

# MaD2019 Programme

Monday 20 May 2019

8:00 AM - 8:45 AM	<b>Registration Opens</b>		
8:45 AM - 9:30 AM	<b>Conference Opening (Great Room 4)</b> Mihi, Nic Smith (Dean, Faculty of Engineering, University of Auckland), Vic Crone (CEO, Callaghan Innovation) Session Chair: Mark Battley (MaD2019 Co-chair, The University of Auckland)		
9:30 AM - 10:00 AM	<b>Keynote Speaker: Göran Roos (Founder &amp; MD, Innovation Performance Pty Ltd)</b> <b>NEW ZEALAND'S MANUFACTURING INTO THE FUTURE</b> Session Chair: Mark Battley (MaD2019 Co-chair, The University of Auckland) Room: Great Room 4		
10:00 AM - 10:30 AM	<b>Morning Tea Break (Great Room 1) - sponsored by University of Canterbury</b> <b>Poster and Exhibition Viewing</b>		
10:30 AM - 12:30 PM	<b>CONCURRENT CONFERENCE SESSION 1</b>		
	INDUSTRY 4.0 Session Co-Chairs: Robert Blache and Yuqian Lu Room: Great Room 2	INNOVATIONS IN MANUFACTURING AND DESIGN Session Co-Chairs: Simon Bickerton and Craig Shannon Room: Great Room 3	THE LANDSCAPE OF ADDITIVE MANUFACTURING Session Co-Chairs: Mike Fry and Tim Miller Room: Great Room 4
	IMPLEMENTING INDUSTRY 4.0: THINK BIG, START SMALL, SCALE FAST - Robert Blache, Callaghan Innovation	AULANA™: NANOGOLD COLOURED WOOL APPAREL AND BESPOKE RUGS FOR LUXURY MARKETS – A JOURNEY THROUGH DISCOVERY, DEVELOPMENT AND COMMERCIALISATION - Jim Johnston, Victoria University of Wellington	CURRENT STATUS AND DEVELOPMENTS IN 3D PRINTING TECHNOLOGIES FOR METAL - Mike Fry, TIDA Ltd
	THE INDUSTRIAL INTERNET OF THINGS FOR SMART FACTORIES - Gerrald Carlo Mateo, National Instruments	IN-LINE THIN FILM DEPOSITION AND FUNCTIONALISATION OF INDUSTRIAL SURFACES - Jerome Leveener, GNS Science	PRINT-ON PIEZORESISTIVE SENSORS FOR SOFT ACTUATOR CONTROL - Tim Giffney, The University of Auckland
	INDUSTRY 4.0 HAS AN IDEA FOR NEW ZEALAND – CHALLENGES, OPPORTUNITIES AND CASE STUDIES - Yuqian Lu, The University of Auckland	FORGET THE PLUG – A MULTI-DISCIPLINARY APPROACH TO WIRELESS CHARGING OF ELECTRIC VEHICLES - Simon Bickerton, Faculty of Engineering, The University of Auckland	ACRYLIC ADDITIVE MANUFACTURING - Sarat Singamneni, Auckland University of Technology
	INDUSTRY 4.0 IN ACTION ON THE SHOP FLOOR – A NEW ZEALAND CASE STUDY - Ivo Gorny, Callaghan Innovation	REZOLUTION™ SUITE OF MINING CHEMICALS FOR SUBTERRANEAN STRATA STABILIZATION & BOLTING - Hayden Nicholson, Polymer Group Ltd.	THE ECONOMICS OF ADDITIVE MANUFACTURING IN 10 MINUTES - Olaf Diegel, The University of Auckland
	APPLICATION OF INDUSTRY 4.0 AND DIGITAL TWINS IN PROCESS INDUSTRY - Jan Polzer, The University of Auckland	NEW SENSOR BASED SOLUTIONS FOR NEXT GENERATION SMART DISTRIBUTION TRANSFORMERS - A CASE STUDY FOR SUCCESSFUL INDUSTRY-UNIVERSITY COLLABORATION - Arvid Hunze, Robinson Research Institute, Victoria University of Wellington	3D PRINTING AND DISTRIBUTED UPCYCLING FOR MORE SUSTAINABLE FUTURES - Simon Fraser, Victoria University of Wellington
