LMT2023

10TH INTERNATIONAL LIGHT METALS TECHNOLOGY CONFERENCE

RMIT, MELBOURNE, AUSTRALIA | 10 - 12 JULY 2023

Materials Australia

CONFERENCE PROGRAM

Venue Map


RODDA LANE
LMT 2023
MELBOURNE AUSTRALIA
RMIT UNIVERSITY
BUILDING 8 | LEVEL 2
MAIN ENTRY
REGISTRATION
LECTURE THEATRE
EXHIBITORS
POSTER BOARDS
CATERING
SWANSTON STREET

LMT2023

10TH INTERNATIONAL LIGHT METALS TECHNOLOGY CONFERENCE

RMIT, MELBOURNE, AUSTRALIA | 10 - 12 JULY 2023

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Welcome

The 10th biennial Light Materials Technology (LMT) conference is a significant industry event that was created in order to provide an opportunity to industry professionals and researchers to come together, share knowledge and engage in networking that enables the industry to continue to flourish and innovate.

LMT2023 gives industry leaders to share presentations regarding challenges and issues that the light metals industry currently faces and the way these challenges can be navigated using innovative solutions.

The event is curated by the leading Australian materials technology body, Materials Australia. Drawing upon their influence and stature in the industry, they are able to help create a world-class event that is of integral importance for anyone in the light materials sector.

The conference focuses on recent developments in the sciences and technologies associated with the development and manufacture of aluminium, magnesium and titanium alloys, and their translation into commercial products.

LMT2023 will feature presentations by industry experts as well as workshops that aim to help attendees increase their understanding and sharpen their skills, enabling them to then pass on their gained skills and knowledge to their colleagues and other professionals in the industry. Additionally, the event is purposefully designed to provide attendees with ample networking time in order to allow important knowledge transfer and the creation of valuable partnerships which can ultimately enrich the entire industry.

The LMT series is made possible by the organisational efforts of the members of the Global Light Metals Alliance, which includes eleven centres that specialise in light metals research. Previous conferences have been held in Australia (2003), Austria (2005), Canada (2007), Australia (2009), Germany (2011), UK (2013), South Africa (2015), USA (2017), and China (2019).

Scope of the Conference

The themes of LMT2023 are Net Shape Manufacturing, Solid State Transformations and Mechanical Performance, and Translation to Applications. These broad themes encapsulate more focused areas of research, including:

- Alloy development
- Solidification, casting and forming innovations
- Mechanical behaviour of light metal alloys
- Corrosion and surface modification
- Advanced characterisation techniques
- Joining
- Applications in bio-medical, automotive, aerospace, and energy industries
- Simulation and modelling

Materials Australia

The Venue

VENUE - Building 8 (Kaleide Theatre)

The conference will be held in in the Kaleide Theatre, Building 8, 360 Swanston Street, Melbourne.

RMIT was established as the Working Men's College in 1887 with the aim of bringing educational opportunities to Melbourne's working class. The University has stayed true to its roots while working to create truly innovative teaching, learning and research programs that are continually updated to ensure students are receiving the type of knowledge they need to meet and solve modern challenges.

RMIT is a globally-focussed institution. It has teaching partnerships throughout Asia and Europe, and research and industry partnerships on every continent. RMIT continues to drive research and innovation through its work.

RMIT University City Campus - Features and Facilities

RMIT's Melbourne City campus thrives in the urban heart of the world's most liveable city; surrounded by rich treasures – from restaurants and cafés to parks, markets and the State Library of Victoria.

Unlike other university campuses, it isn't closed off, or surrounded by walls - City campus life is Melbourne city life.

The campus is accessible by public transport and provides key features such as libraries, study spaces, wi-fi, childcare and a bustling fitness centre.

RMIT's facilities and buildings are constantly evolving and expanding to meet the demands of contemporary university life. Across the campus you'll find new award-winning buildings like the Swanston Academic Building and the Design Hub, and outdoor recreational spaces including the Alumni Courtyard and the A'Beckett Urban Square.

There are plenty of cheap and healthy food and drink outlets offering breakfast, lunch, coffee, snacks and drinks. You'll also be in walking distance to hundreds of local restaurants and cafes, Melbourne Central and QV food courts and the famous Queen Victoria Market.

About Melbourne CBD

The venue is within walking distance of a number of Melbourne landmarks. Head down Swanston Street and onto St Kilda Road, and you'll come across the National Gallery of Victoria, home to one of the finest art collections in Australia. You can then amble down Southbank Promenande and try your luck at Crown Casino. Or if you head in the other direction, you can walk down the banks of the Yarra River and into the Botanical Gardens. Hop on a tram or train and in minutes you can arrive in the vibrant space that is Richmond, full of cafes, pubs, cutting edge dining experiences and the most famous Melbourne landmark, the MCG.

