

MaD2018 Programme

Monday 21 May 2018

8:00 AM - 8:45 AM	Registration Opens (Level 3 Kawau 1)		
8.45 AM - 9:30 AM	Conference Opening (Rangitoto 1) Prof Nic Smith (Dean of Engineering, The University of Auckland) Vic Crone (CEO, Callaghan Innovation) Steve Saunders (Owner/Founder, Plus Group) Prof Simon Bickerton (MaD Network Leader, The University of Auckland) Session Chair: Dr Mark Battley (MaD2018 Co-chair, The University of Auckland)		
9:30 AM - 10:00 AM	Keynote Speaker: Professor Alexander Slocum (Professor of Mechanical Engineering, Massachusetts Institute of Technology, USA) RAPID DETERMINISTIC DEVELOPMENT OF MEDICAL DEVICES Session Chair: Prof Jim Johnston (MaD2018 Co-Chair, Victoria University of Wellington) Room: Rangitoto 1		
10:00 AM - 10:30 AM	Morning Tea Break (Kawau 1) - sponsored by University of Canterbury		
10:30 AM - 12:30 PM	CONCURRENT CONFERENCE SESSION 1		
	ADDITIVE MANUFACTURING AND DESIGN (1) Session Co-Chairs: Don Clucas (University of Canterbury) Florian Graichen (Scion) Room: Rangitoto 1	MANUFACTURING AND DESIGN - FUTURE LOOKING Session Co-Chairs: Mike Duke (University of Waikato) Craig Shannon (Globex Engineering) Room: Rakino	DESIGN AND MANUFACTURING Session Co-Chairs: Shayne Gooch (University of Canterbury) Suvig Chand (Zenith Tecnica) Room: Rangitoto 3
	SYSTEMS OF MAKING: INNOVATIVE DESIGN APPLICATIONS OF 3D PRINTING TECHNOLOGIES - Simon Fraser, Victoria University of Wellington	TWO BANGS FOR YOUR BUCK – DEVELOPMENTS IN NEW ZEALAND’S AGRICULTURAL ROBOTICS INDUSTRY - Mike Duke, Waikato University	ENGINEERING AN ARTWORK - Shayne Gooch, University of Canterbury
	DESIGN FOR ADDITIVE MANUFACTURE OF FUNCTIONING ENGINES - Don Clucas, University of Canterbury	THREE PRODUCT TECHNOLOGIES THAT ARE BECOMING MORE AVAILABLE - Craig Shannon, Globex Engineering	VIRTUAL ENGINEERING - MYTHS AND LEGENDS - Mark Battley, The University of Auckland
	ADDITIVE MANUFACTURING FOR THE AIRCRAFT INDUSTRY - Sarat Singamneni, Auckland University of Technology	MATERIALITY, 4D DESIGN AND METAMATERIALS - Monique Bateman, Victoria University of Wellington	DESIGN TO DO MORE. THE TASKA PROSTHETICS DEVELOPMENT JOURNEY. - Carl Menary, 4ormfunction
	A BRIEF OVERVIEW OF THE EBM ADDITIVE PROCESS - Jonathan Paul, Zenith Tecnica	THE FUTURE COMPOSITE MANUFACTURING FACTORY - Tim Smyth, Core Builders Composites	DOING THE LAUNDRY WITH BRAINS, NOT BRAWN - Jennifer Trittschuh, Fisher & Paykel Appliances
	INKJET PRINTING OF DIGITALLY CONTROLLED SELF FOLDING STRUCTURES - Jonathan Stringer, The University of Auckland	STRUCTURING INDUSTRIAL RESEARCH FOR SUCCESS – A CASE STUDY OF THE DISHDRAWER® WASH PUMP EVOLUTION - Wayne Mason, Fisher & Paykel Appliances	CREATIVE SUSTAINABILITY: A DESIGN-ORIENTED APPROACH - Sophia Cameron, Victoria University of Wellington
	ROUGH STUFF – EBM’S ACHILLES HEEL? - Christopher Taylor, Zenith Tecnica	YOUR REFRIGERATORS SUSTAINABILITY DILEMMA - Sara Macready, Fisher & Paykel Appliances	DESIGN FOR EBM PRODUCTION - Suvig Chand, Zenith Tecnica