	HOW FOURTH INDUSTRIAL REVOLUTION THINKING INCREASES BY AN ORDER OF MAGNITUDE THE OVERALL PRODUCTIVITY OF THE FOREST PRODUCTS INDUSTRY - Tony Johnston, Wood Engineering Technology Ltd.	LADIES SHOES AND DIGITAL TECHNOLOGIES. HELPING TO BRING THE CRAFTSMAN'S TOUCH BACK TO SHOE DESIGN WITH MODERN TECHNIQUES - Craig Shannon, Globex Engineering Ltd.	A DESIGN-SCIENCE COLLABORATION: FREEFORM INTERFACIAL CONNECTIONS - Tim Miller, Victoria University of Wellington
	MANUFACTURER CHALLENGES AND MISCONCEPTIONS AFFECTING INDUSTRY 4.0 ADOPTION IN NEW ZEALAND - Reinaldo Silva, Factice Global	SMART IGNITION DEVELOPMENT PROJECT - Dave Casey, Fisher & Paykel	CONSISTENTLY ACHIEVING FULL STRENGTH METAL 3D PRINTING PRODUCTION PARTS - Warwick Downing, RAM3D
CASE STUDIES IN APPLYING AUGMENTED REALITY TO HIGH VALUE MANUFACTURING PROCESSES - Kevin Marett, LEAP Australia	SYSTEM INTEGRATION FOR A TURN-KEY GAS-SEPARATION TO LIQUID IN A MOBILE SOLUTION - Jonas Meier, Fabrum Solutions Ltd.	POWDER-BED FUSION ADDITIVE MANUFACTURING OF DIFFICULT-TO-WELD ALLOYS - Zhan Chen, Auckland University of Technology	
12:30 PM - 1:30 PM	<b>Lunch Break (Great Room 1) - sponsored by Fisher &amp; Paykel Healthcare</b> <b>Poster and Exhibition Viewing</b>		
1:30 PM - 2:00 PM	<b>Keynote Speaker: Fiona Cresswell (General Manager: Marketing Operations, Fisher &amp; Paykel Healthcare) &amp; Melissa Bornholdt (Product Development Manager: OSA Interface Industrial Design, Fisher &amp; Paykel Healthcare)</b> <b>CARE BY DESIGN</b> Session Chair: Jim Johnston (MaD2019 Co-chair, Victoria University of Wellington) Room: Great Room 4		
2:00 PM - 3:30 PM	<b>CONCURRENT CONFERENCE SESSION 2</b>		
	ROBOTICS AND INDUSTRY 4.0 Session Co-Chairs: Marcel Schaefer and Reza Hamzeh Room: Great Room 2	ADDITIVE MANUFACTURING APPLICATIONS Session Co-Chairs: Jonathan Stringer and Yilei Zhang Room: Great Room 3	SUSTAINABILITY IN MANUFACTURING Session Co-Chairs: Florian Graichen and Oliver McDermott Room: Great Room 4
	THE FUTURE OF MANUFACTURING - INDUSTRY 5.0 - Marcel Schaefer, Auckland University of Technology	REACTIVE INKJET PRINTING: A ROUTE TO MULTIFUNCTIONAL 2D AND 3D PRINTING - Jonathan Stringer, The University of Auckland	TRANSITION TO A CIRCULAR BIOECONOMY – A UNIQUE OPPORTUNITY FOR NEW ZEALAND - SCION CASE STUDIES - Florian Graichen, Scion
	ROBOTS WORKING HARDER, STAFF WORKING SMARTER - Andrew Turner, Nautech Electronics Ltd.	BIOLOGICAL INTER-DEPENDENCIES IN 3D PRINTING: LARVAE SCAFFOLD EXCAVATION OF HIGH FLIGREE CLAY STRUCTURES - Derek Kawiti, Victoria University of Wellington	THINK CIRCULAR TO SPARK INNOVATION AND COLLABORATION - Barbara Nebel, thinkstep
	INNOVATING TOWARDS A VIRTUAL POWER PLANT; DISTRIBUTED, SMART AND AFFORDABLE - Eric Pyle, Solarcity	CUTTING-EDGE DESIGN: MACHINING METAL 3D PRINTED PARTS - Cameron Mearns, Zenith Tecnica	WHAT IS TRULY SUSTAINABLE PRODUCT DESIGN? - Oliver McDermott, Blender Design Ltd.
