

DGM

Programme

International Conference on

Aluminium

in conjunction with the 6th World Trade Fair

ALUMINIUM 2006



21-22 Sept 2006



Essen, Germany

Deutsche Gesellschaft
für Materialkunde eV

www.dgm.de/aluminium

Gesamtverband der
Aluminiumindustrie eV

www.aluinfo.de

Reed Exhibitions
Deutschland GmbH

www.aluminium2006.com



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Preface



Following very successful conferences on Titanium and Magnesium, DGM has extended the topics of its conference series on non-ferrous metals by launching the first international conference on Aluminium.

The lecture programme will cover subjects ranging from the development of alloys to processing techniques and application. But also innovative near-net-shaping processes such as casting and forming will be given broad consideration. Fields of application particularly address the aircraft and automotive industry. Simulation and modelling of both materials properties and processing steps will demonstrate how to optimise and to speed up industrial production processes. Recycling and environmental aspects will be referred to as an integral part of each of the application areas. Not last, however, tailoring materials for purpose by specific manipulation of microstructures, will be in the focus of the conference programme. This includes aluminium based composite materials and increasingly the combination of aluminium with other materials. Joining and surface engineering processes will complete the range of challenging subjects.

Both industry and academia have contributed to the conference programme with their latest developments by submitting more than 130 papers. Each submitted paper will be presented as both a short lecture and a poster that will be individually discussed in a subsequent poster session next to the lecture hall. The papers make up four major topics that will be introduced by specific keynote lectures followed by a number of highlight lectures.

The Aluminium
Programme Committee

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:

- Wednesday, 20 September:
12:00 to 17:00 h
- Thursday, 21 September:
08:00 to 17:00 h
- Friday, 22 September:
08:00 to 17:00 h

Organising Society

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Programme Overview

	20 Sept	21 Sept	22 Sept
	ALUMINIUM World Trade Fair		
	ALUMINIUM Conference		
Morning		Topic A Aircraft A380 and future aircrafts new alloys: Al-Cu-Mg-Li with scandium and zirconium, Al-Mg-Sc, Al-Zn-Mg-Cu superhigh strength, high temperature alloys, laser beam welding, friction stir welding, age creep forming 1 Keynote 5 Highlight Lectures 16 Short Lectures 4 Poster	Topic C Automotive High temperature alloys, Al composites, extrusion, piezoelectric module in die casting. superplastic forming, joining of dissimilar metals 1 Keynote 5 Highlight Lectures 12 Short Lectures 2 Poster
		Topic B Processing Al production, fabrication and enabling technologies: Melting, casting, rolling, extrusion, heat treatment, recycling, surface treatment, joining techniques 1 Keynote 3 Highlight Lectures 27 Short Lectures 2 Poster	Topic D Materials Technology Simulation, spray forming, wrought and cast alloys, surface engineering, alloy development, wrought and cast alloys, microstructure and nanostructure, intermetallic compounds 1 Keynote 3 Highlight Lectures 16 Short Lectures 2 Poster
Afternoon			
Evening	ALUMINIUM Prize Award	Get Together TRIMET/DGM	

Each submitted paper will be presented as both a short lecture and a poster that will be individually discussed in a subsequent poster session next to the lecture hall.

Programme Committee



K. Ehrke
TRIMET ALUMI-
NIUM AG, Essen,
Germany



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Gesamtverband der
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Hydro Aluminium
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Ford Forschungs-
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Reed Exhibitions
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K.-H. von Zengen
European Alumi-
nium Association,
Brussels, Belgium

6th World Trade Fair & Conference
20-22 September 2006
Messe Essen, Germany



ALUMINIUM 2006

Innovations, Technologies, Applications

Presented by more than 600 exhibitors from around 40 countries, covering the whole spectrum of the production chain at the show:

- Raw materials and primary metal products
- Technologies for aluminium extracting, processing and refining
 - Rolling mill technology
 - Extrusion and drawing
 - Forging and extrusion moulding
 - Sawing and cutting
 - Joining technology
 - Surface techniques
- Semi-finished products, cast parts, aluminium foils, strips
- Composites, tubes, cans, extrusion products
- Packaging
- Light-metals trade & recycling
- Applications for transport and the building & construction industry, machinery, electrical engineering etc.
- Services, consulting, media & industry associations

Come by and find innovative solutions, see the latest trends and meet new suppliers.

www.aluminium2006.com

Contact:

Britta Wirtz, Director
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Thursday, 21 September 2006
Topic A - Aircraft