ADDITIVE MANUFACTURING IN A BIOECONOMY - 3D PRINTING OF BIOBASED POLYMERS AND COMPOSITES - Florian Graichen, Scion	DOING WELL BY DOING GOOD: SUSTAINABLE MANUFACTURING STRATEGIES AND OPPORTUNITIES THROUGH LEAN AND GREEN THINKING - Savindi Caldera, Queensland University of Technology	COGNITIVE LOADS IN VR AND VR VISUALISATIONS - Brandon Wang, Victoria University of Wellington	
SOLIDIFICATION DURING SELECTIVE LASER MELTING - Zhan Chen, Auckland University of Technology	FACILITATING MATERIAL REUSE IN THE BUILDING INDUSTRY THROUGH COMPUTER-AIDED FABRICATION - Gerard Finch, Victoria University of Wellington	THE FLYING LOUNGE - Gavin Balasingam, AIM Altitude	
12:30 PM - 1:30 PM	Lunch Break (Kawau 1) Poster and Exhibition Viewing		
1:30 PM - 2:00 PM	Keynote Speaker: Peter Beck (CEO, Chief Engineer and Founder - Rocket Lab Ltd) OPENING SPACE FOR BUSINESS THROUGH INNOVATIVE DESIGN AND ADVANCED MANUFACTURING Session Chair: Dr Mark Battley (MaD2018 Co-Chair, The University of Auckland) Room: Rangitoto 1		
2:00 PM - 3:30 PM	CONCURRENT CONFERENCE SESSION 2		
	ADDITIVE MANUFACTURING AND DESIGN (2) Session Co-Chairs: Tim Miller (Victoria University of Wellington) Khalid Arif (Massey University) Room: Rangitoto 1	SPECIALISED MANUFACTURING Session Co-Chairs: Marcel Schaefer (AUT) Alisyn Nedoma (The University of Auckland) Room: Rakino	COLLABORATION IN R&D Session Co-Chairs: Don Cleland (Massey University) Maziar Ramezani (AUT) Room: Rangitoto 3
	FREEFORM 3D PRINTING: TOWARDS THE SPATIAL PRODUCTION OF DIGITALLY CRAFTED PRODUCTS. - Tim Miller, Victoria University of Wellington	THE FUTURE OF MANUFACTURING – BASED ON SURFACE COATING TECHNIQUES - Marcel Schaefer, Auckland University of Technology	A SUCCESSFUL MODEL FOR UNIVERSITY INDUSTRY COOPERATION WITH CASE STUDIES - John Pearce, University of Canterbury
	METROLOGY IN ADDITIVE MANUFACTURING - Peter Sefont, Zenith Tecnica	MANUFACTURING FLEXIBLE CIRCUITS WITH CONDUCTIVE PLASTIC - Alisyn Nedoma, The University of Auckland	COMPETITIVE SCIENCE FUNDING THAT ENCOURAGES FAILURE! - Don Cleland, Massey University
	5 EXTENDING WEAR LIFE BY LASER CLADDING - Christiane Schulz, University of South Australia	ADVANCEMENTS IN NANOFIBRE TECHNOLOGY - Iain Hosie, Revolution Fibres	A COLLABORATIVE APPROACH TO THE DEVELOPMENT OF AN ETCO2 SIGNAL GENERATOR FOR THE HARTWELL SIMULATOR IMMERSIVE CLINICAL TRAINER - Greg Morehouse, Motovated Design & Analysis Ltd
	ADDITIVE MANUFACTURE AS AN ACCESSIBLE AND NOVEL METHOD FOR VALUABLE INNOVATION IN HEALTHCARE - Ella Murphy, Victoria University of Wellington	BETTER BY ANALYSIS - MODERNISING SIMULATION METHODS - Leon Daly, Motovated Design & Analysis Ltd	WHEN WE WORK TOGETHER, WE CAN ACHIEVE GREAT THINGS - Simon Hall, Caliber Design
METAL ADDITIVE MANUFACTURE OF A HEAT EXCHANGER - Neil Glasson, Callaghan Innovation	MANUFACTURE OF SUPERCONDUCTING DEVICES AND MACHINES - Chris Bumby, Victoria University of Wellington	INTEGRATION – IT IS NOT JUST ABOUT CONNECTION - Penny Anderson, FeatureIT Limited	