	A TECHNOLOGY SELECTION FRAMEWORK FOR MANUFACTURING INDUSTRIES IN THE CONTEXT OF INDUSTRY 4.0 - Reza Hamzeh, The University of Auckland	EXPLORATION OF GEOMETRIC AUXETICS: PARAMETRIC COMPUTATION AND ADDITIVE TECHNOLOGY FABRICATION - Brittany Mark, Victoria University of Wellington	DEVELOPMENT OF COMPOSITE-BASED PLAYING SURFACE AS REPLACEMENT OF SLATE FOR COMPETITION POOL TABLES - Shen Hin Lim, University of Waikato
ROBOTICS IN AGRICULTURE – DESIGN AS A CATALYST FOR RESEARCH AND INVESTMENT - Josh Barnett and Mike Duke, University of Waikato	INFLUENCE OF LAYER THICKNESS SELECTION ON MECHANICAL STRENGTH AND LOADING RESPONSE IN 3D PRINTED ABS POLYMER - Junior Nomani, Auckland University of Technology	POWERFUL ANTIMICROBIAL ACTIVITY OF MANUKA HONEY INTO WOOL FIBRE - Sami Aljohani, Victoria University of Wellington	
LEARNING IN TO INDUSTRY 4.0 AT TAIT COMMUNICATIONS - Dean Mischewski, Tait Communications	HIGH SPEED 3D BIOPRINTING OF VASCULAR TUBES - Yilei Zhang, University of Canterbury	HIGH PRESSURE GROUND INJECTION FOR SUBTERRANEAN FREE-FORM STRUCTURES - Tyler Harlen and Derek Kawiti, Victoria University of Wellington	
3:30 PM - 4:00 PM	<b>Afternoon Tea (Great Room 1) - sponsored by University of Waikato</b> <b>Poster and Exhibition Viewing</b>		
4:00 PM - 5:00 PM	<b>CONCURRENT PANEL DISCUSSION SESSION 1</b>		
	TOPIC: Opportunities for Innovation in Digital MaDE Lead Panellist: Olaf Diegel, The University of Auckland Room: Great Room 2	TOPIC: Future-proofing the next MaDE Generation Lead Panellist: Juliet Gerrard, Prime Minister's Chief Science Advisor Room: Great Room 4	
	Panellists to include: Göran Roos, Innovation Performance Pty Ltd Robert Blache, Callaghan Innovation Susan Lake, Core Builders Composites Xun Xu, The University of Auckland	Panellists to include: Dieter Adam, The Manufacturers' Network Jim Johnston, Victoria University of Wellington Mark Taylor, The University of Auckland Melissa Bornholdt, Fisher & Paykel Healthcare Ltd.	
5:00 PM - 5:30 PM	<b>No activity planned</b>		
5:30 PM - 7:00 PM	<b>Student Innovation Showcase (Happy Hour) - sponsored by Callaghan Innovation</b>		
6:00 PM - 7:00 PM	<b>Pre-dinner drinks sponsored by Nautech Electronics Ltd.</b>		
7:00 PM - 10:00 PM	<b>Conference Dinner (Great Room 4) - sponsored by Nautech Electronics Ltd. Dinner Welcome: Heather Deacon (GM: Research and Technical Services Operations, Callaghan Innovation)   Key Dinner Address: Prof. Juliet Gerrard (Prime Minister's Chief Science Advisor)</b>		

Tuesday 21 May 2019			
8:30 AM - 9:00 AM	<b>Registration Opens</b>		
9:00 AM - 9:15 AM	<b>Introduction of Day (Great Room 4)</b> Session Chair: Jim Johnston (MaD2019 Co-chair, Victoria University of Wellington)		
9:15 AM - 9:45 AM	<b>Keynote Speaker: Peter Haythornthwaite (Design Consultant and award winning designer)</b> <b>CREATING AND IMPLEMENTING DESIGNED EXPERIENCES</b> Session Chair: Jim Johnston (MaD2019 Co-chair, Victoria University of Wellington) Room: Great Room 4		
9:45 AM - 10:15 AM	<b>Morning Tea Break (Great Room 1) - sponsored by University of Canterbury</b> <b>Poster and Exhibition Viewing</b>		
10:15 AM - 12:30 PM	<b>CONCURRENT CONFERENCE SESSION 3</b>		
	INNOVATION IN MANUFACTURING AND DESIGN Session Co-Chairs: Troy Dougherty and Mike Duke Room: Great Room 2	CASE STUDIES, EXAMPLES AND APPLICATIONS IN MANUFACTURING AND DESIGN Session Co-Chairs: Iain Hosie and Claude Aguergary Room: Great Room 3	ENTREPRENEURSHIP AND NEW BUSINESS DEVELOPMENT OPPORTUNITIES OR CASE STUDIES Session Co-Chairs: Paul Woodfield and Dermott McMeel Room: Great Room 4
	HOW NEW TECHNOLOGIES ARE SHAPING THE INNOVATION LANDSCAPE IN NEW ZEALAND - Adrian Packer, IMS Projects	NZ'S OPPORTUNITIES IN NANOFIBRE TECHNOLOGY - Iain Hosie, Revolution Fibres Ltd.	SFTI STRATEGY FOR TRANCHE 2 FUNDING - Don Cleland, Massey University
	ADVANCED COMPOSITE ADDITIVES IN NEW ZEALAND - Troy Dougherty, Nuenz Ltd.	THE CORE FUNCTION - REFRAMING YOUR PRODUCT SYSTEM - Tim Allan, Locus Research Ltd.	DIAGRAMS FOR COMMUNICATING STRATEGY IN R&D ORGANISATIONS - Laurence Gulliver, Fisher & Paykel Healthcare Ltd.