Chinatown (with it's delicious, yet inexpensive eats) is mere minutes away from RMIT, the bustling Queen Victoria Market is just a short walk down Latrobe Street, and the dining hotspot of Flinders Lane is also very close-by. You are literally surrounded by eating, drinking and cultural experiences. For a taste of what Melbourne has to offer, you couldn't ask for a better location.

Getting There

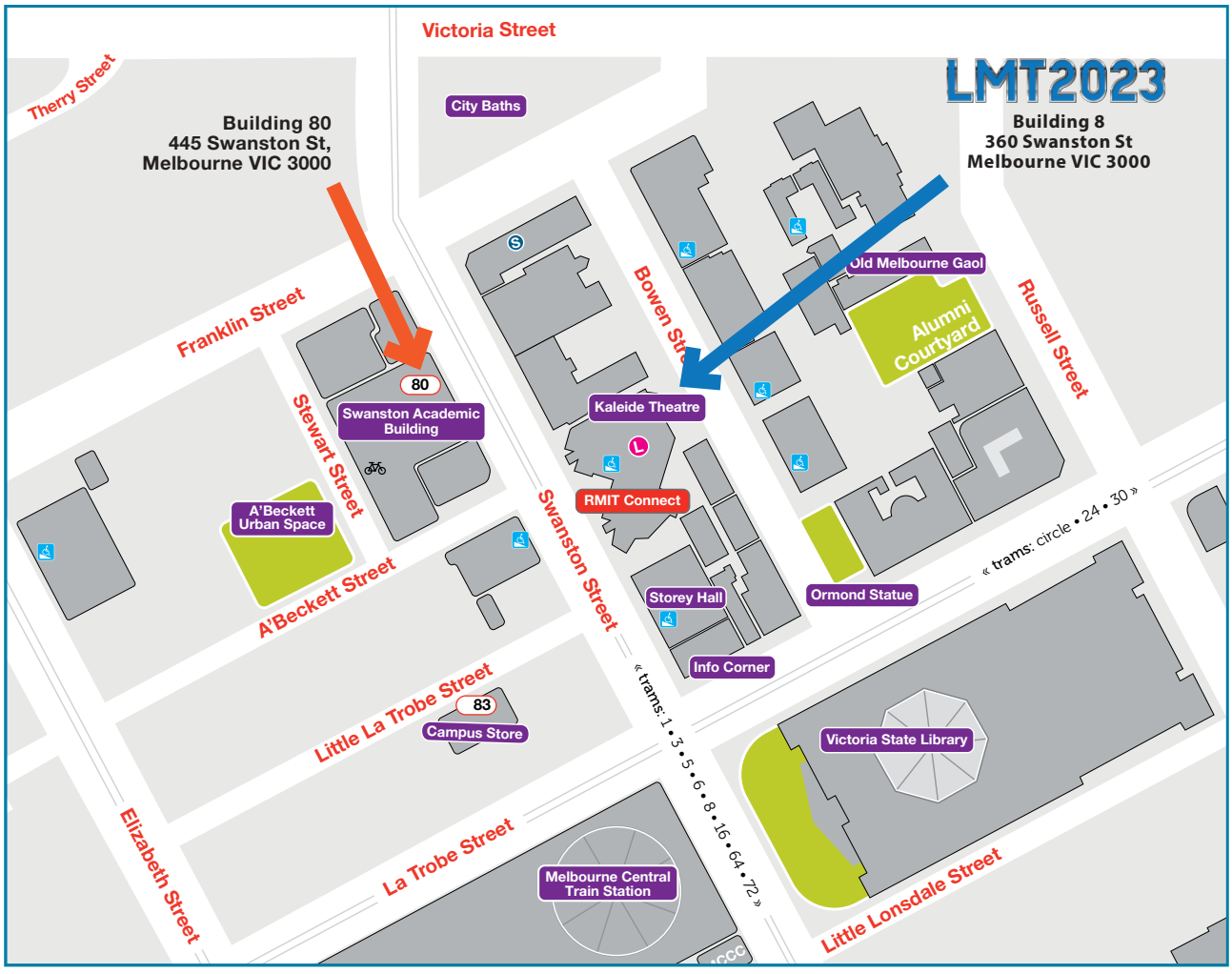
Getting To RMIT University

The University is located in the heart of the CBD, making it walking distance or a short tram or train ride from most of the CBD's landmarks and accommodation. Driving yourself to the venue isn't recommended as parking can be difficult to find and traffic is always a problem.

No matter where you are in Melbourne all you have to do is get on a City Loop train and get off at Melbourne Central station.

