinding

A. Höing, Spaleck Oberflächentechnik GmbH & Co.KG, Bocholt (Germany)



The aluminium casting industry has many established methods for refining surfaces of metal and plastic parts, including the effective process of mass finishing. The technology of vibratory finishing, or slide grinding (to use a literal translation from German), has had many new developments in the past few years, and there is still potential for future innovation in this field of surface finishing.

Many aluminium casted products are manufactured for high-end industry purposes like the automotive industry, where different high-quality standards had to be maintained. Here the special demands are often so superior, that the old-fashioned batch treatment in finishing bowls is not longer up to date. The parts must not touch each other. They must not fall and damage. Despite high volume mass finishing treatment, they have to be handled in the most sensitive, and at the same time, the most efficient way.

The flow-through machines from Spaleck supply two main advantages. Within these machines, there is a steady flow of treated parts, similar to parts on a conveyor belt, which keep their distance and are not able to damage each other by contact. The second main advantage is that the steady flow of parts can easily be integrated into fully automatic industrial production lines. If the machine receives a part in a certain time interval, it is passing on a part in exactly that time interval to the following machine or storage. Washing machines, driers, conveyors, storage hoppers, quality control machines, robotics and every kind of pre- or after-treatment or handling can be combined with such a finishing machine.

Lecture Hall Berlin

Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)

Lecture

10:30

Environmental Compliance without Compromising Quality in Anodising and Pretreatment

T. Willumeit, Chemetall GmbH, Frankfurt (Germany)



Chemetall is a global company which is focused on using speciality chemicals to bring real value to its customers. This has made the company a leader in products and processes for the chemical treatment of metal surfaces and plastics, as well as for selected fields of fine chemistry such as Lithium and Caesium compounds. Until recently, hexavalent chromium was used throughout the industry as a highly effective and flexible approach to surface treatment. New European laws have now made the use of this chemical impossible for many applications. Together with customers, and in collaboration with Universities and respected industry associations such as Qualicoat, GSB and Qualanod, Chemetall has worked hard to successfully create new environmentally acceptable chromium free processes for the global market which can perform to the same exacting standards as the hexavalent chromium compounds they replace.

In a first generation of products, a highly effective colourless pretreatment system was developed. However, consistency of performance is extremely important for customers and Chemetall carried out extensive research to develop a second generation of this technology that not only delivers the expected level of performance, but also facilitates consistency of pretreatment coating weight by producing a coating which is easily visible with the naked eye. This technology provides a coating which has an attractive golden appearance which looks very similar to chromium, but without any chrome being present. Now operators can see at a glance if the coating is uniform and consistent, which helps ensure that finished product is of the highest possible standard, and gives an instant warning of possible process problems. This new chemical is already available for all types of existing process lines and is Qualicoat approved.

10:50

[Coffee Break and Poster Show](#)

Lecture Hall Berlin

Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)

Lecture

11:20

Durable good looks is what it's all about – Powder Coating Solutions for the 21 century

G. Salzmann, IGP Pulvertechnik AG, Wil (Switzerland)



Rising UV radiation and growths in emissions make cleaning of aluminium parts on facades at regular intervals as an absolute must. If this is not done, dirt can penetrate the surfaces of coated substrates under the influence of the weather and cause aesthetic and functional problems, including a loss of glossiness, changes in the surface structure and accelerated corrosion.

IGP-DURA@clean is aimed at offering a dirt-repelling surface that is easy to clean and at the same time exhibits superb weather resistance. Clean façade surfaces look better and give a more sculptured appearance due to the even reflection of light. For the building owners, the façade performance translates into an opportunity of individual expression.

This easy to clean effect is integrated as a standard in many series of IGP.

More weather stable solutions than polyester powders are used for facades. The market asks for "Durable good looks is what it's all about - powder coating solutions for the 21 century".

Lecture Hall Berlin

Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)

Lecture

11:40

Functional Surface Treatment for Aluminium Heat Exchangers

O. Mamber, Behr GmbH & Co. KG, Stuttgart (Germany)



Under the End of Life Vehicles Directive (2000/53/EC), as from 1 July 2007 it is not any more permissible for any vehicle component to contain hexavalent chromium.

With the newly developed BehrOxal® surface coating process, an environment-friendly corrosion protecting coating is generated on the surface of aluminium evaporators for vehicle air conditioners.

The coating process is based on the activation of the aluminium surface by applying a high temperature, and a following formation of a homogenous oxide layer by using an innovative spray application of heavy metal free chemicals. Like the coating it generates, the process itself is environment-friendly, in contrast to most other coating technologies for which frequently highly acidic and aggressive chemicals are needed.