Thursday Morning	Lecture Hall Berlin: 9:00 - 11:40	
	Chair: K.-H. Rendigs, Airbus Deutschland GmbH, Bremen (Germany)	
	Keynote Lecture	
	9:00	Aluminium Structures for the Airbus A380 and Future Aircraft J. Schumacher, Airbus Deutschland GmbH, Bremen (Germany)
	Highlight Lectures	
	9:30	Recently-developed Aluminium Solutions for Aerospace Applications T. Warner (Sp), F. Eberl, J.C. Ehrstrom, Alcan CRV, Voreppe (France); P. Lassinck, P. Lequeu, H. Ribes, Alcan Rhenalu, Issoire (France)
	9:50	Advanced Aluminum and Hybrid Materials for Future Aerostructures J. Liu, Alcoa Inc, New Castle, PA (USA)
	10:10	Coffee Break
	Highlight Lectures	
	10:40	High Temperature Aluminum Alloy 2016 (Fuchs AK65) for Aerospace Applications L. Dujardin-Lanier, A. Viola, Messier-Bugati, Molsheim (France); M. Hilpert (Sp), G. Terlinde, Otto-Fuchs KG, Meinerzhagen (Germany)
	11:00	Recent Developments in Friction Stir Welding of Thick Section Aluminium Alloys J. Martin (Sp), R. Johnson, J. Perrett, P.L. Threadgill, TWI, Rotherham (UK)
	11:20	Current Status of Laser Beam Welding of Skin-Skin-Joints for Aircraft Al-Fuselages D. Dittrich (Sp), B. Winderlich, B. Brenner, J. Standfuß, Fraunhofer Institute of Material and Beam Technology, Dresden (Germany); J. Hackius, Airbus Deutschland GmbH, Bremen (Germany)

Thursday, 21 September 2006
Topic A - Aircraft

Lecture Hall Berlin: 11:40 - 12:30	
Chair: J. Schumacher, Airbus Deutschland GmbH, Bremen (Germany)	
Short Lectures	
A 1/ 50	Microstructural and Mechanical Characterization of a New Aeronautical 2199 Al-Cu-Li Alloy G. Khelifati (Sp), EADS CCR, Suresnes (France); V. Guillamin, Airbus France, Toulouse (France); L. Nazé, N. Laurain, Ecole de Mines de Paris, Evry (France)
A 2/ 81	Increasing the Strength of Aluminium-Magnesium-Scandium Alloys by Spray Forming and Hot Rolling O. Keßler (Sp), Stiftung Institut für Werkstofftechnik, Bremen (Germany); T. Herding, Corus Aluminium Profiltechnik Bitterfeld GmbH (Germany); H.-W. Zoch, Stiftung Institut für Werkstofftechnik, Bremen (Germany)
A 3/ 47	NanoFims - A New Light and Stiff Aluminium Composite with Nanostructured Inclusions S. Steinbach (Sp), S. Brück, L. Ratke, Deutsches Zentrum für Luft- und Raumfahrt e.V., Köln (Germany)
A 4/ 49	Lightweight Materials Using Metal Foam - APM J. Baumeister (Sp), K. Stöbener, G. Rausch, M. Busse, Fraunhofer-Institut für Fertigungstechnik und Angewandte Materialforschung, Bremen (Germany)
A 5/ 48	Properties of Laser Beam Welded Butt-Joints of Airframe Aluminium Alloys AA6056 and AA6013 W. Vaidya (Sp), M. Kocak, GKSS-Forschungszentrum Geesthacht GmbH (Germany); J. Hackius, Airbus Deutschland, Bremen (Germany)
A 6/ 89	Microstructural Features and Strength of Thick Section Welds of Al-Li Alloy M. Schaper, Technische Universität Dresden (Germany); G. Padmanabham (Sp), ARCI, Hyderabad (India); S. Pandey, Indian Institute of Technology, Delhi (India); E. Simmchen, Technische Universität Dresden (Germany)

