

# MaD For the Future 2017

## Wednesday 10 May 2017

8:00 AM - 9:00AM	<b>Registration Opens (Level 3 Kawau 1)</b>		
9:00 AM - 9:20 AM	<b>Conference Opening (Rangitoto 1)</b> Professor Simon Bickerton (Chair, MaD Network)   Professor Nic Smith (Dean of Engineering, The University of Auckland)   Vic Crone (CEO, Callaghan Innovation)		
9:20 AM - 10:00 AM	<b>Keynote Speaker: Crispin Hales - Hales &amp; Gooch Ltd.</b> <b>WHY FOLLOW WHEN YOU CAN LEAD? ADDING VALUE TO THE NEW ZEALAND GENIUS</b> Session Chair: Simon Bickerton (Chair, MaD Network, The University of Auckland) Room: Rangitoto 1		
10:00 AM - 10:30 AM	<b>Morning Tea Break (Kawau 1)</b>		
10:30 AM - 12:30 PM	<b>PARALLEL TECHNICAL SESSIONS</b>		
	DESIGN AND INNOVATION Session Co-Chairs: Shayne Gooch   Mike Duke Room: Rangitoto 1	DESIGN AND INNOVATION (PRODUCT ASSOCIATED CONTEXT) Session Co-Chairs: Andrew Drain   Michael Kingan Room: Rangitoto 2	PRODUCT AND PROCESS INNOVATION Session Co-Chairs: Marcel Schaefer   Alisyn Nedoma Room: Rangitoto 3
	STAIRCASING INDUSTRY ENGAGEMENT: A BOTTOM-UP PRACTICE BASED MODEL FOR INTEGRATING DESIGN RESEARCH INTO INDUSTRY - Simon Fraser, Victoria University of Wellington	THE INVERSE ROUTE: FROM INDUSTRY FOCUS TO THE ACADEMIC WORLD. WHAT ARE THE BEST PROJECTS TO WORK IN? - Lorenzo Garcia, Auckland University Of Technology	FAST NPD AND RISK; REDUCING RISK WHEN MOVING FAST. - Craig Shannon, Globex
	THE WHISPERGEN STORY. A NEW ZEALAND DESIGN AND MANUFACTURING SUCCESS? - Don Clucas, University Of Canterbury	HUMAN-CENTERED-DESIGN: AN INSIGHT INTO SOUTH-EAST ASIAN RURAL MARKETS - Andrew Drain, Massey University	COLLABORATIVE INNOVATION AT THE CENTRE FOR AUTOMATION AND ROBOTICS ENGINEERING SCIENCES - Bruce MacDonald, The University Of Auckland
	DESIGNING OUR FUTURE - Mark Battley, The University Of Auckland	THE DEVELOPMENT OF A NEW DESIGN TOOL FOR ORGANIC RANKINE CYCLES - Wei Yu, The University Of Auckland	INNOVATIVE DESIGN OF AIR COOLED HIGHLY FINNED TUBE CONDENSER - Haiam Abbas, Heavy Engineering Research Association
	HOW TO CREATE A SUCCESSFUL PRODUCT - Oliver McDermott, Blender Design Ltd	MODULAR LIGHTWEIGHT FURNITURE WITH INTEGRAL FASTENERS USING POST-TENSIONING - Hans-Christian Wilhelm, Victoria University Of Wellington	ADVANCED BIOBASED PRODUCTS - COMBINING SUSTAINABILITY WITH PERFORMANCE - Florian Graichen, Scion
	MAD PIPELINES: EMERGING METHODOLOGICAL PIPELINES FOR DESIGN AND MANUFACTURING PROCESSES - Dermott McMeel, The University Of Auckland	A CASE STUDY IN DESIGN-LED INNOVATION - Rob Heebink, Gallagher Group Limited	NEXT GENERATION SURFACE COATINGS BASED ON ZERO EMISSION AND NO WASTE MANUFACTURING APPROACH - Marcel Schaefer, Auckland University of Technology
	ON THE DESIGN OF ASSISTIVE DEVICES FOR PEOPLE WITH TETRAPLEGIA IN A NEW ZEALAND CONTEXT - Shayne Gooch, University Of Canterbury	EARTHQUAKE BENCH PROTOTYPE: A RECONCEIVED DIGITAL WORKFLOW - Tonya Sweet, Victoria University of Wellington	SOUND CONCEPTS PLATFORM: VISUALISING SOUND CONCEPTS - Natasha Perkins, Victoria University Of Wellington