The BehrOxal® surface coating shows improved corrosion protection in SWAAT compared with a yellow chromate coating.

Moreover, the generated surface is hydrophilic, so promoting drainage of condensate from the evaporator. The water film that continually runs off from the evaporator surface has a self-cleaning action that at least in part washes away pollution and odorous substances.

The low intrinsic odour of the new coating and the fact that it hinders generation of external odours are genuine gains for driving comfort.

Wednesday, 24 September 2008

Topic C - Global and Technical Development

Lecture Hall Berlin

Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)

Keynote Lecture

12:00

Efficient Solutions for Customers and the Climate

O. Bell, Hydro, Cologne (Germany)



Climate challenges and rising prices, for raw materials onto fabricated industrial goods, require us to make more efficient use of our resources.

Aluminium is contributing well, as one of the most versatile and high-performing metals, not least because it is renewable. The keynote gives examples from several product areas, primarily within the rolled products sector, and reflects, how the aluminium industry works to underpin and further strengthen our benefit to the markets and world we serve.

Wednesday, 24 September 2008

Topic C - Global and Technical Development

Lecture Hall Berlin

Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)

Keynote Lecture

12:30

Novelis Fusion™ - The New Aluminium

A. de Weert, Novelis Europe, Zürich (Switzerland)



Novelis Fusion™ is a revolutionary technology that enables different aluminium alloy layers to be cast simultaneously into a single ingot. Because Novelis Fusion uses liquid metal technology, the bond between alloy layers is a true metallurgical bond with a uniform interface. This means that Novelis Fusion is available with alloys that cannot be clad conventionally. Novelis Fusion ingot is then rolled into multi-alloy products with combinations of core properties and surface characteristics that were not possible before.

This keynote addresses this significant technical development, outlining the process and global manufacturing development. In addition, it covers examples of how engineers and designers are using Novelis Fusion to open up new applications for aluminium.

13:00

[Lunch and Postershow](#)

Lecture Hall Berlin

Chair: G. Deinzer, Audi AG, Ingolstadt (Germany)

Keynote Lecture

14:00

The Modern Body Lightweight Design as Challenge for the Aluminium Industry

L.-E. Elend, Audi AG, Neckarsulm (Germany)



Our world and especially the automotive industry are changing permanently. Global trends like the reduction of greenhouse gases, shortage of resources, urbanisation and changes in infrastructures are affecting the automotive industry and must be confronted by developing intelligent solutions. Integration of functions in body design including the idea of integrating attributes defining a vehicle's market position, lead to an increase of material efficiency in the majority of cases. The criteria governing the correct choice of materials are immensely complex. One basic requirement for materials is, that robustly meet the specified range of functions. The next overriding issue is which of these materials is the most economical for the overall business case. As a result of the extreme differences in global market requirements, further differentiation may moreover appear advisable. One overriding goal in respect of preserving resources and reducing CO2 emissions is lightweight design. Based on the NEDC assumptions, reducing the weight of a vehicle featuring today's drive concepts by 100 kg could cut CO2 emissions by 8.8 g/km. In practice, the potential is actually higher.

This paper gives an overview and an outlook on the range of materials with potential for use in lightweight design. In each instance we attach considerable importance to using the lowest possible amount of the right material for the function to be met reliably.

For the energy balance to be used as a decision-making parameter when choosing materials, the entire process chain from a semi finished product to a fully finished car body including operating time must be taken into account. Applying the above criteria in the selection of the materials for future body structures will logically lead to hybrid material concepts.

Lecture Hall Berlin

Chair: G. Deinzer, Audi AG, Ingolstadt (Germany)

Lecture

14:30

High Strength Crashworthy Aluminum Profiles for Automotive Applications

G. Schroeder (V), Corus Aluminium Voerde GmbH (Germany); E. Hoch, F. Soldan, F.W. Brökelmann Aluminium GmbH & Co. KG, Ense-Höingen (Germany)



The number of automotive applications for aluminum profiles is still growing. The structural weight of the cars has to be reduced due to the need of lower fuel consumption as well as lower green house gas emissions. The safety standard remains on a high level. Aluminum profiles have to demonstrate crashworthiness for several applications in order to fulfil today's safety requirements. The crashworthiness has been specified for aluminum profiles related to different strength levels. Low strength crashworthy profiles are available on market. For further weight reduction high strength crashworthy profiles are demanded anticipating a high market potential.

The development of an alloy for high strength profiles has to combine the demand of increased strength with crashworthiness. Simply upscaling of existing alloys leads to small process windows which could cause serious problems meeting the crashworthiness. The complete process route for extruded profiles has to be carefully considered beginning with the alloy composition. The analysis should be focused as well on the homogenisation, the extrusion temperature, the quenching at the press exit and the artificial ageing. Results can be easily transferred in a joint project between a cast house and an extrusion plant monitoring the development process.