If you're coming by tram, most north-south Yarra Trams run along Swanston Street (routes 1, 3, 5, 6, 8, 16, 64, 67 and 72). For Elizabeth Street services (routes 19, 57, 59), get off at Melbourne Central and walk one block to Swanston Street.

If you're travelling east-west along Flinders Street (routes 48, 70 and 75), Collins Street (routes 109 and 12) or Bourke Street (routes 86 and 96), just jump off at Swanston Street for connecting trams.



Conference Chairs

Professor Mark Easton - RMIT University

Professor Mark Easton is the current Associate Dean (Manufacturing, Materials and Mechatronics) at RMIT University, where he has been since 2014. Additionally, Professor Easton's has previously worked at Monash University, working primarily with the CAST Co-Operative Research Centre and was its final CEO.

Professor Easton received his PhD from the University of Queensland in 1999. His extensive experience includes stints at Comalco (now Rio Tinto Aluminum) Research Centre and at the Leichtmetallkompetenz Zentrum, Rashofen (LKR) in Austria.

Over the years, Professor Easton has been the recipient of a number of awards, including the Henry Marion Howe Awards and the GKSS Magnesium Award. During his time at CAST CRC, he received five commercialisation awards for his role in the commercialisation of technologies.

Currently, Professor Easton's research partners include Magnotec, Ford, Cook Medical, and Weir Minerals.

Professor Easton has more than 20 years of experience in solidification processing of light alloys, initially focusing on casting. More recently, however, he has shifted his focus to additive manufacturing.

Professor David St John - The University of Queensland

Emeritus Professor David St John's main areas of research are in the solidification and microstructure-property relationships of aluminium, magnesium and titanium. Over the years, he has published more than 350 papers in journals and conference proceedings.

During his career, Professor St John has held appointments in Canada, at RMIT University in Melbourne, the CRA-Advanced Technical Development in Perth, and has a long association with the University of Queensland.

Professor St John has made a significant contribution to developing research-industry partnerships. This includes being CEO of the CAST Cooperative Research Centre from 2002 to 2008, leading a successful bid for the Defence Materials Technology Centre (DMTC) in 2008, and initiating the Centre for Advanced Materials Processing and Manufacturing (AMPAM) at the University of Queensland in 2009.

Professor St John has been the recipient of multiple Australian Research Council Discovery and Linkage grants and is a member of two ARC Research Hubs in Steel and Medical Devices.

Throughout his career, Professor St John has been the recipient of several awards, including the Bruce Chalmers Award at TMS in 2020, the John Campbell Medal in 2014, the Materials Australia Silver Medal in 2011, the Henry Marion Howe Award in 2006, the TMS Magnesium Technology Award in 2003, and was made Fellow of the DMTC in 2018.

Currently, Professor St John is Emeritus Professor at the University of Queensland.

Speakers

Prof. Dmitry Eskin - Brunel University, London

Abstract title: Recent developments in ultrasonic melt processing: from fundamentals to practice

Dmitry G. Eskin is a professor of Brunel University London/BCAST since 2011. Before joining BCAST, he worked as a senior scientist and associate professor in Delft University of Technology/Materials innovation institute (1999-2011). Prof. Eskin is an internationally recognised scientist in the fundamentals of solidification processes, casting defects and ultrasonic melt processing. He has over 330 papers (H-index 55, more than 11,000 citations) and 7 monographs to his name, including Multicomponent Phase Diagrams: Applications for Commercial Aluminum Alloys (2005), Physical Metallurgy of Direct-Chill Casting of Aluminum Alloys (2008), Ultrasonic Treatment of Light Alloy Melts (2015) and Solidification Processing of Metallic Alloys under External Fields (2018). Prof. Eskin is a member of editorial boards of Ultrasonic Sonochemistry, JOM, Metall. Mater. Trans. A and served as a chairman of TMS Aluminum Committee in 2022-2023. He has received TMS Warren Peterson Cast Shop for Aluminum Production Awards (2011, 2013), TMS Aluminum Technology Award (2013) and Mendeleev Medal from TSU (2018).