Thursday Morning

Thursday, 21 September 2006
Topic A - Aircraft

Thursday Morning	Lecture Hall Berlin: 11:40 - 12:30	
	Chair: J. Schumacher, Airbus Deutschland GmbH, Bremen (Germany)	
	Short Lectures	
	A 7/ 108	Contribution to Soldering of Aluminum Alloys and Aluminium Matrix Composites Produced by ECAP B. Wielage (Sp), I. Hoyer, S. Weis, Technische Universität Chemnitz (Germany)
	A 8/ 109	Extension of the Process Limits for Laser Brazing of Aluminium Alloys D. Donst (Sp), F. Klocke, A. Castell-Codesal, Fraunhofer Institute for Production Technology IPT, Aachen (Germany)
	A 9/ 130	Direct Chill Casting of CLAD Ingot R. Wagstaff (Sp), Novelis, Spokane, WA (USA); D.J. Lloyd, Novelis Global Technology Centre, Kingston (Canada); T.F. Bischoff, Wagstaff Inc., Spokane, WA (USA)
	A 10/ 51	Improvement of the Fatigue Life of Various Aluminum Alloys by Mechanical Surface Treatments T. Ludian (Sp), L. Wagner, Technische Universität Clausthal, Clausthal-Zellerfeld (Germany)
	A 11/ 57	Advanced Aluminium Plate Heat Treatment Equipment Based on Roller Hearth Furnaces B. Deimann, Otto Junker GmbH, Simmerath-Lammersdorf (Germany)
	A 12/ 72	Non Destructive Characterization of States and Properties of Al-components E. Schneider, Fraunhofer-Institut für zerstörungsfreie Prüfverfahren, Saarbrücken (Germany)
	A 13/ 20	Experiments Researches Regarding the Influence of Thermomechanical Treatments on the Structure and Mechanical Characteristics of the Al-Mg-Zn-Cu Alloys E. Vasilescu, „Dunarea de Jos“ University of Galati (Romania)

Thursday, 21 September 2006

Topic A - Aircraft

Lecture Hall Berlin: 11:40 - 12:30

Chair: J. Schumacher, Airbus Deutschland GmbH,
Bremen (Germany)

Short Lectures

- A 14/ 144 **Fatigue of Aluminium Alloys: The Influence of Hydrogen**
M. Haaks (Sp), C. Zamponi, C. Lenk, S. Sonneberger,
Rheinische Friedrich-Wilhelms-Universität Bonn (Germany);
G. Tempus, Airbus Deutschland, Bremen (Germany);
K. Maier, Rheinische Friedrich-Wilhelms-Universität Bonn
(Germany)
- A 15/ 141 **Balco-An Emerging Supplier for Aerospace**
A.K. Saha (Sp), N. Thirugnanam, Vedanta Group of
Industries (Balco), Korba (India)
- A / 110 **New Aluminum-Lithium Alloy of Al-Cu-Mg-Li System**
B.V. Ovsyannikov (Sp), V.I. Popov, Kamensk-Uralsky
Metallurgical Works, Kamensk-Uralsky, Sverdlovsk Region
(Russian Federation); V.M. Zamyatin, Ural Polytechnical
University, Ekaterinburg (Russian Federation)

Thursday Morning

Thursday, 21 September 2006

Topic A - Aircraft

Thursday Morning	Panorama Hall	
	Posters	
	A / 95	Extruded and Rolled Products Properties of Superhigh-strength Al-Zn-Mg-Cu and Al-Cu-Li-Mg Alloys with Sc and Zr I.N. Fridlander, O.E. Grushko, O.G. Senatorova, V. Sydelnikov (Sp), N.V. Varnavskaya, All-Russian Institute of Aviation Materials, Moscow (Russian Federation)
	A / 97	Friction Stir Welding of a SiC Particle-reinforced Aluminium Matrix Composite G. Biallas, S. Dalkilic, U. Alfaro (Sp), Deutsches Zentrum für Luft- und Raumfahrt e.V., Köln (Germany)
	A / 98	Effect of Post Weld Friction Stir Processing on Hardness and Corrosion Behaviour of Friction Stir Welded AA 2024-T3 Joints G. Biallas, U. Alfaro (Sp), Deutsches Zentrum für Luft- und Raumfahrt e.V., Köln (Germany)
A / 129	Prospects of the Use of Scandium-Bearing Aluminium Alloys in the Industry Y.A. Filatov (Sp), V.I. Yelagin, V.V. Zakharov, T.D. Rostova, L.I. Panasyugina, I.A. Fisenko, VILS, Moscow (Russian Federation)	
All presentations (Short Lectures and Posters) will be discussed in front of the poster panels.		

Thursday, 21 September 2006

Topic B - Processing

Public presentation, free for visitors of the Aluminium Fair.

	Lecture Hall Berlin: 11:40 - 12:30
	Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn
	Special Lecture
12:45	The European Aluminium Technology Platform (EATP) C.L. Kjelsen, Norsk Metallurgisk Selskap, Trondheim (Norway) Unlike the steel industry, aluminium does not have a long history of R&D cooperation. The EATP is the European aluminium industry's vehicle to mobilise and improve the impact of Research & Development investments for sustainability and competitiveness. The mission is to a) provide a European view of technology needs, focusing on 2030 timeframe, which includes identifying and prioritising the actions needed to ensure these are met, b) provide a single European forum to discuss technology issues, rather than remaining at company level, c) generate true inter-company R&D with the related benefits of cost sharing and d) pull the European Aluminium Technology network together so progresses in the same direction (universities as well as R&D institutions). Based on European and global challenges, a vision 2030 has been developed and agreed. Supporting the vision, a technology focused EATP Collaborative Research Agenda (CRA) has been developed. The CRA is meant to provide guidance for all aluminium related scientific and technological research in Europe. Eleven main topics have so far been selected for further processing. Providing enough support, the intention is to develop project proposals to attract public financing, i.e. through the European 7th Framework Programme.
13:00	Lunch Break