	MAXIMISING THE MECHANICAL PERFORMANCE OF FIBRE-POLYMER COMPOSITES VIA A DEVELOPED UNDERSTANDING OF INTERFACIAL ADHESION AND AN ASSOCIATED TEST METHOD - Matilda Hayward, Victoria University of Wellington	DIAL FEEL AND SENSORY DESIGN - Fleurine Barre-Debilly, Fisher & Paykel	SKILLS SHIFT IN MANUFACTURING – A NEW ZEALAND PERSPECTIVE - Dieter Adam, The Manufacturers' Network
	PURGING SPACE JUNK THROUGH ADVANCED MANUFACTURING AND INNOVATIVE DESIGN - Erwin van Drunen, Rocket Lab	THE EFFECT OF VACUUM CONDITIONS ON FEATURE QUALITY AND MACHINING EFFICIENCY FOR ULTRAFAST LASER MICROMACHINING - Claude Aguergary, Faculty of Science, The University of Auckland	EFFECTUATION BEHAVIOUR OF RESEARCHERS: EVIDENCE FROM A NATIONAL SCALE RESEARCH PROGRAMME - Paul Woodfield, Auckland University of Technology
	BIO-INSPIRED DESIGN FOR DIGITAL FABRICATION: 3D PRINTED FUNCTIONALLY GRADED STRUCTURES - Maedeh Amirpourmolla, The University of Auckland	DECORATIVE BLACK COATINGS ON METALLIC SURFACES BY ION BEAM ENGINEERING - Prasanth Gupta, GNS Science	AN EXPEDITION THROUGH THE VALLEY OF DEATH - Greg Storey, Blender Design
	DISCOVERY AND APPLICATION OF THE DICHROIC EFFECT IN CUPROUS OXIDE PARTICLES - Emma Wrigglesworth, Victoria University of Wellington	COOKING VESSEL TEMPERATURE SENSING - Chris Green, Fisher & Paykel	PLATFORM ECONOMIES AND BLOCKCHAIN. EVOLUTION? REVOLUTION? OR DO WE EVEN KNOW WHAT IS GOING ON? - Dermott McMeel, Faculty of Creative Arts and Industries, The University of Auckland
	IDENTIFYING WINNING PRODUCTS – COMMITTING TO THE RIGHT IDEA - Tim Allan, Locus Research Ltd.	RETRO-FITTING FOR DATA ACQUISITION AND ANALYTICS - David Tomzki, The University of Auckland	DISRUPTIVE PROCESS TECHNOLOGY ADOPTION BY SME MANUFACTURERS: INSIGHTS FROM AUSTRIA, AUSTRALIA AND NEW ZEALAND - Kenneth Husted, Faculty of Business and Economics, The University of Auckland
FREE AND OPEN SOURCE SOFTWARE FOR DESIGN AND MANUFACTURING - Jose Egas, University of Canterbury	DESIGN FOR ART'S SAKE! AN ART-CENTRIC DESIGN PHILOSOPHY - Angus McGregor, University of Canterbury	DECISION MAKING PROCESS FOR ADOPTION OF NEW TECHNOLOGY IN MANUFACTURING SMES - Mohammad Torkaneh, The University of Auckland	
THE DOUBLE-EDGED NO. 8 WIRE OF NEW ZEALAND DESIGN - Haydn Jack, Blender Design	OPTIMIZATION OF MULTI-PART PRODUCTION IN ADDITIVE MANUFACTURING FOR REDUCING SUPPORT WASTE - Jingchao Jiang, The University of Auckland	BEYOND 'SOFT SKILLS': ARTS AND HUMANITIES IN TECHNOLOGY-DRIVEN ORGANISATIONS - Stefan Korber, The University of Auckland	
12:30 - 1:30 PM	<b>Lunch Break (Great Room 1) - sponsored by BECKHOFF Automation Ltd.</b> <b>Poster and Exhibition Viewing</b>		