Prof. Hideyui Yasuda - Kyoto University, Japan

Abstract title: Observation of solidification in Al and Mg alloys by time resolved tomography

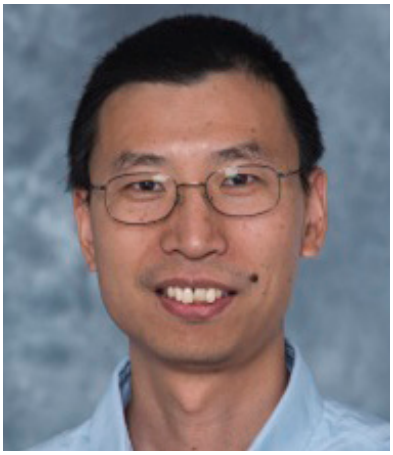
Prof. Hideyuki Yasuda received a Doctor of Engineering from Kyoto University in 1991. He had been an assistant professor, associate professor and professor in graduate school of engineering, Osaka University (1991-2013). He is a professor in department of materials science and engineering, Kyoto University since 2013. His research field is “Solidification and casting of metallic alloys and ceramics”. Recently, he has studied time evolution of solidification structure and casting defects by using 2D / 3D X-ray imaging techniques in SPring-8 (a synchrotron radiation facility in Japan). He has also developed modeling and simulation of solidification phenomena on the basis of in-situ observations.

Speakers

Dr. Paul Schaffer - Rio Tinto, Australia

Abstract title:

Dr. Paul Schaffer is a Principal Consultant for aluminium products at Rio Tinto. He has a Bachelor of Manufacturing and Materials Engineer and a PhD in Materials Engineering from The University of Queensland. After graduating he worked as a Research Fellow at the Norwegian University of Science and Technology (NTNU) using X-ray imaging techniques to study solidification of monotectic alloys. He then moved into alloy development and process improvement projects at Hydro Aluminium's R&D Centre in Norway. Currently, he works closely with Rio Tinto's slab, foundry, and high purity customers throughout the Asia-Pacific region providing technical support and collaborating on product development.



Dr. Lang Yuan - University of South Carolina, USA

Abstract title: Mitigation of Solidification Cracking and Porosity in AA 6061 alloy during the Laser Powder Bed Fusion Additive Manufacturing Process

Dr. Lang Yuan is an Associate Professor at the Department of Mechanical Engineering at the University of South Carolina (UofSC). He obtained his Bachelor's and Master's degrees in Materials Processing and Engineering from the Department of Mechanical Engineering at Tsinghua University, China, and his Ph.D. in Materials Science from the Department of Materials at Imperial College London, UK, in 2010. He worked at GE Global Research, NY as a lead research engineer before joining UofSC in 2018, driving and developing multiscale physics-based computational models in Additive Manufacturing (AM). Currently, he leads the Metal AM Laboratory at UofSC and focuses on developing innovative materials and processes for metal AM, numerically and experimentally controlling microstructures and defect formation during alloy solidification to achieve desired mechanical and functional properties. He authored more than 50 journal publications and filed 12 patents in the field of AM.

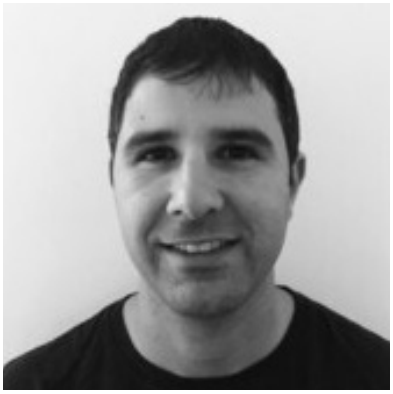
Speakers

Dr. John Grandfield - Grandfield Technology, Australia

Abstract title: Scandium and rare earth light metal alloys: new opportunities

John is director of Grandfield Technology Pty Ltd, (a consulting and technology firm) and Adjunct Professor at Swinburne University of Technology in the High Temperature Processing Group. He has a Bachelor of Applied Science in Metallurgy (RMIT), an MSc in Mathematical Modelling (Monash University) and a PhD in Materials Science (University of Queensland).

John has 30 years experience in light metals research and technology in government and industry laboratories. He has five patents, has published two book chapters, more than 50 conference and journal papers and has co-authored a book on DC casting of light metals. He was Chair of the TMS Aluminum committee and editor of Light Metals in 2014 and winner of the 2018 Brimacombe Prize. Scandium is his latest light metal interest.



Dr. Enzo Liotti - University of Oxford, UK

Abstract title:

Dr Enzo Liotti is a Lecturer at the Department of Materials, University of Oxford, United Kingdom. His research focus is on using and developing X-ray synchrotron techniques for the investigation of fundamental dynamic phenomena in metal processing and material science, with particular interest in solidification of metal alloys. He obtained his BSc and MSc in Materials Engineering from the Politecnico di Milano (Italy) and gained a PhD in Materials science in 2011 from the University of Loughborough (UK), with a project on the characterization of a nano-quasicrystalline containing Al alloy with high temperature mechanical properties. From 2011 to 2019 he was a PDRA at the department of Materials, University of Oxford, working on in-situ imaging of solidification within professor Patrick Grant's Processing of Advanced Materials Group.

