

Mg2018 Conference Programme

TUESDAY 24TH JULY			
07:30 - 09:15	Registration		
09:15 - 09:30	Welcome and Introduction - Prof Zhongyun Fan		
	Plenary Session I	Chairman: Prof Karl Kainer	
09:30 - 10:00	Challenges and Opportunities for Implementing Magnesium in Automotive Applications <u>J.T. Carter</u> (General Motors Company, USA)		
10:00 - 10:30	Next Generation Car's Requirements, Constraints and Potentials for Magnesium Lightweight Concepts with Integrated Functions <u>H. Friedrich</u> (German Aerospace Center (DLR), Germany)		
10:30 - 11:00	Break		
	ROOM A	ROOM B	ROOM C
	A1 - Solidification: Nucleation and grain refinement Chairman: Prof Mark Easton	B1 - Deformation: Fundamentals Chairman: Dr Dietmar Letzig	C1 – Deformation Processing: Extrusion Chairman: Dr Sangbong Yi
11:00 - 11:20	Invited Lecture: Thermodynamics of SiC Inoculation for Grain Refinement of Mg-Zn and Mg-Mn Alloys <u>R. Schmid-Fetzer</u> (Clausthal University of Technology, Germany)	Invited Lecture: Comparing the Microstructure and Texture Development of Rolled Sheets and Extruded Bands of Rare Earth or Calcium Containing Magnesium Alloys <u>J. Bohlen</u> (Helmholtz-Zentrum Geesthacht, Germany)	Invited Lecture: Magnesium Extrusion Challenges in an Industrial Setting <u>N. Abdulrahman</u> (Mag Specialties Inc, USA)
11:20 - 11:40	Invited Lecture: Grain Size and Secondary Dendrite Arm Spacing; An a Priori Discussion on the Difference Between FCC and HCP Materials <u>A. Jarfors</u> (Jönköping University, Sweden)	Investigation of Deformation Mechanisms of a Magnesium Tricrystal During Plane Strain Compression <u>M. Schreiber</u> (RWTH Aachen University, Germany)	Influence of Thermo-mechanical Treatment on Compressive Yield Strength of the Extruded Mg-Zn-Ca Alloy <u>P. Dobron</u> (Charles University, Czech Republic)
11:40 - 12:00	A Comparative Study of Prenucleation on Zr and MgO Substrates by ab initio MD Simulations <u>C. Fang</u> (BCAST, Brunel University London, UK)	Quantifying the deformation mechanisms during high temperature deformation in AZ31 magnesium alloy <u>T. Dessolier</u> (SIMaP Laboratory – Grenoble INP, France)	Initial Stage of Plasticity of Mg-Y-Zn Alloys Containing LPSO Phase <u>G. Garces</u> (CENIM-CSIC, Spain)
12:00 - 12:20	Nature of MgO Films/Particles in Pure Mg and Mg-9Al Alloy <u>S. Wang</u> (BCAST, Brunel University London, UK)	Role of Grain Boundary Structure and Twinning in Crack Propagation Behaviour in Magnesium Alloys <u>A. Singh</u> (National Institute for Materials Science, Japan)	Microstructure and Mechanical Behaviour of Directly-extruded Non-flammable AZXW9100 Alloy <u>J.S. Suh</u> (Korea Institute of Materials Science, South Korea)
12:20 - 12:40	A Numerical Model for the Predication of Grain Size <u>F. Gao</u> (BCAST, Brunel University London)	Ball Indentation Behaviour of Mg and Its Alloy Single Crystals <u>H. Kitahara</u> (Kumamoto University, Japan)	Magnesium Profiles with Tailored Properties <u>R. Nitschke</u> (Technische Universität Berlin, Germany)
12:40 - 13:00	Grain Refinement of Mg Alloys by Native Oxide Particles <u>Y. Wang</u> (BCAST, Brunel University London, UK)	Super-formable Magnesium at Room Temperature <u>Z. Zeng</u> (Monash University, Australia)	Visualization of Material Flow During Magnesium Extrusion <u>M. Jaehnke</u> (Technische Universität Berlin, Germany)
13:00 - 14:00	Lunch		

