MaDE2020 Programme

		Madezuzu Programme			
Ionday / Dec	ember 2020				
	Registration Open				
0.00 AW - 0.43 AW	governor Opening (Great Room 4)				
9:00 AM - 9:30 AM	MIHI: Geremy Hēma (Kaiārahi UniServices) OPENING: Prof Jim Metson (Deputy Vice Chancellor Research, The University of Auckland)				
	Session Chair: Professor Olaf Diegel (MaDE2020 Co-Chair, The University of Auckland) Keynote Speaker: Catherine Beard (Executive Director: BusinessNZ, Manufacturing NZ, ExportNZ)				
	MaDE in NZ - TURBO CHARGING EFFORTS FOR AN ECONOMIC RECOVERY				
9:30 AM - 10:00 AM	Session Chair: Professor Olaf Diegel (MaDE2020 Co-Chair, The University of Auckland)				
	Room: Great Room 4				
10:00 AM - 10:30 AM	Morning Tea (Great Room 1) - sponsored by AUT				
10:00 AM - 10:30 AM	Poster and Exhibition Viewing (POSTER PRESENTERS TO BE AVAILABLE AT THEIR POSTERS FOR VIEWING	AND JUDGING)			
	CONCURRINT CONFERENCE SESSION 1				
	Entrepreneurial Mindset and Manufacturing	Industry 4.0 - An Overview	Additive Manufacturing - An Overview		
	Session Co-Chairs: Don Cleland and Paul Woodfield Room: Great Room 2	Session Co-Chairs: Yuqian Lu and Rachael Tighe Room: Great Room 3	Session Co-Chairs: Simon Fraser and Juan Schutte Room: Great Room 4		
	DESIGNING RESEARCH FOR IMPACT	IOT WITHOUT INTERNET OR THINGS	DEMOCRATISING MEDICAL DEVICES: 3D PRINTING AND OPEN SOURCE SYSTEMS FOR DESIGN, DEVELOPME		
	- Don Cleland, Massey University and SfTI	- Aryaman Taore, Beckhoff Automation	DISTRIBUTION		
			- Simon Fraser, Victoria University of Wellington		
	RESEARCHER-INDUSTRY PARTNERSHIP TO ENABLE INNOVATIVE PROCESSES: A CASE STUDY	WHAT IS INDUSTRY 4.0? DISPELLING THE COMMON MYTHS AND FEARS	DESIGNING AND 3D PRINTING A 25 KG STAINLESS STEEL BUILDING STRUCTURAL NODE		
	- Pauline Calloch, Callaghan Innovation	- Yuqian Lu, The University of Auckland	- Mike Fry, TiDA		
	MARKET SHAPING FOR DEEP-TECH INNOVATION	APPLICATION OF AUGMENTED REALITY AND INDUSTRIAL INTERNET OF THINGS TECHNOLOGIES TO HIGH VALUE	OPTIMISED 3D PRINTED STRUCTURES: DEVELOPING A SIX-AXIS ROBOTIC SPATIAL PRINTING SYSTEM		
	- Julia Fehrer, Business School, The University of Auckland	MANUFACTURING PROCESSES - Kevin Marett, LEAP Australia	- Hamish Morgan, Victoria University of Wellington		
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10:30 AM -12:30 PM	CAN YOU TEACH ENTREPRENEURSHIP TO UNDERGRADUATE ENGINEERS? - Nick Pickering, University of Waikato	MÃORI GEOMETRY AND INDIGENOUS COMPUTATIONAL DESIGN - A CASE STUDY FOR 3D PRINTED STRUCTURES - Derek Kawiti, Victoria University of Wellington	A HYBRID ADDITIVE MANUFACTURING STRATEGY FOR INJECTION MOULD INSERTS - Simon Chan, The University of Auckland		
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	THE FORM AND FUNCTION OF INTERMEDIARIES IN A SCIENCE AND TECHNOLOGY CONTEXT	A PRACTICAL JOURNEY INTO INDUSTRY 4.0	ADDITIVE MANUFACTURING IN THE AVIATION INDUSTRY		
	- Paul Woodfield, Auckland University of Technology	- Paul Gravatt, Motion Design	- Andrew Hewitt, Air New Zealand		
	RESEARCH AND DEVELOPMENT FUNDING OPPORTUNITIES VIA THE REGIONAL BUSINESS PARTNER NETWORK	TAILORING INSPECTION TO APPLICATION – A DOUBLE EDGED SWORD	UTILISING PARAMETRIC CUSTOMISATION TO TRANSLATE AUXETIC STRUCTURE THEORY INTO ADDITIV MANUFACTURED MULTIMATERIAL PERFORMATIVE GEOMETRIES		
	- David Claridge, ATEED	- Rachael Tighe, University of Waikato	MANUFACTURED MULTIMATERIAL PERFORMATIVE GEOMETRIES - Brittany Mark, Victoria University of Wellington		
	LEADTIME QUOTATION AND PRICING FOR MAKE-TO-ORDER MANUFACTURING SYSTEMS	SELF-SERVICE SILO – CUSTOMER CONVENIENCE 24/7	USING THE RIGHT TOOL FOR THE RIGHT JOB		