Thursday Noon

Thursday, 21 September 2006

Topic B - Processing

	Lecture Hall Berlin: 13:30 - 15:30
	Chair: J. Hirsch, Hydro Aluminium Deutschland GmbH, Bonn (Germany)
	Keynote Lecture
13:30	Development in Process Modeling of Al Sheet Production K.F. Karhausen, Hydro Aluminium Deutschland GmbH, Bonn (Germany)
	Highlight Lectures
14:00	A Breakthrough Technological Innovation in Casting for the Aluminium Rolling Industry E. Mayr, Novelis Europe, Zürich (Switzerland)
14:20	Effect of HIP on Fatigue Reliability of A206 Castings J.T. Staley (Sp), Bodycote Materials Testing, Skokie, IL (USA); M. Tiryakioglu, Robert Morris University, Moon Township (USA); J. LaGoy, Bodycote HIP, Andover (USA)
14:40	Ultrasonic Welding of Aluminium Wires for the Automotive Industry M. Gutensohn (Sp), G. Wagner, D. Eifler, University of Kaiserslautern (Germany)
15:00	Coffee Break

Thursday Afternoon

Thursday, 21 September 2006
Topic B - Processing

Lecture Hall Berlin: 15:30 - 17:00

Chair: K.F. Karhausen, Hydro Aluminium
Deutschland GmbH, Bonn (Germany)

Short Lectures

- B 1/ 38 **Molten Metal Transfer into Furnaces - An Overview of the Various Practices**
S. Augustine, SOLIOS THERMAL, Wolverhampton (UK)
- B 2/ 11 **Automatic Alloying of Iron in Molten Aluminium through the Charge-well of an Electromagnetic Pump**
V. Kevorkijan (Sp), Independent Research Ltd., Maribor (Slovenia); A. Robic, A. Kolmanic, M. Lazeta, Impol d.d., Slovenska Bistrica (Slovenia); M. Stegne, Alumat d.o.o., Bistrica (Slovenia)
- B 3/ 9 **Lenzing FR(R) Metal Splash Fabrics - Setting New Standards in Personal Protection!**
A. Gstettner, Lenzing AG (Austria)
- B 4/ 55 **New Generation of Integrated Ingot and Scrap Melting Furnaces for Aluminium Extrusion and Rolling Mill Plants**
J. de Groot, Thermcon Ovens B.V., Geldermalsen (Netherlands)
- B 5/ 2 **Oxy-combustion Systems in Reverberatory and Rotary Melting Furnaces for Aluminum Recycling**
F. Dentella (Sp), SIAD Spa., Bergamo (Italy); H. Gehres, Praxair, Düsseldorf (Germany)
- B 6/ 58 **Optimized Recycling of Fine Sized Aluminium Scrap Using State of the Art Induction Technology**
W. Schmitz (Sp), D. Trauzeddel, Otto Junker GmbH, Simmerath-Lammersdorf (Germany)
- B 7/ 107 **Hocheffiziente Induktionsheizung für die Aluminiumindustrie: Wirkungsgradverdopplung durch Supraleitung**
C. Fülbier (Sp), C. Buehrer, I. Hahn, J. Kellers, Trithor GmbH, Rheinbach (Germany); W. Witte, Bültmann GmbH, Rheinbach (Germany)

Thursday Afternoon

Thursday, 21 September 2006
Topic B - Processing

Lecture Hall Berlin: 15:30 - 17:00

Chair: K.F. Karhausen, Hydro Aluminium
Deutschland GmbH, Bonn (Germany)