	ROOM A	ROOM B	ROOM C
	A2 - Solidification: Nucleation and Grain Refinement II Chairman: Prof Rainer Schmid-Fetzer	B2 - Deformation: Twinning I Chairman: Dr Nikki Stanford	C2 - Deformation processes Chairman: Prof Warren Poole
14:00 - 14:20	Invited Lecture: EBSD Studies of Intermetallic Growth in AZ91 Solidification <u>C. Gourlay</u> (Imperial College London, UK)	Invited Lecture: New Insights into Twinning Stresses in Mg Using Nano Indentation and Synchrotron Radiation <u>M. Barnett</u> (Deakin University, Australia)	Effects of Initial {10-12} Twins on Cyclic Deformation and Fatigue of Magnesium Alloy at Low Strain Amplitudes <u>F. Wang</u> (Shanghai Jiao Tong University, China)
14:20 - 14:40	Competitive Heterogeneous Nucleation between Zr and MgO Particles in Commercial Purity Magnesium <u>Y. Wang</u> (BCAST, Brunel University London, UK)	Invited Lecture: The Dislocation-twin Interaction and Evolution of Twin Boundary During Thermomechanical Processing of Mg Alloy <u>J. Zhang</u> (Chongqing University, China)	Effects of Rolling Temperature and Reduction Rate on the Edge Crack of AT11M, AT61M, AZ31 Magnesium Alloys Sheets Rolled by On-line Heating Rolling <u>J. Song</u> (Chongqing University, China)
14:40 - 15:00	Effect of O Atoms on Microstructure and Mechanical Properties of the Mg-O-9Al Alloy <u>D. Bae</u> (Yonsei University, South Korea)	Twinning and Detwinning Behaviour during Low Cycle Fatigue of Pure Magnesium Using Synchrotron Diffraction <u>A. Murphy</u> (University of Michigan, USA)	Influence of the Grain Size on the Deformation Behaviour of Friction Stir Processed Magnesium Alloy <u>R.S. Kottada</u> (IIT Madras, India)
15:00 - 15:20	The Formation of LPSO Structure in Mg-Gd-Zn Alloy <u>Y. Wu</u> (Shanghai Jiao Tong University, China)	Mobility of Pinned Twin-boundaries During Mechanical Loading <u>D. Drozdenko</u> (Charles University, Czech Republic)	Texture Evolution of AZ31 Alloy Produced by Solidification Controlled Twin Roll Casting (TRC) Process <u>X. Yang</u> (BCAST, Brunel University London, UK)
15:20 - 15:40	Numerical Modelling of Melt Conditioned Direct-chill (MC-DC) Casting of AZ31 Magnesium Alloy <u>B. Lebon</u> (BCAST, Brunel University London, UK)	Grain Growth Behaviour of Pure Mg and Mg-4Al <u>A. Murphy</u> (University of Michigan, USA)	High Speed Extrusion of Mg-Al-Ca-Mn Alloy with Age-Hardenability <u>T. Nakata</u> (Nagaoka University of Technology, Japan)
15:40 - 16:10	Break		
	ROOM A	ROOM B	ROOM C
	A3 - Solidification: Fundamentals Chairman: Dr Chris Gourlay	B3 - Deformation: Twinning II Chairman: Prof Matthew Barnett	C3 - Applications Chairman: Dr Jon Carter
16:10 - 16:30	Invited Lecture: Revealing Zn's Influence on the Solidification Morphology of Mg Alloys via 4D Synchrotron Tomography <u>P. Lee</u> (University College London, UK)	Invited Lecture: Quantification of Precipitate Hardening of Twin Growth in Mg-5Zn using Micro-pillar Compression <u>N. Stanford</u> (University of South Australia, Australia)	Invited Lecture: An Overview of Magnesium Alloys and their Applications in Canada <u>W. Poole</u> (The University of British Columbia, Canada)
16:30 - 16:50	Real-time Imaging of Intermetallic Formation in AZ91 Solidification by Synchrotron Radiography <u>G. Zeng</u> (Imperial College London, UK)	Statistical Analysis of Slip and Twinning Activities in Mg-Ca Alloy by in situ EBSD <u>L. Wang</u> (Shanghai Jiao Tong University, China)	Boosting Performance of Primary Mg Batteries <u>M. Zheludkevich</u> (Helmholtz-Zentrum Geesthacht, Germany)
16:50 - 17:10	Phase Equilibria and Microstructure Formation in Mg-In-Sn-Zn Alloys <u>H. Chen</u> (Thermo-Calc Software AB, Sweden)	Texture Formation in Precipitation Hardenable Magnesium Alloys Processed by ECAP <u>T. Vávra</u> (Charles University, Czech Republic)	Potentials and Challenges for Novel Magnesium Applications on Passenger Vehicles <u>E. Beeh</u> (DLR- Institute of Vehicle Concepts, Germany)
17:10 - 17:30	Investigation on the Quenching Sensitivity of Cast Mg-12Gd-0.8Zn-0.4Zr (wt.%) Alloy <u>D. Wang</u> (Shanghai Jiao Tong University, China)	Superplasticity of UFG Mg alloys assessed by continuous measurement of m-parameter <u>J. Stráský</u> (Charles University, Czech Republic)	Standardization Strategy for Instrumental Chemical Analysis of Magnesium and Magnesium Alloys <u>M. Uemoto</u> (Meisei University, Japan)
Inaugural Karl Kainer Lecture and Dinner			