1:30 PM - 2:00 PM	<b>Keynote Speaker: Wendy Kerr (Director, Centre for Innovation and Entrepreneurship, The University of Auckland)</b> <b>ENTREPRENEURSHIP 4.0</b> Session Chair: Mark Battley (MaD2019 Co-chair, The University of Auckland) Room: Great Room 4		
2:00 PM - 3:30 PM	<b>CONCURRENT CONFERENCE SESSION 4</b>		
	3D PRINTING/ADDITIVE MANUFACTURING Session Co-Chairs: Ben Schon and Mike Duke Room: Great Room 2	DESIGN, INNOVATION AND COLLABORATION Session Co-Chairs: Debbie Munro and Paul Ewart Room: Great Room 3	MANUFACTURING AND DESIGN FOR BIO APPLICATIONS Session Co-Chairs: Maziar Ramezani and Lorenzo Garcia Room: Great Room 4
	DEVELOPMENT OF A FIT FOR PURPOSE SYSTEM FOR 3D PRINTING OF FOOD - Ben Schon, Plant and Food Research	APPLICATION OF NUMERICAL OPTIMISATION TECHNIQUES TO COMPLEX ENGINEERING DESIGN PROBLEMS - Mark Battley, Faculty of Engineering, The University of Auckland	BIO-COMPATABILITY OF PROSTHETIC EYES - Keith Pine, NZ Prosthetic Eye Service
	DIGITAL MANUFACTURING FOR IMPROVED BRA FIT - Xuxu Amoozgar-Montero, Victoria University of Wellington	FUNCTIONAL COATINGS – COLLABORATIVE INNOVATION FOR HIGH-TECH MANUFACTURING - Joshua Venter, Cirrus Materials Science Ltd	TRIBOLOGICAL ASSESSMENT OF NANO-SILICA REINFORCED ALGINATE-POLYACRYLAMIDE HYDROGEL COMPOSITE AS ARTIFICIAL CARTILAGE - Maziar Ramezani, Auckland University of Technology
	ASSESSMENT OF BIO-BASED HYDROGEL 3D-PRINTING BY MICRO-EXTRUSION - Mathieu Loste-Berdot, Université Grenoble Alpes	DESIGN A SQUARE PEG, BUILD A ROUND HOLE – DATA COLLABORATION TRAGEDY AND TRIUMPH - Simon Hall, Caliber Design	QUANTITATIVE STRENGTH CONSIDERATIONS FOR THE DESIGN OF DEVICES FOR PEOPLE WITH TETRAPLEGIA IN NEW ZEALAND - George Stilwell, University of Canterbury
	3D PRINTING NICHE NEW ZEALAND PRODUCTS FOR INTERNATIONAL MARKETS – OPPORTUNITIES AND THREATS - Sam Hodder and Mike Duke, University of Waikato	TRANSLATIONAL RESEARCH & ENTREPRENEURSHIP IN BIOMEDICAL ENGINEERING - Deborah Munro, Mechanical Engineering, University of Canterbury	THE COLLABORATIVE APPROACH TO ADDITIVELY MANUFACTURED ARTIFICIAL LIMB PROSTHETICS - Emily Allison, Callaghan Innovation
COMPLEX PARTS FROM METAL/POLYMER FEEDSTOCKS - Frederic Lecarpentier, Callaghan Innovation	TECHNOLOGY ROADMAPPING IN NZ'S STEEL INDUSTRY - Elisabeth Krull, The University of Auckland	ANOTHER FACET OF BIOMECHANICAL DESIGN - Lorenzo Garcia, Auckland University of Technology	
DEVELOPMENT OF A MODULAR ADDITIVE MANUFACTURING TESTING DEVICE FOR BIOFABRICATION RESEARCH - Juan Schutte, Massey University	A COMPARISON OF PROCESSING TECHNIQUES FOR PRODUCING PROTOTYPE INJECTION MOULDING INSERTS - Paul Ewart, Wintec	RESIDENTIAL AIR QUALITY IMPROVEMENT USING UV LIGHTS - Mohammad Al-Rawi, Wintec	
3:30 PM - 4:00 PM	<b>Afternoon Tea (Great Room 1) - sponsored by Callaghan Innovation</b> <b>Poster and Exhibition Viewing</b>		