Short Lectures

Thursday Afternoon

- B 8/ 124 **Experience in Retrofitting of Induction Taper Heaters**
M. Whisken, Inductoheat Banyard, Poole (UK)
- B 9/ 88 **Integrated Numerical Simulation Aproach in Impol Aluminium Industry Casthouse**
B. Sarler (Sp), I. Kovacevic, R. Vertnik, S. Hartman, Nova Gorica Polytechnic, Córdoba (Slovenia); I. Vusanovic, University of Montenegro, Podgorica (Serbia and Montenegro); M. Zaloznik, R. Safhalter, E. Slacek, V. Dragojevic, M. Jelen, V. Stmad, A. Robic, IMPOL, Slovenska Bistrica (Slovenia)
- B 10/ 118 **Wagstaff Epsilon™ Ingot Casting Technology: A Mature Mold Design**
C. Shaber, Wagstaff Inc., Spokane, WA (USA)
- B 11/ 40 **New Developments in Aluminium Rolling Technology**
A.E. Barten, Achenbach Buschhütten GmbH, Kreuztal (Germany)
- B 12/ 12 **Slitting Aluminium Foil with Doublers, Trimming Stations, Longitudinal Shear Cutters, Separating Machines and Roll Stands**
H. Herkenrath, Dienes Werke, Overath (Germany)
- B 13/ 56 **Successful and Innovative Overall Designs for Aluminium Extrusion Lines**
S. Köllner, ELHAUS Industrieanlagenbau GmbH, Rielasingen-Worblingen (Germany)
- B 14/ 59 **Retrofit of column ends of Aluminum presses with novel Multi Jackbolt Tensioners**
M. Frei, P&S Vorspannsysteme AG, St. Gallenkappel (Switzerland)

Thursday, 21 September 2006
Topic B - Processing

Lecture Hall Berlin: 15:30 - 17:00

Chair: K.F. Karhausen, Hydro Aluminium
Deutschland GmbH, Bonn (Germany)

Short Lectures

- B 15/ 21 **Aluminium Extrusion with Liquid Nitrogen for Cooling**
T. Böckler, Messer Group GmbH, Krefeld (Germany)
- B 16/ 104 **Innovative Technology for Cleaning Extrusion Dies and Relative Caustic Soda Recovery**
W. Dalla Barba (Sp), F. Vincenzi, Italteco S.r.l, Modena (Italy)
- B 17/ 111 **Aluminium Profile Accessories: Standards**
C. Voet, Fath GmbH, Spalt (Germany)
- B 18/ 41 **New Methods for Extrusion-die Performance Improving**
S. Andreoli (Sp), S. Bellotti, Compes spa, Rodengo Saiano (Italy)
- B 19/ 125 **Lubricant Performance in Cold and Hot Forging of Aluminium Alloys**
O. Jensrud (Sp), H. Valberg, R.K. Uyyuru, NTNU, Trondheim (Norway); M. Lefstad, R. Oesthus, SINTEF, Trondheim (Norway)
- B 20/ 16 **PREMAL and EDEN : Plating of Al with Electroless Ni by Using an Environmental-friendly Pre-treatment and EDEN**
P. Gregg, Franz Oberflächentechnik GmbH & Co. KG, Geretsried (Germany)
- B 21/ 102 **Lubricated Sliding Wear Behavior of 5083 Wrought Aluminum Alloy**
C.N. Panagopoulos (Sp), E.P. Georgiou, E. Zacharis, National Technical University of Athens, Zografos (Greece)

Thursday Afternoon

Thursday, 21 September 2006
Topic B - Processing

Lecture Hall Berlin: 15:30 - 17:00

Chair: K.F. Karhausen, Hydro Aluminium
Deutschland GmbH, Bonn (Germany)

Short Lectures

Thursday Afternoon

- B 22/ 61 **Cold Spraying - A New Process for the Production of High-grade Metallic Coatings**
W. Krömmer (Sp), P. Heinrich, Linde AG, Unterschleißheim (Germany); H. Hoel, CGT GmbH, Köln (Germany)
- B 23/ 3 **Nearly Unlimited Decorative Surface Variety on Aluminium Anodising Sheet**
F.-R. Pohl, PO(H)LY_TEC Ltd., Bovenden (Germany)
- B 24/ 93 **Intermetallic FeAl₃-phases in Steel/Al-alloy Fusion Welds**
L. Agudo (Sp), A. Kostka, Max-Planck-Institute for Iron Research GmbH, Duesseldorf (Germany); D. Eyidi, University of Poitiers, Chasseneuil Futuroscope (France); C. Schmaranzer, E. Arenholz, voestalpine Stahl GmbH, Linz (Austria); N. Jank, Technical University Vienna (Austria); J. Bruckner, Fronius International, Wels (Austria); A.R. Pyzalla, Max-Planck-Institute for Iron Research GmbH, Duesseldorf (Germany)
- B 25/ 7 **Fabrication of Ultra-hard AlMgB₁₄ by an Easily Scaled-up Processing Route**
V. Kevorkijan (Sp), Independent Research Ltd., Maribor (Slovenia); M. Jelen, Impol.d.d., Slovenska Bistrica (Slovenia); S.D. Skapin, K. Krnel, Jozef Stefan Institute, Ljubljana (Slovenia)
- B 27/ 140 **A new Approach to Pulse Anodising - Decreasing Energy Consumption - Increasing Productivity**
A. Deacon Juhl (Sp), AluConsult, Kopenhagen (Denmark); K. Burfelt, SAPA Profiles DK, Kopenhagen (Denmark); P. Weldingh, Lokalenergi, Kopenhagen (Denmark)
- B 28/ 142 **Innovatives Fügeverfahren zum Schweißen von Leichtmetallen**
S. Sheikhi (Sp), J.F. dos Santos, GKSS-Forschungszentrum Geesthacht GmbH (Germany)