WEDNESDAY 25TH JULY			
	Plenary Session II	Chairman: Prof Jian-Feng Nie	
08:30 - 09:00	Magnesium Material Supply Issues and Opportunities <u>Z. Zhen</u> (Magontec Xian Co. Ltd)		
09:00 - 09:30	Grain Refinement of Magnesium Alloys: What We Thought We Knew 25 Years Ago, What We Think We Know Now, and What We Need to Know <u>D. StJohn</u> (The University of Queensland, Australia)		
09:30 - 10:00	Heterogeneous Nucleation, Grain Initiation and Grain Refinement of Mg-Alloys <u>Z. Fan</u> (BCAST, Brunel University London, UK)		
10:00 - 10:30	Solidification and Precipitation Kinetics in Magnesium Alloys <u>A. Luo</u> (The Ohio State University, USA)		
10:30 - 11:00	Break		
	ROOM A	ROOM B	ROOM C
	A4 – Solidification Processing: Melt treatment Chairman: Dr Zisheng Zhen	B4 – Deformation: Dislocation-solute interaction Chairman: Dr Talal Al-Samman	C4 - Composites Chairman: Dr Hajo Dieringa
11:00 - 11:20	Invited Lecture: Cleanliness and Fire- & Creep-Resistance of Mg Alloys <u>S.K. Kim</u> (Korea Institute of Industrial Technology, South Korea)	Characterizing the Effects of Alloy Additions on Basal Slip using Instrumented Indentation Tests <u>W.J. Poole</u> (University of British Columbia, Canada)	Invited Lecture: Interfacial Structure in AZ91 Alloy Composites Reinforced by Graphene Nanosheets <u>Y. Liu</u> (Nanchang University, China)
11:20 - 11:40	Invited Lecture: Developments in Application of High Shear Melt Conditioning (HSMC) Technology to Mg Alloys <u>J. Patel</u> (BCAST, Brunel University London, UK)	Study of Deformation Mechanisms in Mg-Zn-Nd Alloys by Using in situ Synchrotron Diffraction Method <u>C. Ha</u> (Helmholtz Zentrum Geesthacht, Germany)	Recent Progress in Processing and Properties of Magnesium MMCs <u>H. Schmidt</u> (Neue Materialien Fürth GmbH, Germany)
11:40 - 12:00	Invited Lecture: Effect of Electromagnetic Field on Microstructure and Mechanical Properties of Rheo-squeeze Casting Mg-RE Alloys <u>W. Liu</u> (Shanghai Jiao Tong University, China)	Dislocation/Solute Binding and Ductility of Mg Alloys <u>B.J. Lee</u> (Pohang University of Science and Technology, South Korea)	Nanocarbon Reinforced Magnesium (Mg) Composites <u>Q. Li</u> (Imperial College London, UK)
12:00 - 12:20	The Semisolid Microstructure Evolution and Flow Characteristics of Mg Alloys in Different Fabrications <u>G. Quan</u> (Southwest Jiaotong University, China)	Effect of Alloying Element On Deformation Behaviour Of Binary Magnesium Alloys <u>J.H. Hwang</u> (Pohang University of Science and Technology, South Korea)	Microstructure and Mechanical Properties of Graphene Reinforced Magnesium Matrix Composites via Powder Metallurgy Method <u>Z. Wang</u> (Beijing University of Technology, China)
12:20 - 12:40	Crystallographic and Atomic Study on Grain Refinement Mechanism in Mg-Al-RE Alloy <u>X. Gu</u> (University of Science and Technology Beijing, China)	Effect of Nd and Gd Contents in Tension-Compression yield Asymmetry of binary Mg Alloys <u>Y. Xu</u> (Helmholtz-Zentrum Geesthacht, Germany)	MMC: Nano, Micro and Local Engineering of Microstructure <u>K. Kainer</u> (Helmholtz Zentrum Geesthacht, Germany)
12:40 - 14:00	Lunch		

	ROOM A	ROOM B	ROOM C
	A5 – Solidification Processing: Twin Roll casting Chairman: Dr Chamini Mendis	B5 - Deformation: Slip Chairman: Prof Kwang Seon Shin	C5 - Layered structures Chairman: Prof Long Liu
14:00 - 14:20	Mg- sheet Development by Twin Roll Casting <u>D. Letzig</u> (Magnesium Innovation Centre, Germany)	Invited Lecture: Ab initio Guided Design of Ductile Mg Alloys – Activation of Non-basal Slip in Solid Solution Mg Alloys <u>S. Sandlöbes</u> (RWTH Aachen University, Germany)	The Intermetallics Formed at the Interface and their Influence on Mechanical Properties of Ultrafine Grained Al/Mg Bi-layered Disks Processed by High Pressure Torsion <u>X. Qiao</u> (Harbin Institute of Technology, China)
14:20 - 14:40	Development of Melt-Conditioned Twin-Roll Casting (MC-TRC) Process for Thin Gauge Mg Alloy Strip Production <u>X. Yang</u> (BCAST, Brunel University London, UK)	On Non-Schmid Behaviour of Basal and Prismatic Slip Dislocations in Magnesium <u>A. Ostapovets</u> (Academy of Sciences of the Czech Republic, Czech Republic)	Fabrication, Microstructure and Properties of Long-period Stacking Ordered Structures Interface Reinforced Mg/Mg Bimetal Composites <u>K.N. Zhao</u> (University of Science and Technology Beijing, China)
14:40 - 15:00	Twin-roll Cast Bake-hardenable AXMZ1000 Sheet Alloy <u>M.Z. Bian</u> (National Institute for Materials Science, Japan)	Thermally Activated Nature of Slip in Mg-Mn-Ce alloy, ME10 <u>S. Agnew</u> (University of Virginia, USA)	Investigation of the Sheared Layer in Porthole Die Extrusion of Two Magnesium Alloys AZ31 and ME21 <u>F. Gensch</u> (Technische Universität Berlin, Germany)
15:00 - 15:20	Modelling of Microstructure Evolution during Twin Roll Casting <u>Y. Qiu</u> (BCAST, Brunel University London, UK)	Intergranular Twin-twin Interaction in a Deformed Magnesium Alloy After a Strain-path Change <u>Z.Z. Shi</u> (University of Science and Technology Beijing, China)	Microscopic Investigations of Kinks in Mg-Zn-Y Alloys with LPSO Phases <u>D. Egusa</u> (The University of Tokyo)
15:20 - 15:40	Twin Roll Casting of High Strength and Ductile Rare Earth Free Sheet Material <u>G. Kurz</u> (Magnesium Innovation Centre, Germany)	Dislocation-templated Gd Nano-fibre Patterns: A New Strategy of Tailoring Mechanical Properties in Mg Alloys <u>Y. Li</u> (Shanghai Jiao Tong University, China)	Understanding the High Strength and Good Ductility of LPSO-containing Mg Alloy using Synchrotron X-ray Diffraction <u>L. Wang</u> (Shanghai Jiao Tong University, China)
15:40 - 16:10	Break		
	Poster Session (Hampton Suite)		
	Farmers Market		