	ADDRESSING A WORLDWIDE GEOTHERMAL ENERGY UTILIZATION PROBLEM BY PRODUCING A NOVEL PRODUCT WITH INDUSTRIAL AND CONSUMER APPLICATIONS - Jim Johnston, Victoria University of Wellington	HIGHLY STRETCHABLE 3D-PRINTED ELECTRICAL COMPONENTS USING CARBON NANOCOMPOSITES - Tim Giffney, The University Of Auckland	INDUSTRIAL SCALE ION BEAM TECHNOLOGIES FOR NEW ZEALAND MANUFACTURING - John Kennedy, GNS Science
	AERODYNAMIC AND STRUCTURAL DESIGN OF SMALL SCALE TURBINE FOR ORGANIC RANKINE CYCLE SYSTEM - Lei Chen, Heavy Engineering Research Association	ACOUSTICAL TESTING AND DESIGN FOR ACCEPTABLE NOISE - Michael Kingan, The University Of Auckland	NANOSTRUCTURAL CONTROL IN PLASTIC ELECTRONIC FILMS - Alisyn Nedoma, The University Of Auckland
DIBBLER CASE STUDY – A DESIGN METHODOLOGY FOR DEVELOPING SPECIALIST, AUTOMATED, AGRICULTURAL MACHINERY IN NEW ZEALAND. - Mike Duke, Waikato University			
12:30 PM - 1:20 PM	<b>Lunch Break (Kawau 1)</b> <b>Poster and Exhibition Viewing</b>		
1:20 PM - 2:00PM	<b>Keynote Speaker: Cather Simpson - The University of Auckland</b> <b>HIGH TECH INNOVATION IN AN INDUSTRIAL CONTEXT</b> Session Chair: Simon Bickerton (Chair, MaD Network, The University of Auckland) Room: Rangitoto 1		
2:00 PM - 3:00 PM	<b>BREAK OUT SESSION 1</b> COLLABORATIVE MaD Session Co-Chairs: Jesse Keith (Callaghan Innovation)   Steve Wilson (Talbot Technologies Ltd) Room: Rangitoto 1		<b>FUTURE YOUNG RESEARCHERS</b> Session Co-Chairs: Khalid Arif (Massey University)   Shayne Gooch (University of Canterbury) Room: Rangitoto 2
	<b>Afternoon Tea (Kawau 1)</b> <b>Poster and Exhibition Viewing</b>		
3:00 PM - 4:00 PM	<b>BREAKOUT SESSION 2</b>		
4:00 PM - 5:00 PM	IoT and INDUSTRY 4.0 Session Co-Chairs: Xun Xu (The University of Auckland)   Kevin Marett (LEAP Australia) Room: Rangitoto 1		<b>DESIGN FOR ADDITIVE MANUFACTURING AND THE FUTURE OF COMPOSITE MANUFACTURING</b> Session Co-Chairs: Mike Fry (TiDA Ltd)   Johan Potgieter (Massey University) Room: Rangitoto 2
	<b>Conference Dinner (Rakino Room)</b> with inaugural set-piece, formal address by Hon. Minister Paul Goldsmith		

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# Thursday 11 May 2017

8:30 AM - 9:00 AM	<b>Registration Opens (Level 3 Kawau 1)</b>		
9:00 AM - 9:10 AM	<b>Introduction of Day (Rangitoto 1)</b> Simon Bickerton (Chair, MaD Network, The University of Auckland)		
9:10 AM - 9:50 AM	<b>Plenary Speaker: Eberhard Klotz - Festo</b> <b>INDUSTRIE 4.0 IN ACTION</b> <b>Sponsored by Festo</b> Session Chair: Xun Xu (Chair, MaD Conference Committee, The University of Auckland) Room: Rangitoto 1		
9:50 AM - 10:30 AM	<b>Morning Tea Break (Kawau 1)</b>		
10:30 AM - 12:30 PM	<b>PARALLEL TECHNICAL SESSIONS</b>		
	<b>FUTURE OF MANUFACTURING TECHNOLOGY</b> Session Co-Chairs: Kenneth Husted   Don Cleland Room: Rangitoto 1	<b>ADDITIVE MANUFACTURING</b> Session Co-Chairs: Jim Johnston   Khalid Arif Room: Rangitoto 2	<b>SPECIALISED MANUFACTURING PROCESSES</b> Session Co-Chairs: Steven Dirven   Chris Bumbay Room: Rangitoto 3