This paper will present the successful development of an alloy for high strength crashworthy profiles as a result of the cooperation between F.W. Brökelmann and Corus Aluminium Voerde considering the complete production process.

Lecture Hall Berlin

Chair: G. Deinzer, Audi AG, Ingolstadt (Germany)

Lecture

14:50

The Karmann Aluminium Concept Study

M. Exner (V), C. Schäfers, M. Schirmer,
Wilhelm Karmann GmbH, Osnabrück
(Germany)

Automotive lightweight design is relevant at the development of new car bodies.

Present discussions concerning the reduction of CO₂ output and the fleet consumption contribute considerably to that. With the scaleable steel spaceframe 'ScaLight' Karmann has shown an alternative to realise economical steel lightweight design at appropriate units. But especially for low and lowest volume cars aluminium offers further weight advantages.

The economic efficiency of aluminium car body structures are fundamentally influenced by the semifinished products and joining concepts, which have to be aligned on the unit scenario.

With the aluminium concept study ACS Karmann shows new solutions for aluminium spaceframe structures with new material concepts and innovative joining technologies.

Lecture Hall Berlin

Chair: G. Deinzer, Audi AG, Ingolstadt (Germany)

Lecture

15:10

Recent developments in AlSiMg die-casting Alloys

H.I. Laukli, S. Brusethaug, Hydro, Sundal-soera (Norway)

The AlSi9MgMn alloy for high-pressure die-casting (HPDC) has received attention over the last years as being a robust alloy for automotive applications. The alloy has traditionally been used in a T6- or an overaged T7 heat treated condition to allow for connecting the cast component to other structural members as well as to obtain sufficient strength and ductility in deformation. Whilst the property requirements for automotive applications usually go way beyond typical lab-scale tensile properties, a simple uniaxial tensile test is still very often referred to when mechanical properties of the AlSi9MgMn alloy are presented and discussed.

In order to capture the true structural deformation behaviour of an alloy it is necessary to test the alloy generically and in different deformation modes. The present paper emphasises crash- and strength relevant applications in the presentation of AlSi9MgMn alloy developments done by Hydro Aluminium. The AlSi9MgMn alloy focused here maximises the benefit of having optimised contents of the primary alloying elements. By comparison of different temper conditions of the material subjected to different characterisation and testing methods, strength- and crash relevant mechanical properties have been identified.

Lecture Hall Berlin

Chair: G. Deinzer, Audi AG, Ingolstadt (Germany)

Lecture

15:30

Influence of Casting Process on Mechanical and Fatigue Strength of Aluminium Based Components for Automotive Applications

M. Rosso (V), I. Peter, Politecnico di Torino (Italy); R. Molina, TEK SID Aluminium SpA, Carmagnola (Italy)



The mechanical and fatigue strength of Al-based casting alloys can be directly associated to the possible presence of defects and to their microstructural features. In this context some parameters, such as secondary dendrite arm spacing (SDAS), surface defects, morphology and the position of internal porosity assume an important characteristics concerning the fatigue life of these alloys. The work aims to focus the influence of the casting process on the mechanical properties of aluminium castings for automotive applications. Microstructural features and tensile properties have been observed and tested mainly on AlSi based alloys, moreover axial fatigue tests have been done on suitable series of samples. As specimens for both fatigue and mechanical tests have been drawn directly from production components, samples dimensions were the maximum allowed by component dimensions. On the transversal sections of samples the metallographic analysis has been performed, for the measurements of size and microstructural constituents, such as secondary dendrite arm spacing and porosity, have been carried out by means of optical microscopy, supported by an image analysis software.

The presence of defects, such as shrinkage cavities, acts as starting point for the fracture crack initiation and propagation, contributing to reduce their fatigue strength. The capability to control the level and the size of defects, as well as to optimise the microstructure features are the most important actions to improve performances and reliability of aluminium cast components.

15:50

Coffee Break and Postershow

Lecture Hall Berlin

Chair: G. Deinzer, Audi AG, Ingolstadt (Germany)

Lecture

16:20

Successful dry Restart of the Hamburg Aluminium Smelter

T. Reek (V), J. Prepeneit, TRIMET ALUMINIUM AG, Hamburg (Germany); D. Eisma, TRIMET ALUMINIUM AG, Essen (Germany)



In December 2005, the 133,000 tpy smelter in Hamburg, Germany was shut-down. The phase-out process was very controlled and efficient, which was essential for the restart. The assets were acquired by TRIMET ALUMINIUM AG late in 2006. Beginning of March 2007, only 3 months after the transaction took place, the first pot was started successfully. The first two pots were specially prepared with a full-shadow resistor-coke bed for electrical preheating. Temperatures of above 1100 °C were reached and pure synthetic cryolite was molten. Seven newly relined pots were started before the first shut down cell was restarted with its original lining. Depending on the condition of the old cathodes either gas or electrical preheating was used.