THURSDAY 26TH JULY

	Plenary Session III	Chairman: David StJohn	
08:30 - 09:00	Research and Development Status of Magnesium Alloys in Korea <u>K.S. Shin</u> (Seoul National University, Korea)		
09:00 - 09:30	Recent development of magnesium alloys and their processing technologies in China <u>F. Pan</u> (Chongqing University, China)		
09:30 - 10:00	From Age-hardenable Magnesium Alloys to Bake-hardenable Magnesium Alloys <u>K. Hono</u> (National Institute for Materials Science, Japan)		
10:00 - 10:30	Lattice Defects, Solute Segregation and Precipitation in Mg Alloys <u>J.F. Nie</u> (Monash University, Australia)		
10:30 - 11:00	Break		
	ROOM A	ROOM B	ROOM C
	A6 - Solidification Processing: Other casting processes Chairman: Prof Anders Jarfors	B6 - Deformation: Texture Chairman: Prof Sean Agnew	C6 - Corrosion I Chairman: Prof Mikhail Zheludkevich
11:00 - 11:20	Invited Lecture: Hot Tearing Susceptibility of Magnesium Alloys <u>N. Hort</u> (Helmholtz-Zentrum Geesthacht, Germany)	Invited Lecture: Understanding Reversed Yield Asymmetry in Mg Alloys <u>M. Perez-Prado</u> (IMDEA Materials Institute, Spain)	Invited Lecture: Improvement of Corrosion Resistance of Magnesium Alloys <u>B.S. You</u> (Korea Institute of Materials Science, South Korea)
11:20 - 11:40	Invited Lecture: Development of Mg Alloys for Medical Applications <u>R. Decker</u> (nanoMAG, USA)	Invited Lecture: The Prominent Role of Texture in the Plasticity and Microstructure Evolution of Magnesium <u>T. Al-Samman</u> (RWTH Aachen University, Germany)	Invited Lecture: Towards Fully Coupled Simulation of Mg - Corrosion and Related Mechanical Property Changes <u>D. Hôeche</u> (Helmholtz-Zentrum Geesthacht, Germany)
11:40 - 12:00	Melt Conditioned Direct-chill (MC-DC) Casting of Mg Alloys <u>H-T Li</u> (BCAST, Brunel University London, UK)	Invited Lecture: Texture and Microstructure Modification of Non-flammable Mg-Al-Zn-Y-Ca Alloy Sheet by Thermomechanical Processing <u>S. Yi</u> (Helmholtz-Zentrum Geesthacht, Germany)	Influence of Multimodal Microstructure Evolution on Corrosion Behaviour of Extruded Mg-Zn-Y Alloys with LPSO Phase <u>M. Yamasaki</u> (Kumamoto University, Japan)
12:00 - 12:20	Magnesium Alloy Die Casting Process Improvement using the Single Minute Exchange of Dies (SMED) Method and Other Techniques <u>A. Pendry</u> (Birmingham City University, UK)	Effects of Thickness Reduction on Microstructure and Hemming Properties of Mg Alloy Sheets <u>Y. Huang</u> (Monash University, Australia)	Nickel Enrichment in the Corrosion Products of Commercially Pure Magnesium <u>E.L. Trindade de Silva</u> (Helmholtz-Zentrum Geesthacht, Germany)
12:20 - 12:40	Variation Improvement of Properties of AZ91 Alloy Under Melt Conditioned High Pressure Die Casting <u>Y. Zhang</u> (BCAST, Brunel University London, UK)	Texture Evolution of Ca-containing Mg-Zn Alloys During Annealing <u>J.H. Kim</u> (Pohang University of Science and Technology, South Korea)	Effect of Minor Elements on Microstructure and Corrosion Behaviour of Mg-Al Based Alloys <u>B.S. You</u> (Korea Institute of Materials Science, South Korea)
12:40 - 13:00	Some Remarks on Aspects of Magnesium Casting <u>N. Hort</u> (Helmholtz-Zentrum Geesthacht, Germany)	Development of Mg-3Al-1Zn Alloy with Tilted Weak Basal Texture via Asymmetric Extrusion <u>J. Kim</u> (Chongqing University, China)	The Corrosion Performance of Magnesium Alloy Automobile Hub <u>J. Peng</u> (Chongqing university, China)
13:00 - 14:00	Lunch		