Thursday, 21 September 2006

Topic B - Processing

Panorama Hall

Posters

B / 105 **Verfahren zur 3-D-Messung von Gussstressen in Al-Gussteilen mit stark inhomogenen Eigenspannungszuständen**

H. Stroppe, V. Vovk, V. Taran (Sp), A. Vovk, Otto-von-Guericke-Universität Magdeburg (Germany)

B / 136 **Porous Structure and Mechanical Properties of the Cellular Metallic Material fabricated by Sintering Aluminum Powder Coated with Tin**

T. Sonoda (Sp), K. Katou, I. Jeon, T. Asahina, National Institute of Advanced Industrial Science and Technology, Nagoya (Japan)

All presentations (Short Lectures and Posters) will be discussed in front of the poster panels.

Thursday Afternoon

Europa Saal and Foyer

18:00 - **TRIMET-DGM Get Together Party**
open end

Friday, 22 September 2006
Topic C - Automotive

	Lecture Hall Berlin: 9:00 - 11:40
	Chair: K.H. von Zengen, European Aluminium Association, Brussels (Belgium)
	Keynote Lecture
9:00	Lightweight Design in Audi Cars - Challenges and Opportunities F. Venier, Audi AG, Neckarsulm (Germany)
	Highlight Lectures
9:30	Producing High Pressure Diecasting Parts for Crashrelevant Application H. Koch (Sp), G. Orthen, TRIMET ALUMINIUM AG, Essen (Germany)
9:50	The Weight Saving Potential of Aluminium as a Material for Structural Parts by the Example of Two Concepts for an Aluminium Passenger Car Front Section S. Fassbender, RWTH Aachen (Germany)
10:10	Coffee Break
	Highlight Lectures
10:40	Advanced Aluminum Frames in Current Motorcycles H. Yamagata, Yamaha Motor Co., Ltd., Iwata (Japan)
11:00	Smart Materials by Integrating Piezoceramic Modules in Die Castings V. Bräutigam (Sp), C. Körner, R.F. Singer, Universität Erlangen-Nürnberg (Germany)
11:20	Recent Developments in Aluminium Automotive Body Sheets B. Schepers, Corus Aluminium NV / Aleris Europe, Duffel (Belgium)

Friday Morning

Friday, 22 September 2006
Topic C - Automotive

Lecture Hall Berlin: 11:40 - 12:20

Chair: J. Wesemann, Ford Forschungszentrum
Aachen GmbH (Germany)

Short Lectures

- C 1/ 18 **New Efficient Heat Treatment System for Aluminum Intensive Automobile Components**
T. Donofrio (Sp), Can-Eng. Furnaces Ltd., Niagara Falls (Canada); K. Kurita, Nippon Furnace Kogyo Kaisha, Ltd. (Japan)
- C 2/ 87 **Total Extrusion Automation Employing Mo MAS Ensures Iso-thermal Iso-speed Extrusion with Guaranteed Cooling Rate**
M. Pandit (Sp), T. Heger, Technische Universität Kaiserslautern (Germany)
- C 3/ 52 **Influence of Age-hardening Condition and Surface Treatment on Stress Corrosion Cracking and Corrosion Fatigue in High-strength Aluminum Alloys**
M. Mhaede (Sp), L. Wagner, TU Clausthal, Clausthal-Zellerfeld (Germany)
- C 4/ 39 **Superior Strengthening of Aluminium Alloys by Accumulative Roll-bonding (ARB)**
I. Topic (Sp), H.W. Höppel, M. Göken, Friedrich-Alexander-Universität Erlangen-Nürnberg (Germany)
- C 6/ 117 **Design of Bolted Joints for Wrought and Cast Aluminium Components**
H. Leitner (Sp), I. Godor, W. Eichlseder, University of Leoben (Austria)
- C 7/ 62 **Characterisation of Laser Beam Aluminium-Steel Mixed Material Joints**
H. Laukant (Sp), U. Glatzel, Universität Bayreuth (Germany)
- C 8/ 68 **Biaxial Deformation and Creep Behaviour of AlMg2.7Mn Alloy at Elevated Temperature**
E. El-Magd, RWTH Aachen (Germany); N. Serour (Sp), Fayoum University (Egypt)