	INDUSTRY 4.0 - WHAT'S IN IT FOR US? - Dieter Adam, NZMEA	ADDITIVE MANUFACTURING AND INTERNET OF THINGS: ACCELERATING RESEARCH AND DEVELOPMENT THROUGH A CASE STUDY APPROACH - Stephen Wilson, Talbot Technologies Ltd	FLUX PUMP BRUSHLESS EXCITERS FOR SUPERCONDUCTING GENERATORS - Chris Bumbay, Victoria University Of Wellington
	INDUSTRY 4.0 SMART MANUFACTURING SYSTEMS LABORATORY - Xun Xu, The University Of Auckland	FREEFORM 3D PRINTING: TOWARDS A NEW PARADIGM IN MANUFACTURING - Tim Miller, Vicoira University of Wellington	ENHANCED LASER ABLATION OF BONE TISSUE USING ULTRAFAST PULSED BESSEL BEAMS FOR APPLICATIONS IN LASSOS - Simon Ashforth, The University Of Auckland
	POLYMER COMPOSITE MANUFACTURING TECHNOLOGIES FOR THE FUTURE - Simon Bickerton, The University Of Auckland	THE USE OF COMPUTER AIDED ENGINEERING AND 3D PRINTING IN THE DEVELOPMENT OF A ROBOTIC KIWI FRUIT HARVESTING GRIPPER. - Mike Duke, Waikato University	DEVELOPMENT OF CONTINUOUS REEL-REEL PILOT MANUFACTURING PROCESSES FOR PRODUCTION OF SUPERCONDUCTING ROEBEL CABLE - Kent Hamilton, Victoria University Of Wellington
	INDUSTRY 4.0 EASILY IMPLEMENTED WITH BECKHOFF - Steven Sischy, Beckhoff Automation Limited	MASSEY UNIVERSITY CENTRE FOR ADDITIVE MANUFACTURING: A REVOLUTION IN DESIGN ENGINEERING - Johan Potgieter, Massey University	NATURAL FIBRE AND NATURAL FIBRE COMPOSITES: SURFACE MODIFICATION, PROCESSING AND FUNCTIONALIZATION - Xiaowen Yuan, Massey University
	GIVING MACHINES EYES: HOW COGNITIVE COMPUTING CAN DETECT DEFECTS IN REAL TIME - Elinor Swery, IBM	EFFECTS OF LASER POWER ON GRAIN GROWTH DURING SELECTIVE LASER MELTING OF METALLIC ALLOYS: DIRECTION AND CELL SIZE - Zhan Chen, Auckland University Of Technology	FUNCTIONALISED POLYMERS FOR MORE EFFICIENT NANOSECOND UV LASER MICROMACHINING - Hong Kang, The University Of Auckland
	EXPLOITING DIGITAL TECHNOLOGIES TO INNOVATE IN MANUFACTURING - Mehdi Shahbazzpour, Fletcher Building	HYBRID ADDITIVE MANUFACTURING: INTEGRATION OF MULTIPLE ADDITIVE MANUFACTURING TECHNIQUES TO ACHIEVE HIGH VALUE MULTIFUNCTIONAL OBJECTS - Jonathan Stringer, The University Of Auckland	HIGH ACCURACY PERSONALISED MANUFACTURING TO ASSESS BALLISTIC DAMAGE TO THE HUMAN CRANIUM - Eryn Kwon, The University Of Auckland
	INTERNET OF THINGS (IOT) ENABLED SMART MANUFACTURING FOR SMES - Ray Y. Zhong, The University Of Auckland	AUT PROCESS AND MATERIAL ALTERNATIVES FOR ADDITIVE MANUFACTURING; THE ANOMALIES - Sarat Singamneni, Auckland University Of Technology	PRESTRESS AND PRETORSION OF ELASTOMER COMPOSITES FOR - Steven Dirven, Massey University
	MANUFACTURING IN A WORLD OF DISRUPTIVE TECHNOLOGIES - Kevin Marett, LEAP Australia	INVESTIGATION OF THE TEMPORAL SPACING EFFECT ON FUSED DEPOSITION MODELLED PART PROPERTIES - Arno Ferreira, Massey University	DEVELOPING A 3D PRINTER FOR THE MANUFACTURE OF CELLULOSE HYDROGELS - Tim Huber, University Of Canterbury