	ROOM A	ROOM B	ROOM C
	A7 - Alloy development: Cast alloys Chairman: Dr Norbert Hort	B7 – Deformation: Fatigue Chairman: Prof Liming Peng	C7 – Corrosion II Chairman: Dr Bongsun You
14:00 - 14:20	Invited Lecture: Enhancing the Mechanical Properties of Die-cast Mg-Al-RE Alloys Through a Combination of Minor Mn Addition and Heat Treatment <u>M. Easton</u> (RMIT University, Australia)	Invited Lecture: Fatigue Fracture Behaviour of Magnesium Single Crystals in Plane Bending Method <u>S. Ando</u> (Kumamoto University, Japan)	Invited Lecture: Controlling Dissolution of Mg: Inhibitors and Promoters <u>S. Lamaka</u> (Helmholtz-Zentrum Geesthacht, Germany)
14:20 - 14:40	Invited Lecture: Development of High Strength Magnesium Alloys with Nano-phase Precipitation <u>Y.S. Yang</u> (Chinese Academy of Sciences, China)	Structural Application of Magnesium Alloys in Vehicle Suspension Components: Effect of Forging on Fatigue Response <u>H. Jahed</u> (University of Waterloo, Canada)	Invited Lecture: The Corrosive and Inhibitive Factors for Mg in Haze-polluted Marine Environments <u>G.L. Song</u> (Xiamen University, China)
14:40 - 15:00	High Strength Mg Alloy Development Through Microstructure Control for MC-TRC <u>C. Mendis</u> (BCAST, Brunel University London, UK)	Microstructure Control of Mg-Gd-Zn-Zr alloy by Friction Stir Processing <u>J. Chen</u> (Shanghai Jiao Tong University, China)	Corrosion Behaviour of Homogenized and Extruded Mg-Al-Zn-Ca Alloys <u>I. Nakatsugawa</u> (National Institute of Advanced Industrial Science and Technology, Japan)
15:00 - 15:20	Modelling of Microstructure Evolution and Mechanical Properties in Magnesium Castings <u>Z. Guo</u> (Surrey Technology Centre, UK)	Localized Fatigue Description Method for Strongly Inhomogeneous Strain Distributions in Wrought Magnesium Alloys <u>J. Denk</u> (University of Applied Sciences Landshut, Germany)	Local pH and its Evolution near Mg Alloy Surfaces Exposed to Simulated Body Fluids <u>S. Lamaka</u> (Helmholtz-Zentrum Geesthacht, Germany)
15:20 - 15:40	Thixomolding - Evolution and Prospects <u>R. Decker</u> (NanoMAG, USA)	Evaluation of Microscopic Factors on Grain Refining Effect in Compression and Fatigue Properties of Wrought MgAlZn Alloys <u>N. Ono</u> (Sojo University, Japan)	Formation and Corrosion Mechanisms of Self-sealing Pore Micro Arc Oxidation (MAO) film on Mg Alloys <u>Y. Song</u> (Chinese Academy of Sciences, China)
15:40 – 16:10	Break		
	ROOM A	ROOM B	ROOM C
	A8 – Alloy development: Creep alloys Chairman: Prof Alan Luo	B8 - Deformation: High Strain Rate Chairman: Dr Krisztián Máthís	C8 - Corrosion protection Chairman: Dr Sviatlana Lamaka
16:10 – 16:30	Invited Lecture: Some Characteristics in Microstructure and Mechanical Properties of Mg-Gd-Y Alloys <u>R. Chen</u> (Chinese Academy of Sciences, China)	Invited Lecture: Effect of Calcium and Zinc on Deformation Behaviour of Magnesium Under Dynamic Loading <u>T. Mukai</u> (Kobe University, Japan)	Corrosion Sensing for Mg Alloys by Nanocontainer Including Coatings <u>N. Scharnagl</u> (Helmholtz-Zentrum Geesthacht, Germany)
16:30 – 16:50	Comparison of the Microstructure and Properties of AlN-Reinforced Nanocomposites Based on Elektron21 and AM60 <u>H. Dieringa</u> (Helmholtz-Zentrum Geesthacht, Germany)	Invited Lecture: Effect of Temper on High Strain Rate Properties of WE43 <u>J. Robson</u> (The University of Manchester, UK)	Fabrication of a Superhydrophobic and Corrosion Resistant Coating on Magnesium Alloy via a One-step Electrodeposition Method <u>Y. Hu</u> (Chongqing University, China)
16:50 – 17:10	On the Role of Secondary Phase on Creep Resistance of Mg-Ca Base Alloys <u>R.S. Kottada</u> (IIT Madras, India)	Anelastic Deformation During Cyclic Loading-unloading of Die-cast Magnesium Alloys <u>H.Q. Ang</u> (RMIT University, Australia)	PEO Processing of Mg - Fundamentals and Problems <u>C. Blawert</u> (Helmholtz-Zentrum Geesthacht, Germany)
17:10 – 17:30	Development of Mg-Mn Based Alloys for Automotive Powertrain Applications <u>M. Celikin</u> (University College Dublin, Ireland)	Solid Solution Treatment on Strength and Corrosion of Biodegradable Mg6Ag Wires <u>P. Maier</u> (University of Applied Science Stralsund, Germany)	PEO Processing of Mg - How to Improve Corrosion and Wear Resistance <u>C. Blawert</u> (Helmholtz-Zentrum Geesthacht, Germany)
	Conference Gala Dinner		