METAL 3D PRINTING - BEYOND THE HYPE - Warwick Downing, RAM3D	MANUFACTURING HIGH-QUALITY, LOW TOXICITY QUANTUM DOTS - Thomas Nann, Victoria University of Wellington	TRIBOLOGY RESEARCH AT AUCKLAND UNIVERSITY OF TECHNOLOGY - Maziar Ramezani, Auckland University of Technology	
3:30 PM - 4:00 PM	Afternoon Tea (Kawau 1) - sponsored by University of Waikato Poster and Exhibition Viewing		
4:00 PM - 5:00 PM	CONCURRENT PANEL DISCUSSION SESSION 1		
	NAVIGATING NZ’S RESEARCH FUNDING SYSTEM Lead Panellist: Catherine Beard (BusinessNZ) Room: Rangitoto 1	CHALLENGES AND OPPORTUNITIES FOR DIGITAL MANUFACTURING PROCESSES IN NZ Lead Panellist: Bruce McLean (Zenith Tecnica) Room: Rakino	
	<i>Panellists to include</i>	<i>Panellists to include</i>	
	Mark Battley (MaD2018 Co-chair, iMM Programme, The University of Auckland)	Olaf Diegel (MaD2018 Keynote Speaker, Professor of Product Development, Lund University, Sweden)	
	Prue Williams (GM, Science System Investments & Performance, MBIE)	Sean Gray (CEO, NZALS – NZ Artificial Limb Service)	
Sally Davenport (Director, NSC10: Science for Technological Innovation)	Tim Miller (Senior Lecturer – School of Design, Victoria University of Wellington)		
Vic Crone (CEO, Callaghan Innovation)	Tim Smyth (Manager, Core Builders Composites)		
5:00 PM - 6:00 PM	Collaborative Match-making (Rakino - level 3) Please see handbook for details of this session		
6:00 PM - 7:00 PM	Pre-dinner drinks and networking (Kawau - level 3)		
7:00 PM - 10:00 PM	Conference Dinner (Rangitoto 1, 2, 3 - level 2) - sponsored by Fisher & Paykel Appliances, includes formal address by Hon. Minister Megan Woods		

Tuesday 22 May 2018

8:15 AM - 8:45 AM	Registration Opens (Level 3 Kawau 1)		
8:45 AM - 9:00 AM	Introduction of Day (Rangitoto 1) Prof Jim Johnston (MaD2018 Co-chair, Victoria University of Wellington)		
9:00 AM - 9:30 AM	Keynote Speaker: Doctor Troy Coyle (CEO, Heavy Engineering Research Association) MANUFACTURING R&D IN NZ: A SOB STORY, A JOB STORY OR A FOB STORY? Session Chair: Prof Jim Johnston (MaD2018 Co-Chair, Victoria University of Wellington) Room: Rangitoto 1		
9:30 AM - 10:00 AM	Keynote Speaker: Professor Olaf Diegel (Professor of Product Development, Dept of Design Sciences, Faculty of Engineering, Lund University, Sweden) ADDITIVE MANUFACTURING: A BRIDGE TO UNTAPPED INNOVATION Session Chair: Prof Jim Johnston (MaD2018 Co-Chair, Victoria University of Wellington) Room: Rangitoto 1		
10:00 AM - 10:30 AM	Morning Tea Break (Kawau 1) - sponsored by University of Canterbury		
10:30 AM - 12:30 PM	CONCURRENT CONFERENCE SESSION 3		
	INDUSTRY 4.0 Session Co-Chairs: Robert Blache (Callaghan Innovation) Xun Xu (The University of Auckland) Room: Rangitoto 1	INNOVATION and COMMERCIALISATION Session Co-Chairs: John Kennedy (GNS Science) Kenneth Husted (University of Auckland) Room: Rakino	DESIGN FOR APPLICATIONS Session Co-Chairs: Derek Kawiti (Victoria University of Wellington) Digby Symons (University of Canterbury) Room: Rangitoto 3