Richard Taube - Ford Research and Advanced Engineering

Abstract title:

Richaurd Taube is a Mechanical Engineer and has worked in the Automotive industry in Australia since 1994. His Postgraduate Research was in the field of Sheetmetal Stampings Optimisation and he has been active in BIW structures design, development and testing of the Ford Territory, Falcon and T6 Ranger since 1999 including advanced BIW structures planning, development and cost optimisation in a technical capacity.

He is currently the Australia manager for university programs with oversight for collaborative university research projects with Ford Research & Advanced Engineering and has global responsibility for research based student projects and consortiums. He has an ongoing interest in applied research and collaboration between industry and research schools as well as tech transfer and commercialization of innovation.

Poster Session

CHAIR
Michael Bermingham
University of Queensland

Stephanie Kotiadis
University of Guelph
The Heat treatability, Conductivity, and Strength Properties of the Al-Fe-Ni-Mg-Si Alloying System

Wan Ye
Monash University
Solidification-microstructure relationship study of single tracked laser scanned Mg-La based alloys

Soya Nishimoto
Effect of multimodal microstructure on fracture toughness behavior of extruded Mg-Zn-Y alloys

Chee Ying Tan
RMIT University
Effect of LSM on the microstructure of WE43, ZX21, ZXM211 biodegradable magnesium alloys

Huizhi Peng
Monash University
Rapid hardening response of ultra-hard Ti-6Al-2Sn-4Zr-6Mo alloy produced by laser powder bed fusion

Hong Liu
Shanghai Jiao Tong University
Three-dimensional Shape and Stress Field of a Deformation Twin in Magnesium

Ian Amedeo
Deakin University
Core-shell Al3(Sc,Zr) precipitation monitoring in Al-Mg-Sc-Zr alloys

Lingxiao Zeng
Monash University
The Effects of Additive Manufactured TI-6AL-4V Surfaces on Biological Reactions of Fibroblast

Maria Popovski
RMIT University
The effect of heat treatment on the microstructure of additively manufactured Ti-Cu

Ninad Bhat
Australian National University
Enhancing Mechanical Property Predictions in Aluminium Alloys using Data-Driven Class-Based Regressors

Ryan Brooke
RMIT University
Novel Bainitic Ti Alloys Designed for Additive Manufacturing

Gui Wang
University of Queensland
Simulation of Stress Development and Hot Tearing Formation of Aluminium Alloys during Casting Process

Shikang Feng
University of Oxford
X-ray imaging of Al alloy solidification: intermetallic compounds and defects

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Ma Qian RMIT

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Roger Lumley AW Bell

Simon Barter RMIT

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Matthew Barnett
Deakin University

Michael Ferry
School of Materials Science & Engineering, The University of New South Wales

Mingxing Zhang
The University of Queensland

Peng Cao
University of Auckland

Roger Lumley
AW Bell Pty Ltd

Simon Barter
RMIT University

Tim Sercombe
University of Western Australia

Trevor Abbott
Magontec

Yvonne Durandet
Swinburne University

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The Lightweight Materials and Manufacturing Research Lab (LMMRL), The Ohio State University, USA.

Prof Anders E. W. Jarfors

Department of Materials and Manufacturing, School of Engineering, Jönköping University, Sweden

Prof Bong Sun You

Magnesium Department, Korea Institute of Materials Science, Korea

Prof Brajendra Mishra

Metal Processing Institute, Worcester Polytechnic Institute, USA

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Prof Matt Dargusch

UQ/RMIT, Australia

Dr. Hajo Dieringa
Prof. Norbert Hort

Helmholtz-Zentrum Hereon, Germany

Dr Sagren Govender
Sylvester Bolokang

Advanced Casting Technologies, Advanced Materials and Engineering, CSIR, South Africa