FRIDAY 27TH JULY			
	Plenary Session IV	Chairman: Prof Fusheng Pan	
09:00 - 09:30	New Magnesium Alloys for Automotive Applications <u>D. Klaumunzer</u> (Volkswagen AG, Germany)		
09:30 - 10:00	Novel Approaches for Active Corrosion Protection of Mg Alloys <u>M. Zheludkevich</u> (Helmholtz-Zentrum Geesthacht, Germany)		
10:00 - 10:30	Fatigue Behaviour and Additive Manufacturing of Mg Rare-earth Alloys <u>L. Peng</u> (Shanghai Jiao Tong University, China)		
10:30 - 11:00	Break		
	ROOM A	ROOM B	ROOM C
	A9 - Alloy development: Wrought alloys I Chairman: Prof Kazuhiro Hono	B9 - Precipitation Chairman: Prof Mark Easton	C9 - Biomaterials I Chairman: Prof Minfang Chen
11:00 - 11:20	Strengthening and Plasticizing Mechanism of Newly Developed Mg-Al-Ce/Sr Wrought Alloy. <u>Q. Huang</u> (Chinese Academy of Science, China)	Invited Lecture: First-ever Assessment of GP Zone Strength Parallel and Perpendicular to the Zone <u>S. Agnew</u> (University of Virginia, USA)	Invited Lecture: What Do We Know About the Interface Between Biodegradable Mg Alloys and Cells or Tissue? <u>R. Willumeit-Roemer</u> (Helmholtz-Zentrum Geesthacht, Germany)
11:20 - 11:40	Development of Mg alloys with High Strength and High Thermal Conductivity <u>X. Qiao</u> (Harbin Institute of Technology, China)	Invited Lecture: Facets of Precipitates in Mg alloys <u>W. Zhang</u> (Tsinghua University, China)	Controlling the Degradation Rate of Biodegradable ZX11 through Process and Coating Technology <u>D. Zander</u> (RWTH Aachen University, Germany)
11:40 - 12:00	Development of Heat-treatable Mg-Zn-Ca Sheet Alloy with High Strength and Excellent Room Temperature Formability <u>T. Sasaki</u> (National Institute for Materials Science, Japan)	Study of Age Hardening in a Mg-2.2wt%Nd Alloy by in situ Synchrotron X-ray Diffraction and Mechanical Tests <u>L. Wang</u> (Shanghai Jiao Tong University, China)	Microstructure and Degradation Properties of Mg-Gd-Ag-Ca Alloys as Biodegradable Implant Materials <u>N. Hort</u> (Helmholtz-Zentrum Geesthacht, Germany)
12:00 - 12:20	Microstructural Evolution and Mechanical Properties of Mg-Gd-Er-Zr Alloy <u>W. Du</u> (Beijing University of Technology, China)	Microstructural Changes of an Extruded WE33 Alloy during Precipitation Hardening <u>P. Maier</u> (University of Applied Science Stralsund, Germany)	Effect of Zinc Solute on Fatigue Properties of Magnesium in Vitro <u>N. Ikey</u> (Kobe University, Japan)
12:20 - 12:40	Exploring the Mechanism of "Rare Earth" Texture Evolution in Two Mg-Zn-Ca Alloys <u>D. Guan</u> (University of Sheffield, UK)	Characterization of Microstructures of Mg-Zn-Al Casting Alloys using Aberration-corrected Scanning Transmission Electron Microscopy <u>Y. Zheng</u> (Monash University, Australia)	From Simple to Very Complex Mg Implants: Different Processing Routes for Ca Containing Mg-alloys <u>R. Willumeit-Roemer</u> (Helmholtz-Zentrum Geesthacht, Germany)
12:40 - 13:00	Texture Evolution and Formability Improvement in AZ31 Magnesium Alloy Sheets by Ca Micro Alloying <u>G. Huang</u> (Chongqing University, China)	Investigation of Dissolution and Precipitation Behaviour of Mg-Y-RE Alloy with in-situ DSC <u>L. Burgschat</u> (University of Rostock, Germany)	
13:00 - 14:00	Lunch		

	ROOM A	ROOM B	ROOM C
	A10 - Alloy Development: Wrought alloys II Chairman: Prof Rongshi Chen	B10 - Recrystallisation Chairman: Mr Eric Nyberg	C10 - Biomaterials II Chairman: Prof Regine Willumeit-Römer
14:00 – 14:20	Development of a Low Cost, High Strength and Good Ductility Wrought Magnesium Alloy <u>S Kumar</u> (Indian Institute of Science, India)	Invited Lecture: Comprehensive Study of the Dislocation Structure in a Mg-Zn-Y Alloy using X-ray Diffraction and Transmission Electron Microscopy <u>K. Mathis</u> (Charles University, Czech Republic)	Invited Lecture: Entrepreneurship and the Path to a Magnesium Implant from an Idea to a Product <u>A. Eliezer</u> (Sami Shamoon College of Engineering, Israel)
14:40 - 14:40	Wrought Magnesium Alloys Design Strategy – Base on Corrosion Studies <u>G. Ben-Hamu</u> (Sami Shamoon College of Engineering, Israel)	Exploring the Basal Texture Formation Mechanisms Based on Twinning and Dynamic Recrystallization in AZ31 Magnesium Alloy During Extrusion <u>H. Yan</u> (Chinese Academy of Sciences, China)	Invited Lecture: Effect of the Nanoparticles MgO Content on the Microstructure and Properties of the Biodegradable Mg-Zn-Ca/MgO Composites for Biomedical Applications <u>M. Chen</u> (Tianjin University of Technology, China)
14:40 – 15:00	Effect of Ca Addition on the Microstructure, Texture and Mechanical Properties of AZ31B Alloy <u>R. Pei</u> (RWTH Aachen University, Germany)	Dynamic precipitation in a Mg-9wt.%Al alloy during low-temperature Equal Channel Angular Extrusion (ECAE) <u>S. Eswarappa Prameela</u> (Johns Hopkins University, USA)	Magnesium as Application in Biomaterials: A Market Research About the Expectations and Needs of the Bio, Medical, and Material Science as Driver for Innovation <u>S. Siefen</u> (TU Bergakademie Freiberg, Germany)
15:00 – 15:20	Improvement of Mechanical Properties by Rare Elements for Mg–Li Alloy with Duplex Structure <u>W. Liu</u> (Shanghai Jiao Tong University, China)	Study of Precipitation Hardening in AZ91 Alloy Using Micropillar Compression <u>S. Si</u> (University of Birmingham, UK)	Improvement of the Mechanical Properties and Biocompatibility of Biodegradable β -Ca ₃ (PO ₄) ₂ /Mg-Zn Composites Prepared by Powder Metallurgy <u>K. Yu</u> (Central South University, China)
	Conference End		