	INTERNET OF THINGS: TREND, TECHNOLOGIES, AND EVOLUTION - Yu-An Chen, National Instruments	NEW ANTIMICROBIAL AND ANTIFOULING COATINGS FOR INDUSTRIAL AND CONSUMER APPLICATIONS - Jim Johnston, Victoria University of Wellington	HOW DID WE CREATE THE NEXT GENERATION OF GAS LEAK SENSORS – USING LASERS! - Ojas Mahapatra, Photonic Innovations Ltd
	BUILDING AN INDUSTRY 4.0 NETWORK GUIDE FOR NEW ZEALAND - Robert Blache, Callaghan Innovation	NEW SURFACE PROCESSING TECHNOLOGY FOR NEW ZEALAND MANUFACTURING - Jerome Leveueur, GNS Science	COMPUTATIONAL ALIGNMENTS: NEW TERRITORIES IN INDIGENOUS PARAMETRIC DESIGN AND FABRICATION. - Derek Kawiti, Victoria University of Wellington
	DRIVING INDUSTRY AWARD - Sean Carter, SICK NZ Ltd	VIRTUAL GEMBA WALKS - Mark Devantier, Fonterra	REMOTE MONITORING OF HANDWASHING PRACTICE IN HOSPITALS - Maneesh Deva, Waitemata District Health Board
	PC-BASED AUTOMATION PROVIDES A SOLID TECHNOLOGICAL FOUNDATION FOR INDUSTRY 4.0 ARCHITECTURES - Neil Pearce, Beckhoff Automation Ltd	CONCEPTUALISING THE PROBLEM-RICH ENVIRONMENT - Kenneth Husted, The University of Auckland	COMPUTATIONAL DESIGN OPTIMIZATION OF A DRY POWDER INHALER - Digby Symons, University of Canterbury
	DRAG AND DROP ROBOTS! INCREASING ROBOTIC FREEDOM IN UNCONTROLLED ENVIRONMENTS - Dermott McMeel, The University of Auckland	TAILORED LASER BEAM FOR FAST, EFFICIENT AND COMMERCIALY VIABLE ULTRA-FAST LASER MATERIALS PROCESSING - Claude Aguergaray, The University of Auckland	DESIGNING MEDICAL DEVICES: A TRANSLATIONAL COLLABORATION - Lorenzo Garcia, Auckland University of Technology
	PIMS, AIMS AND THE PATH TO THE ELUSIVE 'DIGITAL TWIN' - Bernard Fulton, Fonterra	THE PARTICULATE INJECTION MOULDING FABRICATION PROCESS. ARE MICRO-SCALE PRODUCTS VIABLE? - Paul Ewart, Waikato Institute of Technology	HEAT PUMP CONDENSING DRYER EFFICIENCY - Gordon Otte, Fisher & Paykel Appliances
	OOTB INDUSTRY 4.0 APPS FOR SMES WITH OPTIONAL AR INTERACTION - Allan Thompson, LEAP Australia	ACHIEVING PRODUCT-MARKET FIT IS THE KEY TO SUCCESS - Oliver McDermott, Blender	THE MECHANICAL PROPERTIES OF ALUXETIC PLATE METAMATERIALS Mark Tunncliffe, Massey University
	APPLIANCE CONTROLS AND PERCEPTION OF QUALITY - Simon Brown, Fisher & Paykel Appliances	HOW PROVENANCE CAN SUPPORT NZ MANUFACTURING - Russell Haines, Memory	SOFTWARE FOR SELECTION OF GEARED MOTORS & MOTION CONTROLLERS - Luke Gilpin, SEW EURODRIVE NZ
12:30 - 1:30 PM	Lunch Break (Kawau 1) Poster and Exhibition Viewing		
1:30 PM - 2:00 PM	Keynote Speaker: Brendan Lindsay (Lindsay Investments; previously Managing Director and Founder - Sistema Plastics) THE SISTEMA STORY – THE SUCCESSFUL MANUFACTURE OF PLASTIC CONTAINERS IN NEW ZEALAND FOR INTERNATIONAL MARKETS Session Chair: Nathan Stantiall (Callaghan Innovation) Room: Rangitoto 1		
2:00 PM - 3:00 PM	CONCURRENT PANEL DISCUSSION SESSION 2		