	THE KEY ROLE OF TRADITIONAL INDUSTRIES FOR CREATING HIGH-TECH GROWTH - Kenneth Husted, The University Of Auckland	CHARACTERISATION OF 3D PRINTED, RUBBER-LIKE MATERIAL FOR PRODUCT DESIGN AND FABRICATION - Frazer Noble, Massey University	
INTEROPERABLE EXECUTION ON HETEROGENEOUS PLATFORMS IN MODERN INDUSTRIAL ENVIRONMENTS - Zoran Salcic, The University Of Auckland	DEVELOPING THE 3D PRINTING ECOSYSTEM IN NEW ZEALAND - Jim Collins, Fuji Xerox New Zealand		
12:30 - 1:20 PM	<b>Lunch Break (Kawau 1)</b> <b>Poster and Exhibition Viewing</b>		
1:20 PM - 2:00 PM	<b>Plenary Speaker: Ross Stevens - Victoria University of Wellington</b> <b>3D and 4D PRINTING PIONEERS</b> Session Chair: Simon Fraser (Professor of Industrial Design, School of Design, Victoria University of Wellington) Room: Rangitoto 1		
2:00 PM - 3:00 PM	<b>PANEL DISCUSSIONS</b>		
	Industry 4.0: A Step-change for New Zealand Manufacturing Lead Panellist: Dieter Adam (NZMEA) Room: Rangitoto 1	NZ High Value-added Manufacturing and Design - Status Quo and into the Future Lead Panellist: Catherine Beard (ManufacturingNZ & ExportNZ) Room: Rangitoto 2	Design Innovations and Innovation for Design Lead Panellist: Simon Fraser Victoria University of Wellington Room: Rangitoto 3
	<i>Panellists to include</i>	<i>Panellists to include</i>	<i>Panellists to include</i>
	Eberhard Klotz (Festo)	Kim Campbell (EMA)	Crispin Hales (Hales & Gooch Ltd)
	Nathan Stantiall (Callaghan Innovation)	Kenneth Husted (The University of Auckland)	Ross Stevens (Victoria University of Wellington)
Sayuj Nath (National Instruments)	Steve Wilson (Talbot Technologies)	Jesse Keith (Callaghan Innovation)	
	Laurence Gulliver (F&P Healthcare)	Shayne Gooch (University of Canterbury)	
3:00 PM - 4:00 PM	<b>Afternoon Tea (Kawau 1)</b> <b>Poster and Exhibition Viewing</b> <b>MaD CoRE Meeting (Rangitoto 3)</b>		
4:00 PM - 5:00 PM	<b>Awards and Conference Closing (Rangitoto 1)</b> <b>Awards Sponsored by UniServices</b>		
Post Closing	<b>Networking Cocktails (Marvel Grill)</b> <b>Sponsored by the MaD Network</b>		

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## Poster Presentations

High Value Manufacturing	MINIMISING DEFECTS AND IMPROVING MANUFACTURING PROCESSES OF COMPOSITE STRUCTURES PRODUCED VIA LIQUID MOULDING - Sam van Oosterom, The University Of Auckland
Industry 4.0	PC-BASED AUTOMATION PROVIDES A SOLID TECHNOLOGICAL FOUNDATION FOR INDUSTRY 4.0 ARCHITECTURES - Neil Pearce, Beckhoff Automation Limited
Industry 4.0	AUGMENTED REALITY-ASSISTED INTELLIGENT WINDOW FOR CYBER-PHYSICAL MACHINE TOOLS - Chao Liu, The University Of Auckland
Industry 4.0	CLOUD-BASED MANUFACTURING SERVICES FOR SMART FACTORIES - Khamdi Mubarak, The University Of Auckland
Industry 4.0	CYBER-PHYSICAL 3D PRINTING SYSTEM - Yuanbin Wang, The University Of Auckland
Manufacturing Processing	IMPROVING THE RATE OF CRYSTALLIZATION OF POLYLACTIC ACID (PLA) ON OPEN SOURCE 3D PRINTERS - Muhammad Harris, Massey University
Manufacturing Processing	ABLATION RATE DEPENDENCE ON MATERIAL BANDGAP AND PULSED TIME DELAY FOR ULTRASHORT PULSED DUAL WAVELENGTH MACHINING - Thomas Ward, The University Of Auckland