This paper highlights the experiences of the dry startup and the challenges involved in restarting an idle smelter in record time without any pot failures.

Wednesday, 24 September 2008

Topic B - Global and Technical Development

Lecture Hall Berlin

Chair: G. Deinzer, Audi AG, Ingolstadt (Germany)

Keynote Lecture

16:40

Which Globalisation for the Aluminium Industry?

B.G. Rüttimann, Alcan Engineered Products, Singen (Germany)



The aluminium industry is at present undergoing a fundamental transformation. After the concentration of vertically integrated aluminium companies we presently experience on the one hand the formation of major aluminium mining group and on the other the creation of process-technology specialised groups for the semi-finished sector. Background to these trends are mainly the control of raw material sources and the increased competition for maximising value and profit.

In his presentation, Dr. B.G. Rüttimann challenges the different competitive systems and presents what the aluminium industry of the future could look like.

17:10

[End of the Conference](#)

On display during the entire Conference

Materials Technology

- PO 71 **PLANCAST® X-TREME 7xxx**
G. Florl, SAG Aluminium Lend GmbH & Co KG (Austria)
- PO 73 **A possibility of forming structure and mechanical properties of aluminum alloys by the action of the pulsemagnetic field on a melt**
V.A. Glushchenkov (V), A. Igolkin, D. Chernikov, A. Popov, Samara State Aerospace University (Russia) et al.

Automotive

- PO 74 **Strain Development in AA5754 Alloys**
G. Avramovic-Cingara (V), D.S. Wilkinson, McMaster University, Hamilton (Canada)

Processing

- PO 77 **Effect of temperature on force-displacement plot and cup geometry during deep-drawing**
M. Ghosh (V), A. Miroux, Delft University of Technology (Netherlands); R.J. Werkhoven, P.J. Bolt, TNO Eindhoven (Netherlands) et al
- PO 84 **Endoskopie an bearbeiteten Gussteilen**
G. Dippel, GDO B.V., WX Eyselshoven (Netherlands)
- PO 87 **Castadur-30: Die selbstaushärtende duktile Aluminium Gusslegierung**
P. Kohlmann (V), R. Franke, Aluminium Rheinfelden GmbH (Germany)
- PO 88 **Optimisation of the thermal process during recycling of aluminium scrap via pyrolysis**
A. Giese, Gaswärme-Institut e. V. Essen (Germany)
- PO 91 **Highly Effective Technologies of Welding of Aluminium Alloys**
R. Saidov (V), Tashkent Technical University (Uzbekistan); U. Semmler, M. Kusch, K.-J. Matthes, Chemnitz Technology University (Germany)

On display during the entire Conference

Processing

- PO 92 **New Generation of Eddy Current Molten Metal Level Concepts and Advanced Functions**
M. Dussud, Avemis, Saint Martin en Haut (France)
- PO 95 **"Moby-Dick" Innovative Continuous Ageing oven For Extruded Profiles**
M. Spizzo, OMS Impianti SRL, Artegna (Italy)
- PO 96 **Double Puller Systems. Which one to Choose?**
M. Spizzo, OMS Impianti SRL, Artegna (Italy)

Global and Technical Development

- PO 119 **Integrated Extruder Plant Automation with MoMAS®**
M. Pandit, University of Kaiserslautern (Germany)

Contributing to Aluminium Week 2008:

7th World Trade Fair
23-25 September 2008

Exhibition Centre Essen, Germany



ALUMINIUM 2008

More than 860 exhibitors from 46 countries will present approx 9,000 innovative products, ideas, product solutions, further technological developments and latest trends. ALUMINIUM trade fair is the most important platform for the aluminium industry and its applications as automotive & transport, building & construction, machinery and electrical engineering all over the world.

At ALUMINIUM 2008, you can experience the complete value chain of the material - from the raw material to the end products. This establishes the unique nature of the trade fair for the international aluminium world. More than 16,000 visitors come from over 100 countries to discover product solutions and innovative approaches for their companies, since only here they will discover "All about Aluminium".

Tickets at: www.aluminium-messe.com/tickets

Contact:

Britta Wirtz, Director

Ulrike Hülbach, Project Manager

Tickets at: www.aluminium-messe.com/tickets

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