	RESEARCH STRATEGY FOR A MaD CoRE Lead Panellist: Cather Simpson (The University of Auckland, PI: McDiarmid Institute and Dodd-Walls Centre) Room: Rangitoto 1	INNOVATION IN MANUFACTURING AND DESIGN Lead Panellist: Simon Fraser (Professor of Industrial Design, Victoria University of Wellington) Room: Rakino	
	<i>Panellists to include</i> Alex Slocum (MaD2018 Keynote Speaker; Prof of Mechanical Engineering – MIT, USA) Don Cleland (Professor of Process Engineering – Massey University; NSC10 – SFTI Theme Leader) Jim Johnston (MaD2018 Co-chair; Prof of Chemistry, VUW; Emeritus Investigator – MacDiarmid Institute) Simon Bickerton (MaD NZ Leader; Professor of Mechanical Engineering – The University of Auckland)	<i>Panellists to include</i> Andrew Sharp (CEO, Bobux International Ltd) Greg Olsen (R&D Manager, Fisher & Paykel Healthcare) Mark Dyer (Professor and Dean of Engineering, University of Waikato) Sarah Jennings (COO, StretchSense)	
3:00 PM - 3:30 PM	Afternoon Tea (Kawau 1) - sponsored by Beckhoff Automation Ltd Poster and Exhibition Viewing		
3:30 PM - 4:30 PM	CONCURRENT PANEL DISCUSSION SESSION 3		
	COLLABORATION IN A MaD WORLD Lead Panellist: Allen Guimbert (R&D Collaboration Manager, Fisher & Paykel Appliances) Room: Rangitoto 1	INDUSTRY 4.0 Lead Panellist: Nathan Stantiall (Business Innovation Advisor, Callaghan Innovation) Room: Rakino	
	<i>Panellists to include</i> Gavin Balasingam (Head of Engineering, AIM Altitude) Graeme Finch (BDM, CACM, University of Auckland) Hémi Rolleston (GM Sectors, Callaghan Innovation) Oliver McDermott (Cofounder & MD, Blender Design Ltd)	<i>Panellists to include</i> David Chuter (CEO & MD, IMCRC – Innovative Manufacturing Cooperative Research Centre, Australia) Dieter Adam (CEO, The Manufacturer's Network) John West (Industry 4.0 Technology Manager, Fisher & Paykel Appliances) Xun Xu (Professor in Manufacturing, The University of Auckland)	
4:30 PM	Awards and Conference Closing (Rangitoto 1)		
Post Closing	Networking Cocktails (Beast and Butterfly, M Social Hotel) Sponsored by the MaD Network		

Poster Presentations

MANUFACTURING	JOB, SKILLS AND THE ORGANIZATION OF WORK IN INDUSTRY 4.0 Adebayo Adeniji, The University of Auckland
MANUFACTURING	INNOVATION IDEAS FRAMEWORK Mark Sorensen, Made Possible
MANUFACTURING	EFFECT OF FOCAL LENGTH AND BEAM TYPES FOR THE GENERATION OF SUB-DIFFRACTION LIMITED PORES IN POLYMER THIN-FILMS USING ULTRAFAST LASERS Tom Ward, The University of Auckland
MANUFACTURING	SELF-ORGANIZED NANOPARTICLES ON DEFECTIVE TITANIUM DIOXIDE FOR PHOTO-INDUCED ENHANCED RAMAN SPECTROSCOPY Junzhi Ye, The University of Auckland
MANUFACTURING	SCALING-DOWN THE DOMAIN SIZES OF A BULK HETEROJUNCTION (BHJ) Lal Azad, The University of Auckland
MANUFACTURING	MITIGATION OF THERMAL DISTORTION IN LASER-SINTERED ADDITIVELY MANUFACTURED POLYMER PARTS Delower Bhuiyan, Callaghan Innovation
MANUFACTURING	UNDERSTANDING DIFFERENCES IN PROPERTIES OF ADDITIVELY AND TRADITIONALLY MANUFACTURED MATERIALS FOR BETTER DESIGN DECISIONS Karl Dahm, Callaghan Innovation