Friday Morning

Friday, 22 September 2006
Topic C - Automotive

Lecture Hall Berlin: 11:40 - 12:20

Chair: J. Wesemann, Ford Forschungszentrum
Aachen GmbH (Germany)

Short Lectures

- C 9/ 69 **Modelling of Biaxial Cyclic Creep Behaviour of AlMg2.7Mn Alloy at Elevated Temperature**
E. El-Magd, RWTH Aachen (Germany); N. Serour (Sp),
Fayoum University (Egypt)
- C 10/ 78 **Annealing Behaviour of AA6111 with Different Initial
Precipitation States**
S.T.C. Chang (Sp), B.J. Duggan, The University of Hong
Kong (China)
- C 12/ 133 **Lost Foam - Ein Innovatives Giessverfahren zu
Standortsicherung**
R. Woltmann (Sp), Lost Foam Council e.V., Augsburg
(Germany); F.-J. Wöstmann, Fraunhofer Institut für
Angewandte Materialforschung, Bremen (Germany)
- C 12/ 145 **Cleaning, Activation and Bonding of Aluminium in
the Automotive Sector**
C. Buske, Plasmatrete GmbH, Steinhagen (Germany)
- C 13/ 26 **Mobile with Magnesium**
P. Juchmann, Salzgitter Magnesium-Technologie GmbH
(Germany)

Friday Morning

Friday, 22 September 2006
Topic C - Automotive

Panorama Hall

Posters

- C / 90 **Superplasticity of Bulk Microcrystalline Al-Si Piston Alloys**
V.Y. Belov (Sp), Russian Federal Nuclear Center, Sarov (Russian Federation); V.N. Chuvil'deev, M.Y. Gryaznov, A.N. Sysoev, State University, Nizhny Novgorod (Russian Federation); V.I. Kopylov, National Academy of Science of Belarus, Minsk (Belarus)
- C / 126 **A Study of Warm Roll Bonding of Dissimilar Materials**
C. Bichler (Sp), F. Riemelmoser, H. Kilian, ARC Leichtmetallkompetenzzentrum Ranshofen GmbH (Austria); M. Buchner, Montanuniversität Leoben (Austria)

All presentations (Short Lectures and Posters) will be discussed in front of the poster panels.

Lunch Break

Friday Morning

Friday, 22 September 2006

Topic D - Materials Technology

Lecture Hall Berlin: 13:30 - 15:20

Chair: H. Fiegenschuh, Wiesbaden (Germany)

Keynote Lecture

- 13:30 **Spray Formed Aluminum Alloys (not only) for Automotive Applications**
P. Krug (Sp), B. Commandeur, G. Sinha, T. Przeorski, PEAK Werkstoff GmbH, Velbert (Germany)

Highlight Lectures

- 14:00 **Non Destructive Measurement of Elastic Moduli of AG3 and 6061-T6 Alloys Versus Temperature and Anisotropy Detection for Security Assessment in Nuclear Plants**
F. Augereau (Sp), G. Despau, Universite Montpellier 2 (France)
- 14:20 **The Effect of Heat Treatment on Some Properties of 7075 Wrought Aluminum Alloy**
C.N. Panagopoulos (Sp), E.P. Georgiou, O. Cheri, National Technical University of Athens, Zografos (Greece)
- 14:40 **Analysis of Surface Features of Rolled and Extruded Aluminum Products - a New Tool for Surface Quality Control**
M.V. Glazoff, Alcoa Technical Center, Alcoa, PA (USA)
- 15:00 **Coffee Break**

Friday Afternoon

Friday, 22 September 2006

Topic D - Materials Technology

Lecture Hall Berlin: 15:20 - 16:20

Chair: H. Koch, TRIMET ALUMINIUM AG (Germany)