	LEADTIME QUOTATION AND PRICING FOR MAKE-TO-ORDER MANUFACTURING SYSTEMS - Tava Olsen, The University of Auckland	SELF-SERVICE SILO – CUSTOMER CONVENIENCE 24/7 - Caleb Millen, Beckhoff Automation NZ, and Nikk King, NZ Controls	USING THE RIGHT TOOL FOR THE RIGHT JOB - Juan Schutte, CDAM Lab, The University of Auckland		
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	DEVELOPING ENGINEERING DESIGN AND MANUFACTURING TALENT THROUGH THE FORMULA:SAE COMPETITION	APPLICATION OF RFID SENSORS IN DETECTION OF ILLICIT CONNECTIONS, SURFACE FLOWRATES, AND SEWER BLOCKAGES	HIGH STRENGTH ALUMINIUM ALLOY LASER POWDER BED FUSION		
	- Lizzy Grant, Department of Mechanical Engineering, The University of Auckland	- Sundra Rami Reddy Tatiparthi, The University of Auckland	- Zhan Chen, Auckland University of Technology		
12:30 PM - 1:30 PM	Lunch (Great Room 1) - sponsored by Fisher & Paykel Healthcare				
	Exhibition Viewing				
	Keynote Speaker: David Chuter (CEO and Managing Director, Innovative Manufacturing Cooperative Res	search Centre, Australia)			
1:30 PM - 2:00PM	ANZ MANUFACTURING - LEADERSHIP IN UNCERTAIN TIMES				
	Session Chair: Professor Jim Johnston (MaDE2020 Co-Chair, Victoria University of Wellington)				
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Poster Present	ations
02. Innovation, design, product	
development and manufacturing in a green, energy efficient	ATV TYRE ROLLING RESISTANCE IN AGRICULTURE - Tim Petterson, University of Canterbury
environment 02. Innovation, design, product development and manufacturing in a green, energy efficient	DEVELOPMENT OF INNOVATIVE CROSS-DISCIPLINARY ENGINEERING SHOWCASE - Jai khanna, Waikato Institute of Technology
environment O2. Innovation, design, product development and manufacturing in a green, energy efficient environment	AUTOMATED BANDSAWN PLYWOOD CLADDING PRIME AND PAINT MACHINE - Mohammad Al-Rawi, CEID/Walkato Institute of Technology
 Innovation, design, product development and manufacturing in a green, energy efficient 	GLASS-REINFORCED EPOXY LAMINIATE ELECTRODES FOR SENSING APPLICATIONS - Kartikay Lal, Massey University
environment 04. Additive Manufacturing – including specialist products and mass customisation	FOSSILS FROM THE FUTURE - Jessica Salter, School of Design, Victoria University of Wellington
 Additive Manufacturing – including specialist products and 	CONTINUOUS, HIGH SPEED RESIN 3D PRINTING BY INTERFACE TEMPERATURE CONTROL - Jason Collingwood, Massey University
mass customisation 04. Additive Manufacturing – including specialist products and mass customisation	IN-SITU LOW POWER LASER RE-MELTING OF DIRECT METAL PRINTED SPECIMENS FOR IMPROVED SURFACE FINISH - Tanisha Pereira, Massey University
 Additive Manufacturing – including specialist products and 	TOPOLOGY OPTIMIZATION AND GENERATIVE DESIGN OF PRODUCTS UTILIZING SELECTIVE LASER MELTING - Daniel Song, The University of Auckland
mass customisation 04. Additive Manufacturing – including specialist products and mass customisation	DESIGN AND TOPOLOGY OPTIMIZATION OF AN AUTONOMOUS DRIVING SHUTTLE BODY FOR ADDITIVE MANUFACTURING - Benedictus Notoprodjo, Massey University
mass customisation 04. Additive Manufacturing – including specialist products and mass customisation	MANUFACTURING HYBRID COMPOSITE PARTS USING 3D PRINTED CONTINUOUS FIBRE REINFORCED POLYMERS - Hamed Abdoli, The University of Auckland
04. Additive Manufacturing – including specialist products and mass customisation 05. Advanced and functional	HIGH PERFORMANCE CONTINUOUS FIBRE COMPOSITE 3D PRINTING: A PROCESS SCIENCE-BASED APPROACH - Joshua Hares, The University of Auckland