MANUFACTURING	ADDITIVE MANUFACTURING OF SOFT SILICONE PARTS WITH INTEGRATED STRAIN SENSORS Tim Giffney, The University of Auckland
MANUFACTURING	COMPLEX PARTS FROM METAL/POLYMER FEEDSTOCKS – COMBINING THE SHAPEABILITY OF POLYMER WITH THE STRENGTH OF METAL Fred Lecarpentier, Callaghan Innovation
MANUFACTURING	HIGH PRECISION WELDING OF GLASS FOR HERMETICALLY SEALED DEVICES IN THE MEDICAL INDUSTRY USING ULTRAFAST LASERS Connor Murphy, The University of Auckland
MANUFACTURING	VISUAL PREDICTIVE APPROACH FOR STRENGTH AND DUCTILITY IN OPEN SOURCE 3D PRINTER Muhammad Harris, Massey University
MANUFACTURING	ADVANCEMENT IN TITANIUM METAL MATRIX COMPOSITES: EFFECTS OF BORIDES, NITRIDES AND CARBIDES Harshpreet Singh, The University of Auckland
MANUFACTURING	OPENPUPIL Callum Allen, Victoria University of Wellington
MANUFACTURING	SMART SOCK FOR IMPROVED ELECTRICAL STIMULATION FOR GAIT ASSISTANCE IN POST-STROKE PATIENTS Muhammad Faraz Shaikh, The University of Auckland
MANUFACTURING	EXTRUSION BASED 3D PRINTING FROM METAL/POLYMER PELLETS Sean Whyman, Massey University
MANUFACTURING	FATIGUE TESTING OF THIN-FILM MEMBRANES FOR IMPLANTABLE INTRACRANIAL PRESSURE SENSORS Nireekshan Kumar Sodavaram, Massey University
DESIGN	QUANTIFYING PREMIUM QUALITY FOR OUTDOOR GRILLS Kondwani Chinula, Fisher & Paykel Appliances
DESIGN	REPRESENTING AND REASONING ABOUT THE QUALITY OF PRELIMINARY DESIGN INFORMATION IN ENGINEERING PRODUCT DEVELOPMENT Jens Brinkmann, The University of Auckland
DESIGN	DESIGNING REALTIME LIGHTING VISUALISATION FOR URBAN ENVIRONMENTS Karwing Leung, Victoria University of Wellington
DESIGN	PORTABLE CAVE AUTOSAMPLER - AN INNOVATION TO RECORD THE EFFECT OF GEOLOGICAL CHANGES IN CAVES Shen Hin Lim, University of Waikato
DESIGN	SENZ—HANDWASHING MONITORS IN A CLINICAL SETTING Jake Powell, The University of Auckland
MANUFACTURING and DESIGN - Future Looking	MECHANICAL NOISE FROM INDUCTION COOKTOPS Ritchie Winter, Fisher & Paykel Appliances
MANUFACTURING and DESIGN - Future Looking	FABRICATION AND DEPOSITION OF NOVEL INORGANIC POLYMER MATERIALS Joshua Urgel, The University of Auckland
MANUFACTURING and DESIGN - Future Looking	APPLYING TECHNOLOGY TO IMPROVE VALUE EXTRACTION IN POUNAMU INDUSTRY Murray McCurdy, CRL Energy
MANUFACTURING and DESIGN - Future Looking	BRIDGING THE GAP BETWEEN 'FUZZIES' AND 'TECHIES' IN THE MANUFACTURING AND DESIGN SECTOR Stefan Korber, The University of Auckland
MANUFACTURING and DESIGN - Future Looking	EXPLORING CITIES THROUGH MIXED REALITIES Cyrus Qureshi, Victoria University of Wellington
MANUFACTURING and DESIGN - Future Looking	SOFT INFRASTRUCTURE: USE OF REAL-TIME VIRTUAL ENGINES AND BIG DATA TO ENABLE ROBUST PUBLIC CONSULTATION ON URBAN INFRASTRUCTURE PROJECTS Duong Nguyen, Victoria University of Wellington
INNOVATION and COMMERCIALISATION	DEVELOPMENT OF SUITABLE BINDER SYSTEMS FOR METAL INJECTION MOULDING (MIM) Muhammad Hayat, The University of Auckland