



4th INTERNATIONAL FORUM ON ADDITIVE MANUFACTURING

Chair: Prof. M. Brandt, RMIT University

Co-Chairs: A/Prof. A. Molotnikov, A.
Kingsbury, Prof. M Qian, Prof. M. Leary
and Dr. J. Elambasseril
RMIT University

September 9, 2020

Virtual Conference
RMIT University
Australia

PROGRAM

REGISTRATION <https://cam-rmit-forum2020.eventbrite.com.au>

**RMIT University acknowledges the
Wurundjeri people of the Kulin Nations
as the traditional owners of the land
on which the University stands.**

**RMIT University respectfully recognises
Elders, both past and present.**



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WELCOME



Professor Milan Brandt
Technical Director, AMP
Director Centre for Additive Manufacturing
RMIT University, Australia

Welcome to the 4th International Forum on Additive Manufacturing

On behalf of the Centre for Additive Manufacturing and the organising committee, I would like to welcome you to the Forum. Additive manufacturing is now globally recognised as a mainstream manufacturing technology in a range of industries such as aerospace, automotive, defence and medical. Compared to more traditional subtractive technologies, additive manufacturing offers greater advantages for part complexity, material utilisation and environmental impact. Fully functional parts or products, with many different components, are able to be produced simultaneously and on demand, thereby reducing the cost of production and dramatically accelerating the time it takes to take a product to market.

In these unprecedented times the 4th International Additive Manufacturing Forum is delivered virtually but still provides an opportunity for national and international practitioners to share, discuss and explore challenges and progress in additive technologies and applications in the context of defence, automotive and medical requirements. One day sessions focus on additive technology for manufacture of functional components, repair/refurbishment for re-manufactured parts, materials used, design for manufacture and modelling.

RMIT plays a leading role locally in both teaching and research in manufacturing. The Advanced Manufacturing Precinct was established by RMIT in late 2011 to deliver integrated teaching and research activities in advanced manufacturing technologies, applied design and product development. It comprises state-of-the-art metal and polymer additive machines coupled with the latest five- and six-axis CNC machining centres and I4.0 demonstrator facility. The Centre for Additive Manufacturing focusses on research and development of additive manufacturing solutions for local and global organisations and so it is fitting that it is hosting this event that brings together industry and academia from local and international organisations to hear the latest research and development in the technology.

This Forum presents an opportunity for Australian companies to further their understanding of the prospects, challenges and opportunities in applying Additive Manufacturing technology.

I hope you find the Forum informative and beneficial.



PROGRAM

Wednesday, 9 September

MORNING

	SESSION CHAIR	Prof. Milan Brandt RMIT University, Australia
9.00–9.05	Welcome and opening remarks	<i>Prof. Milan Brandt</i> RMIT University, Australia
9.05–9.45	Keynote 1. 3D Metal Printing for Advanced Automotive Applications	<i>Richard Taube</i> Ford, Australia
9.45–10.10	Convergence of Additive Manufacturing and scaffold-guided tissue engineering	<i>Prof. Dietmar Hutmacher</i> QUT, Australia
10.10–10.35	Additive Manufacturing by thermal spraying to form Near Net shapes	<i>Prof. Chris Berndt</i> Swinburne Uni., Australia
10.35–11.00	Metal Additive manufacturing business of RAM3D	<i>Warwick Downing</i> RAM3D, New Zealand
	SESSION CHAIR	Prof. Ma Qian RMIT University
11.00–11.25	Advances in plasma rotating electrode process technology (PREP) for metal powder production	<i>Dr. Hui Wang</i> Xian Sailong Metal Materials, China
11.25–11.50	Effect of particle feedstock shape on laser clad structures using SS 431	<i>Dr. Colin Hall</i> Uni South Australia, Australia
11.50–12.15	Ballistic performance of additively manufactured Ti6Al4V alloy	<i>Dr. Alex Medvedev</i> RMIT University, Australia
12.15–12.40	Role of defects on the fatigue performance of laser additively repaired 300M aerospace steel	<i>Dr. Cameron Barr</i> RMIT University, Australia
12.40–13.30	Break	

AFTERNOON

	SESSION CHAIR	Prof. Martin Leary RMIT University
13.30–13.55	Research directions in digital manufacturing	<i>Dr. Mike Regan</i> HP Labs, Singapore
13.55–14.20	Mechanical response of customised load bearing orthopaedic implants	<i>Dr. Darpan Shidid</i> RMIT University, Australia
14.20–14.45	Modelling of defects in additively manufactured lattice structures	<i>Bill Lozanovski</i> RMIT University, Australia
14.45–15.10	Exploitation of anisotropic properties of LPBF AISi10Mg: A starting point for metal AM Defence certification	<i>Keren Reynolds</i> BAE Systems, Australia
	SESSION CHAIR	A/Prof. Andrey Molotnikov RMIT University
15.10–15.35	Life cycle qualification via hybrid AM	<i>Steve Milanoski</i> Romar Engineering, Australia
15.35–16.15	Keynote 2. Additive Manufacturing: From Science to Application	<i>Prof. Christoph Leyens</i> Fraunhofer IWS, Germany
16.15–16.40	Additive Manufacturing of heterogeneous materials for Aerospace and Defence applications	<i>Dr. Jeff Lang</i> Titomic, Australia
16.40–17.05	Latest monitoring features for high-performance Additive Manufacturing	<i>Markus Lindamenn</i> TRUMPF, Germany
17.05–17.30	Progress of wire Additive Manufacturing WAM® for industrial large format manufacturing	<i>Dr. Andrew Sales</i> AML3D, Australia