Prof Zhongyun Fan

BCAST, Brunel University, UK

Day One

MONDAY July 10 2023

METAL PRODUCTION, CASTING AND SOLDIFICATION

9:00	**WELCOME** **Mark Easton** **WELCOME TO COUNTRY** **Wurunderji Representative**	
	METAL PRODUCTION **Mark Easton** RMIT University	**CHAIR**
9:20	**Paul Schaffer** Rio Tinto Aluminium *Recent advances in the Al industry*	**KEYNOTE**
9:40	**Alan Luo** Ohio State University *Magnesium Research and Applications: Opportunities and Challenges*	**KEYNOTE**
10:00	**MORNING TEA**	
	CASTING AND SOLIDIFICATION TECHNOLOGY **David StJohn** University of Queensland	**CHAIR**
10:30	**Dmitry Eskin** Brunel University *Recent developments in ultrasonic melt processing: from fundamentals to practice*	**KEYNOTE**
10:50	**Anders Jarfors** Jonkoping University *On the generation of excess solid fraction in the Rheometal process*	**KEYNOTE**
11:10	**Gary Savage** RMIT University *Bifilms and my Churchill Fellowship*	**INVITED**
11:25	**Jayesh Patel** Brunel University *Developments in the multi-purpose high shear melt conditioning technology (HSMC) for processing Al and Mg alloys*	**INVITED**
11:40	**Kumar Sadayappan** McMaster University *Understanding the Effect of Process Parameters on Structural Castings of Nemalloy HE700*	**INVITED**
	NUCLEATION AND REFINEMENT **David StJohn** University of Queensland	**CHAIR**
11:55	**Zhongyun Fan** Brunel University *A Global Renaissance of Metallurgy: The Birth of Metallurgy 2.0*	**KEYNOTE**
12:!5	**Qiyang Tan** University of Queensland *Inoculation treatment of additively manufactured aluminum alloys*	**INVITED**
12:30	**Yun Wang** Brunel University *Grain Refinement Mechanism of Al Alloys Inoculated with TiB2*	**INVITED**
12:45	**Zhongping Que** Brunel University *Composition templating for heterogeneous nucleation of intermetallic compounds*	**INVITED**
13:00	**LUNCH AND POSTERS** **Michael Bermingham** University of Queensland	**CHAIR**

Day One

MONDAY July 10 2023

METAL PRODUCTION, CASTING AND SOLDIFICATION

	PERFORMANCE AND DEFECTS **Anders Jarfors** Jonkoping University	**CHAIR**
14:00	**Roger Lumley** AW Bell *Enhanced Thermal Conductivity and Mechanical Properties in a New Aluminium Casting Alloy for Aerospace Applications*	**KEYNOTE**
14:20	**Shouxun Ji** Brunel University *Development of die-cast Mg-Al-based alloys for high thermal conductivity.*	**INVITED**
14:35	**Vigneshwar Hari** University of Queensland *Fluidity and microstructure of hypoeutectic Al-Ni alloys with trace element additions*	**ORAL**
14:50	**Lang Yuan** University of South Carolina *Mitigation of Solidification Cracking and Porosity in AA 6061 alloy during the Laser Powder Bed Fusion Additive Manufacturing Process*	**INVITED**
15:05	**Michael Bermingham** University of Queensland *Eliminating defects, promoting equiaxed grains and improving the mechanical properties of additively manufactured titanium alloys with super-transus Hot Isostatic Pressing*	**INVITED**
15:20	**Patrick O'Toole** RMIT University *Microstructure and solidification cracking in WAMed aluminium alloys by integrated analytical and process modelling*	**INVITED**
15:35	**AFTERNOON TEA**	
	ADVANCED TECHNIQUES **Zhongyan Fan** Brunel University	**CHAIR**
16:00	**Hideyuki Yasuda** Kyoto University *3D observation of microstructure evolution and casting defect formation during solidification in Al and Mg alloys*	**KEYNOTE**
16:15	**Enzo Liotti** University of Oxford *Unravelling hot tear formation dynamics using real-time X-ray imaging*	**KEYNOTE**
16:30	**Yunhui Chen** RMIT University *Insights of Laser Additive Manufacturing Light Metals using in-situ Synchrotron X-ray Imaging*	**INVITED**
16:45	**Jiehua Li** University of Leoben *Atomic DFT simulation and experimental TEM APT observations on the distribution of modifying solutes within eutectic Si in Al-Si based alloys*	**INVITED**
17:00	**Lei Wang** Central Iron & Steel Research Institute *Determination of Trace Impurities in Beryllium by Inductively Coupled Plasma Mass Spectrometry*	**ORAL**
17.15	**Lixia Yang** China Iron & Steel Research Institute Group (CISRI) *Hydrogen diffusion behavior of titanium alloys during Thermohydrogen processing (THP) based on neutron imaging*	**ORAL**
18:00	**WELCOME EVENT: OXFORD SCHOLAR** **427 SWANSTON STREET (OPPOSITE CONFERENCE LOCATION)**	