Manufacturing Processing	SUPPORT STRUCTURES FOR 3D PRINTING - Jingchao Jiang, The University Of Auckland
Manufacturing Technologies	DEVELOPMENT OF A LOW COST INKJET 3D PRINTER - Blair Dixon, Massey University
Manufacturing Technologies	LARGE SCALE PRINTING IN THE DAIRY INDUSTRY - Kevin Silver, Massey University
Manufacturing Technologies	RETROFITMENT AND OPTIMIZATION OF A LEGACY FDM SYSTEM FOR BIOPOLYMER 3D PRINTING - Hayden Wilson, Massey University
Manufacturing Technologies	DEVELOPMENT OF 3D PRINTING TECHNOLOGY FOR FLEXIBLE SUPERCAPACITORS - Hayden Wilson, Massey University
Manufacturing Technologies	CHARACTERIZATION OF SLS COMPOSITE POWDER PROPERTIES - Cameron Mearns, Massey University
Manufacturing Technologies	MARKER-LESS REGISTRATION IN MIXED PROTOTYPING PROCESS - Yuan Lin, The University Of Auckland
Manufacturing Systems	STRESS REDUCTION THROUGH DIGITAL TECHNOLOGY IN MANUFACTURING. - Purushothaman Mahesh Babu, Auckland University of Technology
Advanced Materials Manufacturing	FABRICATION PROCESS OF CARBON FIBRE COMPOSITE MATERIALS FOR ADDITIVE MANUFACTURING - Andrew Kvalsvig, Massey University
Advanced Materials Manufacturing	EXTRUSION SYSTEM FOR 3D PRINTING FROM BIOPOLYMER PELLETS - Sean Whyman, Massey University
Advanced Materials Manufacturing	SUPER-HYDROPHOBICITY OF CASTED PDMS SURFACES - Ellen Jose, The University Of Auckland
Advanced Materials Manufacturing	ENHANCING THE QUALITY OF CARBON FIBRE REINFORCED PLASTICS WITH NOVEL NON-DESTRUCTIVE TESTING - Tino Hermann, The University Of Auckland
Advanced Materials Manufacturing	ADDITIVE MANUFACTURING USING SUGAR IN CARAMEL FORM - Hossein Najaf Zadeh, The University of Canterbury
Advanced Materials Manufacturing	TEXTILE SIMULATIONS FOR VIRTUAL COMPOSITE MATERIALS MANUFACTURING - Willsen Wijaya, The University Of Auckland
Industrial Design / Product Design	STIRLING ENGINE DESIGN AND EMPIRICAL OPTIMISATION. - Jose Egas, The University of Canterbury
Design Innovation	EXPLORING THE CAPABILITY BUILDING FOR DOING FRUGAL INNOVATION WITHIN DEVELOPED MARKET FIRMS - Fasiha Subhan, The University Of Auckland
Design Innovation	EMOTIONAL QUALITIES OF PARAMETRICALLY DESIGNED SURFACES - Jeongbin Ok, Victoria University Of Wellington
Smart Product Development	PRODUCT CONFIGURATION FOR THE PERSONALIZATION OF SMART PRODUCTS - Shiqiang Yu, The University Of Auckland
Smart Product Development	SMART WEARABLES WITH CLOUD-BASED AUTOMATED MONITORING: A CASE STUDY - Pai Zheng, The University Of Auckland
Collaborative Innovation	FACTORS AFFECTING KNOWLEDGE SHARING BEHAVIOUR IN COLLABORATIVE INNOVATION - Dana Cumin, The University Of Auckland
High Performing Work Systems and Industry 4.0	DECENTRALISED OR CENTRALISED; WHICH ONE IS BETTER AT MANAGING CHANGE IN PD? - Janaka Rajapaksha Mudiyansele, The University Of Auckland
Open Innovation and Industry 4.0	REVEALING REVEALED – HOW INNOVATIVE FIRMS OPENLY SHARE KNOWLEDGE - Saumya Amarasinghe, The University Of Auckland

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