Short Lectures

- D 1/ 63 **Phase-field Simulations of Coarsening Kinetics of Gamma' Particles in Ternary Al-Sc-Zr Alloys**
N. Lecoq (Sp), H. Zapolsky, R. Patte, University of Rouen, Saint Etienne du Rouvray (France)
- D 2/ 85 **Theory of Non-equilibrium Grain Boundaries and Its Application for Nano- and Microcrystalline Materials**
V.N. Chuvil'deev, Nizhny Novgorod State University (Russian Federation)
- D 3/ 100 **X-ray-Diffraction Analysis of Rapidly Solidified Ribbons of Al-Cr-Zr and Al-Ni-Y-Cr-Zr Alloys**
O.E. Osintcev, MATI, Moscow (Russian Federation); V.Y. Konkevich, OAO „VILS“, Moscow (Russian Federation); M. Betsofen (Sp), Metallwerke Bender Rheinland GmbH, Krefeld (Germany)
- D 4/ 84 **Texture and Mechanical Properties Anisotropy of Al-Mg-Li-Sc Alloys**
O.E. Osintcev, Tsiolkovskii Russian State University of Technology, Moscow (Russian Federation); T.D. Rostova, V.V. Zaharov, OAO „VILS“, Moscow (Russian Federation); M. Betsofen (Sp), Metallwerke Bender Rheinland GmbH, Krefeld (Germany)
- D 5/ 91 **Microelectrochemical Investigation towards the Role of Intermetallics in the Corrosion Process of Al-Mg-Si Alloys**
F. Eckermann (Sp), Eidgenössische Materialprüfungs- und Forschungsanstalt Dübendorf (Switzerland); P.J. Uggowitzer, ETH Zürich (Switzerland); P. Schmutz, Eidgenössische Materialprüfungs- und Forschungsanstalt Dübendorf (Switzerland)
- D 6/ 82 **A Phase Field Model for the the Morphological Evolution of Intermetallic Phases in Al Cast Alloys**
H. Emmerich (Sp), J. Hubert, RWTH Aachen (Germany)

Friday Afternoon

Friday, 22 September 2006

Topic D - Materials Technology

Lecture Hall Berlin: 13:30 - 15:20

Chair: H. Koch, TRIMET ALUMINIUM AG (Germany)

Short Lectures

- D 7/ 46 **On the Effect of Fluid Flow on Intermetallic Phases in Cast Aluminium Alloys**
L. Ratke (Sp), N. Euskirchen, S. Steinbach, Deutsches Zentrum für Luft- und Raumfahrt e.V., Köln (Germany)
- D 8/ 45 **Si Precipitation Kinetics in AlSi(Mg) Alloys**
F. Lasagni (Sp), H.R. Mohammadian Semnani, A. Falahati, H.P. Degischer, Technische Universität Wien (Austria); P. Schulz, ARC Leichtkompetenzzentrum Ranshofen GmbH (Austria)
- D 9/ 115 **Ductile Aluminum Die Castings - Development Status 2006**
S. Wiesner (Sp), Bühler Druckguss AG, Uzwil (Switzerland); R. Klos, Aluminium Rheinfelden (Germany)
- D 10/ 123 **Recent Research and Development Activities in Twin Roll Casting Technology**
M. Dundar, Assan Aluminum, Istanbul (Turkey)
- D 12/ 43 **Microstructure and Strain Distribution Influence on Failure Properties in Eutectic AlNi ,AlFe Alloys**
P.C. Olaru (Sp), IMA-METAV, Bucharest (Romania); G. Gottstein, RWTH Aachen (Germany); A. Pineau, ENSM Paris (France)
- D 13/ 99 **Ultra-hard Nanostructured Al-Mo Thin Films for NEMS Application**
V. Radmilovic (Sp), Z. Lee, University of California, Berkeley (USA); C. Ophus, L.M. Fischer, N. Nelson-Fitzpatrick, K.L. Westra, S. Evoy, University of Alberta (Canada); U. Dahmen, University of California, Berkeley (USA); D. Mitlin, University of Alberta (Canada)
- D 14/ 138 **HART-COAT®-AP: A New Alkali Resistant Coating for Aluminium Alloys**
H. Beuscher, AIMT Holding GmbH, Kerpen (Germany)

Friday Afternoon

Friday, 22 September 2006

Topic D - Materials Technology

Lecture Hall Berlin: 15:20 - 16:20

Chair: H. Koch, TRIMET ALUMINIUM AG (Germany)

Short Lectures

- D 15/ 71 **Global Introduction of the New Titan Thimble**
A. Sale (Sp), Pyrotek Corporate, Spokane, WA (USA);
J. Prebble, Pyrotek Engineering Materials Ltd, Milton
Keynes (UK)
- D 16/ 137 **An Innovative Refractory Solution for Aluminum
Melts**
D. Cölle (Sp), W. Clören, T. Heikaus, EKW GmbH,
Eisenberg / Pfalz (Germany)
- D 17 / 146 **Improvement of Aluminum Alloys by Nanostructured
Components**
V.D. Blank, E.K. Dyakov, R.H. Bagramov, V.M. Prohorov,
G.I. Pivovarov, I.A. Karetnikov, TISNCM, Podolsk (Russian
Federation); I. Savvatimova (Sp), FSUE SRI „LUCH“,
Podolsk (Russian Federation)

Panorama Hall

Posters

- D / 24 **Effect of Ca-addition on Formation of Fe-rich
Intermetallic Compounds in Al-12Si-1.2Fe Cast Alloy**
S.M. Miresmaeili, Rajaei University, Tehran (Iran)

All presentations (Short Lectures and Posters) will be
discussed in front of the poster panels.

Friday Afternoon

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