Day Two

TUESDAY July 11 2023

ALLOYS: PRODUCTION ROUTES, DESIGN, THERMOMECHANICAL PROCESSING AND JOINING

	DESIGN OF ALLOYS **Alan Luo** Ohio State University	**CHAIR**
9:00	**Richard Taube** Ford *Light metals in the Automotive Industry*	**KEYNOTE**
9:20	**Leyun Wang** Shanghai Jiaotong University *Laser powder bed fusion of Ti alloys with various Al contents*	**KEYNOTE**
9:40	**Michael Ferry** UNSW *Is it possible to design a Magnesium Alloy that is stronger than Steel and Titanium?*	**KEYNOTE**
10:00	**Kenneth Tam** University of Melbourne *Integrated Computational Materials Engineering for Rapid Light Materials Design: Additive Manufacturing to Fatigue Performance*	**INVITED**
10:15	**Mingwei Hu** University of Queensland *Machine learning for high-performance Al alloys design assisted by failed experiments*	**ORAL**
10:30	**Thomas Klein** Austrian Institute of Technology *Tailoring titanium alloys toward processing by wire-arc directed energy deposition*	**INVITED**
10:45	**Qi Zhang** Chinalco Materials Application Research Institute *Development of high strength aluminum alloy for hot stamping*	**ORAL**
11:00	**MORNING TEA**	
	NOVEL APPROACHES TO ALLOYS **Peng Liming** Shanghai Jiaotong University	**CHAIR**
11:30	**John Grandfield** Grandfield Technology *Scandium and rare earth light metal alloys: new opportunities from cheaper master alloys*	**INVITED**
11:50	**Ahmad Rizky Rhamdani** Swinburne University of Technology *Rare earth light metal alloys: direct production route from rare earth oxide*	**ORAL**
12:05	**Kristen Xu** University of Auckland *In situ alloying of pure Ti with trace 316L stainless steel elements by selective laser melting*	**ORAL**
12:20	**Labani Mustafi** RMIT University *Development of a non-equiatomic Ti40Zr25Nb25Ta5Al5 medium entropy alloy (MEA) for biomedical applications*	**ORAL**
12:35	**Hao Wang** University of Sydney *An oxygen-stabilized face-centred cubic phase with superior mechanical properties in additively manufactured Ti-6Al-4V*	**ORAL**
12.50	**LUNCH AND POSTERS** **Michael Bermingham** University of Queensland	**CHAIR**

Day Two

TUESDAY July 11 2023

ALLOYS: PRODUCTION ROUTES, DESIGN, THERMOMECHANICAL PROCESSING AND JOINING		
	THERMOMECHANICAL PROCESSING STAMPING, MICROSTRUCTURE AND COLD SPRAY **Mishra Brajendra** Worcester Polytechnic Institute	**CHAIR**
14:00	**Michael Elford** Boeing *Thermomechanical processing of Al alloys*	**KEYNOTE**
14:20	**Thomas Klein** Austrian Institute of Technology *Secondary ageing, formability, and weldability of an Al-Cu-Mg alloy (2024) in various tempers*	**INVITED**
14:35	**Maria Mathabathe** Council for Scientific and Industrial Research (CSIR) *The effect of intermediate annealing on grain structure and texture evolution of thin 6016 aluminium alloy sheet*	**INVITED**
14:50	**Stephan Usnick** Austrian Institute of Technology *Microstructure evolution during thermo-mechanical WAM process simulation*	**INVITED**
15:05	**Mohammed Abdul Khalik** Swinburne University of Technology *In-situ Electro Plastic Treatment of Cold Sprayed Additive Structures: A New Solid-State Manufacturing Route for Rapid Reduction of Porosity and Brittleness in Cold Sprayed Grade 5 Titanium*	**ORAL**
15:20	**Felix Nugraha Lomo** RMIT University *Titanium metal matrix composite fabrication via cold spray additive manufacturing*	**ORAL**
15:35	**AFTERNOON TEA**	
	FORMING AND JOINING **Sagren Govender** CSIR	**CHAIR**
16:00	**Brajendra Mishra** Worcester Polytechnic Institute *Corrosion Behavior of Friction-Stir Welded Al-Mg alloys*	**KEYNOTE**
16:20	**Stephan Ucsnik** Austrian Institute of Technology *An overview of the Processing and Forming Behavior of Mg-Ca-Al Wrought Alloys*	**INVITED**
16:35	**Papangkorn Jessadatavornwong** RMIT University *The application of X-ray computed tomography in self-piercing rivet joints.*	**ORAL**
16:50	**Joung Sik Suh** Korea Institute of Materials Science *Processing and characteristics of Mg microtubes for bioresorbable stent applications*	**INVITED**
17:05	**Dheerendra Dwivedi** Indian Institute of Technology Roorkee *Friction Stir Spot Lap Welding in Aluminium/Acrylic Hybrid Joints*	**ORAL**
17:20	**Dheerendra Dwivedi** Indian Institute of Technology Roorkee *Weld Soundness Evaluation of Thin Sheet Friction Stir Weld Joints using Lamb wave*	**ORAL**
7.00	**CONFERENCE DINNER** Old Melbourne Gaol	