4:00 PM - 5:00 PM	<b>CONCURRENT PANEL DISCUSSION SESSION 2</b>		
	TOPIC: Diversity in MaDE Lead Panellist: Debbie Munro, University of Canterbury Room: Great Room 2	TOPIC: Collaboration within MaDE Lead Panellist: Brian McMath, NZ Product Accelerator Room: Great Room 4	
	<i>Panellists to include:</i> Craig Shannon, Globex Engineering Ltd.	<i>Panellists to include:</i> Allen Guinibert, Fisher & Paykel	
	Derek Kawiti, School of Design, Victoria University of Wellington	John Kennedy, GNS Science	
	Troy Coyle, HERA	Mark Battley, The University of Auckland	
	Wendy Kerr, Centre for Innovation and Entrepreneurship, The University of Auckland	Troy Dougherty, Nuenz Ltd.	
	Vic Crone, Callaghan Innovation		
5:00 PM - 5:30 PM	<b>Awards and Conference Closing - sponsors: Auckland UniServices Ltd, Callaghan Innovation, MaD2019</b> <b>Session Co-Chairs: Mark Battley (MaD2019 Co-chair, The University of Auckland) &amp; Jim Johnston (MaD2019 Co-chair, Victoria University of Wellington)</b>		
5:30pm	<b>Post-conference Cocktails</b> <b>Sponsored by MaD2019</b>		

## Poster Presentations

INDUSTRY 4.0	IoT AND DATA ANALYTICS FROM BECKHOFF - Steve Rush, BECKHOFF Automation Ltd.
INDUSTRY 4.0	LEAN AND INDUSTRY 4.0: USING MACHINE LEARNING TO REMOVE SUPPLY CHAIN WASTE - Adrian Packer, IMS Projects
INDUSTRY 4.0	OPERATOR 4.0: A HUMAN PERSPECTIVE FOR INDUSTRY 4.0 - Emmanuel Flores, The University of Auckland
INDUSTRY 4.0	THE ARCHITECTURE FOR SMART MANUFACTURING DEVICES DIGITAL TWIN IMPLEMENTATION - Huiyue Huang, The University of Auckland
INDUSTRY 4.0	INTELLIGENT MACHINE WINDOW FOR MACHINE TOOLS - Zexuan Zhu, The University of Auckland
INDUSTRY 4.0	CYBER-PHYSICAL MACHINE TOOL BASED ON STEP-NC - Tsubasa Kubota, The University of Auckland
INNOVATIONS IN MANUFACTURING AND DESIGN	DISH WASH COMPARISON TOOL - Andy Hutcheon, Fisher & Paykel
INNOVATIONS IN MANUFACTURING AND DESIGN	TAILORING THE PROPERTIES OF SOFT MAGNETIC COMPOSITE: EXAMPLE OF INROAD INDUCTIVE POWER TRANSFER - Jerome Leveneur, GNS Science
INNOVATIONS IN MANUFACTURING AND DESIGN	MICROFLUIDIC SYSTEM FOR WATER QUALITY MONITORING - Swapna Jaywant, Massey University
INNOVATIONS IN MANUFACTURING AND DESIGN	LASER BEAM SHAPING FOR OPTIMISED INDUSTRIAL LASER MICRO-MACHINING AND SURFACE PATTERNING - Jeffery Low, The University of Auckland
INNOVATIONS IN MANUFACTURING AND DESIGN	SEMICONDUCTOR PLATFORMS FOR ENHANCED RAMAN SPECTROSCOPES - Rakesh Arul, The University of Auckland
INNOVATIONS IN MANUFACTURING AND DESIGN	AN AR-ENABLED COLLABORATIVE PROTOTYPING SYSTEM - Yuan Lin, The University of Auckland
INNOVATIONS IN MANUFACTURING AND DESIGN	PATIENT HANDLING SYSTEM FOR A NOVEL HEAD-ONLY MRI SCANNER - Christy Wells, Victoria University of Wellington