Poster Presentations

	Poster Presentations
P1	Grain Refinement of Al-containing Mg Alloys by Superheating <u>S.S. Jung</u> (Korea Institute of Industrial Technology, Korea)
P2	Effect of Substrate Chemistry on Prenucleation of Liquid Light Metals <u>C. Fang</u> (BCAST, Brunel University London, UK)
P3	Enhanced Potency of MgO for Heterogeneous Nucleation by Adsorption of Ca <u>S. Wang</u> (BCAST, Brunel University London, UK)
P4	Effect of Y on Reducing Flammability of Molten Mg-Zn-Y Alloy <u>S.I. Inoue</u> (Kumamoto University, Japan)
P5	Effect of Compound Physical Field on Microstructures of Semi-Continuous Cast AZ61 Magnesium Alloy Billets <u>W. Liu</u> (Northeastern University, China)
P6	HSMC-Technology <u>J. Patel</u> (BCAST, Brunel University London, UK)
P7	MC-DC Modelling <u>B. Lebon</u> (BCAST, Brunel University London, UK)
P8	Multiscale Modelling of Twin-Roll Casting <u>Y. Qiu</u> (BCAST, Brunel University London, UK)
P9	Melt Conditioned Twin-Roll Casting (MC-TRC) process for Mg thin strip <u>X. Yang</u> (BCAST, Brunel University London, UK)
P10	An Investigation of the Cold Rolled AZ31 Alloy Strip Produced by MC-TRC Process <u>A. Nag</u> (National Institute of Technology, India)
P11	Development of novel Mg alloys for MC-TRC process <u>U. Amin</u> (BCAST, Brunel University London, UK)
P12	Reactions Between Liquid AZ91 and Mild Steel Crucibles <u>L. Peng</u> (Imperial College London, UK)
P13	Nucleation and Growth Crystallography of Al ₈ Mn ₅ on B ₂ -Al(Mn,Fe) in AZ91 Magnesium Alloys <u>G. Zeng</u> (Imperial College London, UK)
P14	The Morphology and Distribution of Al ₈ Mn ₅ in High Pressure Die Cast AZ91 <u>G. Zeng</u> (Imperial College London, UK)
P15	Dissimilar Friction Stir Welded Mg alloys: Microstructure Evolution and Improved Corrosion Resistance <u>G. Ben-Hamu</u> (Sami Shamoon College of Engineering, Israel)

P16	Joining AM60 Magnesium Alloy to 304 Stainless steel by Transient Liquid Phase Bonding using Zinc Interlayer <u>A. Sadeghi</u> (University of Tehran, Iran)
P17	Microstructure, Mechanical and Creep Properties of Elektron21 Reinforced with AlN Nanoparticles by Intensive Melt Shearing <u>H. Yang</u> (Helmholtz-Zentrum Geesthacht, Germany)
P18	Microstructure and Comprehensive Mechanical Properties of Mg-14Li-3Al-2Gd Alloy Processed by Multi-layer Accumulative Roll Bonding <u>H. Zheng</u> (Harbin Engineering University, China)
P19	Grain Growth Behaviour of Pure Mg and Mg-4Al <u>A. Murphy</u> (University of Michigan, USA)
P20	Atomic Scale Study of {10-12} Twinning and Associated Deformation Modes in Mg Alloys <u>S. Hirata</u> (The university of Tokyo, Japan)
P21	Hot Deformation of Mg-Y-Zn Alloys with LPSO Phase <u>K. Horváth</u> (Charles University, Czech Republic)
P22	Microstructure and Mechanical Properties of Mg-Li /Al Sheet Processed by Accumulative Roll Bonding <u>J. Li</u> (Harbin Engineering University, China)
P23	Microstructure and Mechanical Properties of Extruded Mg-6Zn-3Sn-0.5Mn alloy <u>J. Zhou</u> (Shandong Academy of Sciences, China)
P24	Inelastic Unloading Behaviour of Dual Phase Mg-Zn-Y Alloys with LPSO Phase <u>K. Shiraishi</u> (Kumamoto University, Japan)
P25	Orientation Dependence on Bending Deformation in Rolled Magnesium Sheets <u>R. Fukumori</u> (Kumamoto University, Japan)
P26	Orientation and Temperature Dependence of Tensile Deformation Behaviour in Pure Magnesium Single Crystals below Room Temperature <u>G. Hayashida</u> (Kumamoto University, Japan)
P27	Dislocation Configuration of Low Angle Kink Boundaries Formed in a Mg ₈₅ Zn ₆ Y ₉ LPSO Single Crystal <u>T. Matsumoto</u> (Kumamoto University, Japan)
P28	In Situ Study of Strain Path Changes of Mg Alloys <u>J. Capek</u> (Charles university, Czech Republic)
P29	Influence of Severe Plastic Deformation on Microstructure and Mechanical Properties of Non-commercial Magnesium Alloys Containing Y and Nd <u>M. Zemková</u> (Charles University, Czech Republic)
P30	Characterization of Mg-Nd-Zn Alloy after Severe Plastic Deformation <u>J. Stráská</u> (Charles University, Czech Republic)
P31	Grain Boundary Segregation and Dislocation Behaviour of Mg-X-Zn (X=Al, Ca) alloys: An Atomistic Approach <u>H.-S. Jang</u> (Pohang University of Science and Technology, South Korea)