Day Three

WEDNESDAY July 12 2023

RECYCLING, CIRCULAR ECONOMY AND IMPROVED PROPERTIES

	RECYCLING, THE ENIVRONMENT AND CIRCULAR ECONOMY **Kumar Sadayappan** CanMet	**CHAIR**
9:00	**Don Larsen** International Titanium Association *Titanium and Its Role in Aerospace Environmental Challenges*	**KEYNOTE**
9:20	**Adam Powell** Worcester Polytechnic Institute *A Magnesium Clean Energy Ecosystem Vision*	**INVITED**
9:35	**Alan Luo** Ohio State University *Towards a Green Aluminum Paradigm - Processing Pathways for a Closed Loop Circular Economy Model*	**INVITED**
9:50	**M. Akbar Rhamdhani** Swinburne University of Technology *Aluminothermic Reduction for Recycling of Electronic Waste*	**INVITED**
10:05	**Brajendra Mishra** Worcester Polytechnic Institute *Removal of metallic impurities from molten aluminum*	**INVITED**
10:20	**MORNING TEA**	
	MATERIALS PROPERTIES **Jian-Feng Nie** Monash University	**CHAIR**
11:00	**Dipankar Banerjee** Indian Institue of Science *Transformations, Recrystallization, Microtexture and Plasticity in Titanium Alloys; An Emerging View*	**KEYNOTE**
11:20	**Matthew Barnett** Deakin University *Imaging real-time plasticity onset and single twinning events within a bulk polycrystalline magnesium alloy*	**KEYNOTE**
11:40	**Jun Wang** Deakin University *An extruded Mg-Zn alloy with abnormal dual textures and improved tension-compression yield asymmetry*	**ORAL**
11:55	**Nathan March** CSIRO *Efficient Computational Methods for the Prediction of Mechanical Behaviour of Additively Manufactured Parts*	**INVITED**
12:10	**Toni Bogdanoff** Jonkoping University *The impact of HIP process and heat treatment on the mechanical behavior of an Al-Si-Mg alloy component*	**INVITED**
12:55	**Indrajeet Katti** RMIT University *Comparing Microstructure and Mechanical Properties of AlSi10Mg Alloy Produced by Laser Powder Bed Fusion and High Pressure Die Casting Processes*	**ORAL**
12:40	**Enyo Guo** Dalian University of Technology *Fabrication and Mechanical Performance of B4C/Al Composites*	**ORAL**
12:55	**LUNCH**	

Day Three

WEDNESDAY July 12 2023

RECYCLING, CIRCULAR ECONOMY AND IMPROVED PROPERTIES

	STRENGTHENING AND CORROSION **Stephan Usnick** Austrian Institute of Technology	**CHAIR**
14:00	**Chamini Mendis** Brunel University *Developing precipitation hardening Mg alloys: limitations, successes and the future*	**KEYNOTE**
14:20	**Yan Huang** Brunel University *Reconstruction of dislocation core structures in FCC and HCP crystals*	**ORAL**
14:35	**Shenlan Yang** Monash University *Atomic structure and evolution of $\{111\}_\alpha$ precipitate plates in Al-Cu-Mg-Ag alloys*	**ORAL**
14:50	**Pfarelo Daswa** Council for Scientific and Industrial Research (CSIR) *Natural ageing mechanisms for pure and commercial Al-Si-Mg-(Xx) 6016 aluminium alloy sheet*	**ORAL**
15:10	**Michiaki Yamasaki** Kumamoto University *Acoustic emission study on corrosion behaviour of extruded Mg-Y-Zn alloys with multimodal microstructure*	**ORAL**
15:40	**AFTERNOON TEA**	
	STRENGTHENING AND CORROSION **Mark Easton** RMIT University	**CHAIR**
16:00	**Thomas Dorin** Deakin University *Precipitation Sequence in Al-Sc-Zr Alloys Revisited*	**INVITED**
16:15	**Lu Jiang** Deakin University *Effect of Sc and Zr on the precipitate distribution in pre-stretched Al-Cu alloys*	**ORAL**
16:30	**Fulin Wang** Shanghai Jiao Tong University *Microscopic and mesoscopic deformation behaviors of dual-phase Mg-Li-Gd alloy*	**ORAL**
16:45	**Fulin Wang** Shanghai Jiao Tong University *Advancements in electron microscopy techniques for characterizing dislocations in light metallic alloys*	**INVITED**
17:00	**Shuai Dong** Shanghai Jiao Tong University *Towards dense corrosion-resistant plasma electrolytic oxidation coating on Mg-Gd-Y-Zr alloy by using ultra-high frequency pulse current*	**INVITED**
17:15	**FINAL COMMENTS**	

LMT2023

10TH INTERNATIONAL LIGHT METALS TECHNOLOGY CONFERENCE
RMIT, MELBOURNE, AUSTRALIA | 10 - 12 JULY 2023

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