materials in product design and manufacturing including additive manufacturing	NOVEL POLYMER MATERIAL FOR WIRELESS IMPLANTABLE SENSORS - Simon Blue, University of Canterbury
05. Advanced and functional materials in product design and manufacturing including additive manufacturing	MICRO-CONTACT PRINTED, SELF-ASSEMBLED PATTERN-BASED ARSENIC DETECTION - Swapna Jaywant, Massey University
05. Advanced and functional materials in product design and manufacturing including additive	INFLUENCES OF AMBIENT TEMPERATURE ON SINTERING OF BIODEGRADABLE POLYLACTIC ACID (PLA) USED IN FUSED DEPOSITION MODELLING (FDM) - Adel Ameer, University of Walkato
manufacturing 05. Advanced and functional materials in product design and manufacturing including additive manufacturing 05. Advanced and functional	CHARACTERISATION OF THE RELATIONSHIP BETWEEN HYDROGEL PROPERTIES AND 3D-PRINTING PARAMETERS - Melissa Ishii, University of Canterbury
materials in product design and manufacturing including additive manufacturing	PROTEIN-BASED BIOMATERIALS FOR 3D & 4D PRINTING - Helana Agnieray, The University of Auckland
Advanced and functional materials in product design and manufacturing including additive manufacturing S. Advanced and functional	ASSESSING THE DESIGN OF BONE INTERFACING ADDITIVE MANUFACTURED TITANIUM MEDICAL DEVICES VIA IMAGING - Kenzie Baer, University of Otago, Christchurch
us. Advanced and functional materials in product design and manufacturing including additive manufacturing upon 5. Advanced and functional	ELECTROSPINNING OF PROTEIN NANOFIBERS - Qun Chen, The University of Auckland
materials in product design and manufacturing including additive	DEVELOPMENT OF A SHEEP KNEE FINITE ELEMENT MODEL TO OPTIMISE THE DESIGN OF ADDITIVE MANUFACTURED IMPLANTS - Josephine Shum, University of Otago, Christchurch
05. Advanced and functional materials in product design and manufacturing including additive manufacturing	ADHESIVELY BONDED METAL-COMPOSITE STRUCTURES FOR AIRCRAFT INTERIOR APPLICATIONS - Shuo Xu, Auckland University of Technology
07. Industry 4.0 and Data Driven Design and Innovation	A SMART MONITORING PLATFORM FOR MACHINERY HEALTH MANAGEMENT IN THE FRAMEWORK OF INDUSTRY 4.0 - Madhuriya Dev Choudhury, The University of Auckland
07. Industry 4.0 and Data Driven Design and Innovation	AUGMENTED REALITY-ENABLED MACHINE MAINTENANCE FOR CYBER-PHYSICAL MACHINE TOOLS - Zexuan Zhu, The University of Auckland
07. Industry 4.0 and Data Driven Design and Innovation	RETROFITTIING STRATEGY OF MANUFACTURING SYSTEMS TO INDUSTRY 4.0 STANDARD - Dylan Luther Malvar, Auckland University of Technology
07. Industry 4.0 and Data Driven Design and Innovation	INNOVATING IN THE AGE OF AI, AN EXPLORATION OF HUMAN-AI COOPERATION IN INTERNATIONAL BUSINESS - Jitao Yan, The University of Auckland
07. Industry 4.0 and Data Driven Design and Innovation	DEVELOPMENT OF AN OPERATION MANAGEMENT SYSTEM (CP-OMS) FOR SMART FACTORIES - Reza Hamzeh, The University of Auckland
07. Industry 4.0 and Data Driven Design and Innovation	COMFlex DESIGNER: PHYSICAL INTERACTION AND IMMERSIVE VISUALISATION WITH VIRTUAL PRODUCTS - Annabelle Ritchie, University of Canterbury
08. Digital tools for manufacturing, automation and control including robotics and automation	RECONDITIONING FESTO MANUFACTURING MACHINES FOR USE WITH ROCKWELL AUTOMATION EQUIPMENT - Praneel Chand, Walkato Institute of Technology
15. Human Capability Development	HUMAN CAPITAL 4.0: COMPETENCES AND SKILLS FOR DISRUPTIVE CHALLENGES - Emmanuel Flores, The University of Auckland
16. Other	MINIMISING CONSTRUCTION AND DEMOLITION WASTE TO ADVOCATE SUSTAINABLE CONSTRUCTION IN RESIDENTIAL BUILDING PROJECTS - Rohit Gade, Auckland University of Technology