P32	Easy Deformation – Exploiting the Formability Potential of Magnesium Strip Produced by MCTRC <u>Y. Huang</u> (BCAST, Brunel university London, UK)
P33	Enhanced Strength and Corrosion Resistance of Ultrafine-grained Mg-Gd-Y-Zr Alloy <u>Y. Wan</u> (Central South University, China)
P34	Effect of Nd Content on Tension-Compression Yield Asymmetry of Mg-Nd Alloys <u>Y. Xu</u> (Helmholtz-Zentrum Geesthacht, Germany)
P35	Influence of Multiple RE Elements and Heat Treatment on the Mechanical Properties and Thermal Conductivity of Cast Mg Alloy <u>G. Li</u> (Harbin Engineering University, China)
P36	Increasing Mechanical Properties and Accelerating the Ageing Process of Mg-RE Alloy by Pre-cold Rolling <u>G. Li</u> (Harbin Engineering University, China)
P37	Influence of Individual Rare Earth Element on Thermal Stability of Al-RE Intermetallic Compound for Magnesium Alloy AE44 <u>Y. Feng</u> (Harbin Engineering University, China)
P38	Strengthening and Plasticizing Mechanism of Newly Developed Mg-Al-Ce Wrought Alloy with Bimodal Grain Structure <u>Q. Huang</u> (Chinese Academy of Science, China)
P39	Effect of Ca and Y on Corrosion Behaviour of Die Casting and Gravity Casting Magnesium Alloy <u>J. Kim</u> (Korea Institute of Materials Science, Korea)
P40	High Strength MgY2Zn1RE1 Alloys Fabricated by a Powder Metallurgy Route <u>G. Garces</u> (CENIM-CSIC, Spain)
P41	Effects of Minor Element on Microstructure and Formability of Mg-Zn-Ca Based Alloys <u>H. Lim</u> (Korea Institute of Industrial Technology, Korea)
P42	Effects of Al Contents on Cold Workability and Mechanical Properties of Ultralight Mg-15Li-1Ca Alloys <u>W. Yang</u> (Korea Institute of Industrial Technology, Korea)
P43	Microstructure and Mechanical Properties of Mg-Al-Zn Alloys Containing Si, Ca and Sr <u>E. Yaliniz</u> (Turkish Aerospace Industries Inc., Turkey)
P44	Correlation of Electrical Properties and Phase Transformations in Mg-RE Alloys <u>B. Smola</u> (Charles University, Czech Republic)
P45	Production and Applications of High Formable E-form Mg Alloy in POSCO <u>J. Park</u> (POSCO, Korea)
P46	Total Acidity/pH value: A New Concept for the Formulation Design of the Phosphate Conversion Coating of Magnesium Alloy <u>T. Zhang</u> (Northeastern University, China)
P47	Effect of Li, Zn and Al on Corrosion Characterization of Magnesium Alloys in NaCl Solution for Long Time <u>X. Ma</u> (Harbin Engineering University, China)

P48	Tailoring of Material Properties of Mg-Gd Alloys for Biomedical Applications <u>J. Harmuth</u> (Helmholtz-Centre Geesthacht, Germany)
P49	Characterization and Degradation Behaviour of Surface Modified Mg Alloys for Medical Implant Applications <u>Y. Lu</u> (University of Birmingham, UK)
P50	Magnetron Sputtered Biodegradable MgAg Thin Films <u>L. Jessen</u> (University of Kiel, Germany)
P51	Effect of Calcium Solute on Mechanical Properties and Bio-degradability of Magnesium <u>T. Hoshiba</u> (Kobe University, Japan)
P52	Mg/hydroxyapatite Nanocomposites Fabricated by High Shear Solidification <u>Y. Huang</u> (BCAST, Brunel University London, UK)
P53	Effect of Zinc Solute on Fatigue Properties of Magnesium in Vitro <u>N. Ikeo</u> (Kobe University, Japan)
P54	Microstructural Evolution of WZM211 Alloy During the Process Route of Biodegradable, Open-porous, Sintered Magnesium Short Fibers Scaffolds <u>G. Szakács</u> (Charité University Berlin, Germany)
P55	Effectiveness and Safety in the Milling of AZ91HP and AZ31 Magnesium Alloys <u>I. Zagórski</u> (Lublin University of Technology, Poland)
P56	Hydrogen Storage Properties of Filings of the Modified ZK60 Alloy with 2.5 wt% Mischmetal <u>E. Pereira da Silva</u> (Federal University of São Carlos, Brazil)
P57	Colour Contrast Etching Condition of AZ91 Alloys for Grain Size and Microstructure Analysis <u>G.J. Jang</u> (Korea Institute of Industrial Technology, Korea)
P58	Gasochromic Switchable Mirrors Based on Palladium/Magnesium-transition Metal Oxides Double-layered Thin Films <u>Y. Liu</u> (Shanghai Jiao Tong University, China)
P59	Effect of Magnetron Sputtering Parameters on Optical Properties of Magnesium Gadolinium Thin Films <u>N. Deng</u> (Shanghai Jiao Tong University, China)