INNOVATIONS IN MANUFACTURING AND DESIGN	REDUCING RISK IN PRE-PRODUCTION INVESTIGATIONS THROUGH UNDERGRADUATE ENGINEERING PROJECTS - Paul Ewart, Wintec
DESIGN FOR MANUFACTURING	REPRESENTING AND REASONING ABOUT THE QUALITY OF PRELIMINARY DESIGN INFORMATION IN ENGINEERING PRODUCT DEVELOPMENT - Jens Brinkmann, The University of Auckland
DESIGN FOR MANUFACTURING	THERMAL POWER STIRLING - GREEN HEAT ENGINE - Mohammad Al-rawi, Wintec
ADDITIVE MANUFACTURING AND DESIGN, INCL. 3D AND 4D	REPRODUCTION OF A 1928 AIS CYLINDER HEAD - Neil Glasson, Callaghan Innovation
ADDITIVE MANUFACTURING AND DESIGN, INCL. 3D AND 4D	SYNTHESIS OF CONDUCTIVE INK FOR PRINTED SENSORS - Muhammad Asif Ali Rehmani, Massey University
ADDITIVE MANUFACTURING AND DESIGN, INCL. 3D AND 4D	EFFECTS OF MOISTURE DEGRADATION ON POLY LACTIC ACID IN FUSED DEPOSITION MODELLING - Muhammad Harris, Massey University
ADDITIVE MANUFACTURING AND DESIGN, INCL. 3D AND 4D	EXTRUSION SYSTEM FOR 3D PRINTING OF PELLETIZED PLASTICS - Nathan Vockerodt, Massey University
ADDITIVE MANUFACTURING AND DESIGN, INCL. 3D AND 4D	THERMOGRAPHIC EVALUATION OF ADDITIVE MANUFACTURED MATERIALS - Baptiste Lemerrier, University Clermont Auvergne & The University of Waikato
ADDITIVE MANUFACTURING AND DESIGN, INCL. 3D AND 4D	A STUDY OF THE INFLUENCE OF AMBIENT TEMPERATURE AND HUMIDITY ON FABRICATED PARTS BY FUSED DEPOSITION MODELLING (FDM) - Adel Ameer, University of Waikato
ADDITIVE MANUFACTURING AND DESIGN, INCL. 3D AND 4D	FULL FIELD DISPLACEMENT MEASUREMENT FOR 3D PRINTED PARTS USING DIGITAL IMAGE CORRELATION - Khalid Arif, Massey University
MANUFACTURING PROCESSES AND TECHNOLOGIES, INCL. DIGITAL AND VIRTUAL	THERMOMECHANICAL PERFORMANCE OF BOBBIN TOOL DESIGN AS AN INNOVATIVE VARIANT FOR FRICTION STIR WELDING - Abbas Tamadon, University of Canterbury
SUSTAINABILITY IN MANUFACTURING AND DESIGN	MASS PERSONALISATION ENABLED SUSTAINABLE DEVELOPMENT IN THE CONTEXT OF INDUSTRY 4.0 - Shohin Ahleroff, The University of Auckland
PRODUCT DEVELOPMENT - INNOVATING, PRIORITISING AND CONSTANTLY DELIVERING CUSTOMER VALUE ON TIME	RESEARCH FOR DEVELOPMENT - DRIVING BREAKTHROUGH PRODUCTS - Tim Allan, Locus Research Ltd.
ROBOTICS AND AUTOMATION	DESIGN AND IMPLEMENTATION OF A ROBOT-ASSISTED TRIMMING SYSTEM FOR ROTATIONALLY MOULDED PLASTIC - Weihua Chen, Massey University
ROBOTICS AND AUTOMATION	VIBRATION-BASED FAULT DETECTION FOR NON-STATIONARY SIGNALS IN INDUSTRIAL DRIVETRAIN SYSTEMS - Madhurija Dev Choudhury, The University of Auckland
UNIVERSITY, CRI, INDUSTRY R&D COLLABORATIONS	REAL-TIME PREDICTION OF SANITARY SEWER BLOCKAGES AND OVERFLOWS USING RFID SENSOR MODULES - Sundra Tatiparthi, The University of Auckland
ENTREPRENEURSHIP AND NEW BUSINESS DEVELOPMENT OPPORTUNITIES OR CASE STUDIES	MANTA AND CACTACEAE - Mailin Lemke, Victoria University of Wellington