Student Innovation Showcase HIGH RESOLUTION CONDUCTIVE PRINTING ON CURVED SURFACES - Muhammad Asif Ali Rehmani, Massey University DEVELOPMENT IN SHEEP/ GOAT MILKING CUPS - Alasdair Campbell, University of Waikato A DATA-BASED DIAGNOSTIC PLATFORM FOR MACHINERY HEALTH MANAGEMENT - Madhurjya Choudhury, The University of Auckland CONTINUOUS, HIGH SPEED RESIN 3D PRINTING BY INTERFACE TEMPERATURE CONTROL - Jason Collingwood, Massey University MAARATECH PLATFORM - Catherine Downes, University of Waikato AUTOMATED VINE PRUNING END EFFECTOR - Scott Harvey, University of Waikato 3D PRINTER WASTE RECOVERY - FILAMENT EXTRUDER - Sam Hewlett, University of Waikato DEVELOPMENT OF AN APPLE FRUITLET THINNING ROBOT - Rahul Jangali, University of Waikato PEDIATRIC LAPAROSCOPIC INSTRUMENT (PROTOTYPE) - Sana Khan Azmi, AUT PORTABLE HAND SANITISER DISPENSER - Izaak Knegt, Massey University 3D PRINTER WASTE RECOVERY - FILAMENT FUSER - Sam Knox, University of Waikato ATMOSPHERIC PLASMA JET PRINTING: CONTROLLED AND TAILORED THIN FILMS - Taniela Lolohea, The University of Auckland RETROFITTING STRATEGY OF MANUFACTURING SYSTEM TO INDUSTRY 4.0 STANDARD - Dylan Luther Malvar, AUT DfAM: A CONCEPTUAL MONITOR ARM FOR AIR NZ - Vincent McQueen, Victoria University of Wellington LOW-COST FABRICATION OF PERIODICALLY STRUCTURED TITANIUM PARTS FROM RECYCLED Ti64 - Thomas Milliken, University of Canterbury OPTIMISED 3D PRINTED STRUCTURES - Hamish Morgan, Victoria University of Wellington AIR-CRAFTED ARTEFACTS - Courtney Naismith, Victoria University of Wellington FROM LINE TO LOOP. A CIRCULAR 3D-PRINTING INITIATIVE FOR UP-CYCLING COMMERCIAL FISHING PLASTIC - Matthew O'Hagan, Victoria University of Wellington IN-SITU MACHINE-LEARNING DIGITAL AND THERMAL CAMERA VISION FOR AN INERTED DIRECT METAL PRINTER - Tanisha Pereira, Massey University MODELLING AND OPTIMISING THE FLOW PROFILE OF A GAS VALVE - John Riley, Fisher & Paykel Appliances COMFlex DESIGNER - Annabelle Ritchie, University of Canterbury FOSSILS FROM THE FUTURE -Jessica Salter, Victoria University of Wellington COST-EFFECTIVE FIBRE REINFORCED POLYMER COMPOSITE-METAL JOINT STRUCTURAL FRAMEWORKS - Ardeshir Saniee, AUT A PORTABLE MULTI-MODAL MICRO-IMAGING SYSTEM FOR AUTOMATED SCANNING

Avesha Shaukat, Massey University

ROCK MELON HARVESTER

- Sheau Lan (Alicia) Sim, University of Waikato

AUTOMATION OF 3D PRINTING

- Nathan Vockerodt, Massey University