

WCMNM 2025 Program (Tentative)

The 8th World Congress on Micro and Nano Manufacturing (WCMNM 2025)
September 15-18, 2025, University of Malta, Valletta Campus, Malta

Monday, September 15, 2025				
Time	Duration	Activities		
18:00 - 20:00	2 h	Welcome Reception and Registration (Valletta Campus -- Location TBD)		
Tuesday, September 16, 2025				
Time	Duration	Activities		
08:00 - 09:00	1 h	Registration		
09:00 - 09:30	30 m	Welcome and Remarks (Aula Magna - Level 1)		
0930: - 10:30	1 h	Plenary Session 01 (Aula Magna - 1st Floor) Title: Extra Terrestrial Manufacturing: Exploring Micro- and Nano- manufacturing in Outer Space Speaker: Professor Sathyan Subbiah Session Chair: Dr Pierre Vella		
Room		Aula Magna	Meeting Room 103	Meeting Room 102
10:30 - 11:30	60 m	Session 1: Additive Manufacturing & 3D Printing (Session Chair: TBD)	Session 2: Process Design & Manufacturing Systems (Session Chair:TBD)	Session 3: Sensors & Actuation (Session Chair: TBD)
	20 m	10 Numerical Study on Jet Formation of In-Gel Near-Field Electrospinning (Sadeghi & Guo)	24 Femtosecond Laser-Driven Hybrid Manufacturing for High-Efficiency, Single-Use SERS Substrates (Gaddam et al.)	7 Proposal for Flow Visualization Micro Device Processing (Ayoob et al.)
	20 m	35 Micro-component manufacturing via Vat Photopolymerization Processes (VPP) (Rebaioli et al.)	12 Mechanical Synthesis of Graphene by Impact Induced Shearing of Graphite (Subbiah & Nabhan)	20 Theoretical Modeling of Capacitive Micromachined Transducer-based Gas Sensors (Harchegani & Valentincic)
	20 m	28 Microfabrication of Rapid Micro-Moulds Combining Additive Manufacturing and custom UV-LED photolithography tool (Gulcur et al.)	15 Towards Reducing Implant Pitch in Laser Implantation Texturing (LITex) (Römer et al.)	5 High Precision Positioning Technology Using Fiber Optic Fabry-Pérot Interferometer in Micro and Nano Manufacturing (Zhou et al.)
11:30 - 1200	30 m	Coffee Break		
1200 - 13:00	60 m	Session 4: Micro-Machining & Fabrication (Session Chair: TBD)	Session 5: Laser Processing 1 (Session Chair: TBD)	Session 6: Composite Materials (Session Chair:TBD)
	20 m	46 Approach for estimation of instantaneous shear angle in micro-machining of ductile materials with varying uncut chip thickness (Pradhan & Ahmed)	21 Femtosecond Laser-Induced Graphene on 3D Printed Polymer with enhanced conductivity via laser annealing (Shiby et al.)	
	20 m		48 Experimental Analysis of Submerged Water-Assisted Laser Micromachining for High-Precision Microchannels (Rana et al.)	49 A Comparative Study of Cooling and Lubrication Strategies for Sustainable Micromachining of CFRP (Shaik & Mittal)
	20 m		47 Quasi-Continuous Wave Fiber Laser Welding of Steel-Copper-Steel Clads to nickel-plated copper busbar for Li-ion battery packs (Gorai & Singh)	59 Performance Assessment of Advanced Wire Electrodes in Drilling Multidirectional CFRP Laminates Using Wire EDM (Abdallah)
1300 - 14:15	1 h 15m	Lunch (Confirm location with Lucienne)		
14:15 - 15:15	60 m	Session 7: Micro and Nano Fluidics (Session Chair: TBD)	Session 8: Equipment Development & Tooling (Session Chair: TBD)	
	20 m	6 Ultralow Water Adhesion Surface by Laser Texturing and Vacuum Storage (Radhakrishnan et al.)	29 An Analytical Model for the Prediction of Chip Evacuation Force in Micro-Drilling (Lee & Kapoor)	
	20 m	13 Fabrication and Performance Evaluation of Micro Precision Structured Surfaces to Control Wettability and Droplet Shape (Kakuta)	39 Effect of Punch with Nanometer Periodic Structure on Crack Formation in Piercing of Amorphous Electric Steel Sheets (Shiratori et al.)	
	20 m	57 From Microstructure to Performance: Freeze-Cast Alumina for High-Temperature Gas Permeability (Ozdoganlar)	40 Investigation on relative tool sharpness in ultrasonic vibration assisted diamond turning of ductile materials (Padmanabhan & Ahmed)	
15:15 - 15:45	30 m	Coffee Break		

15:45 - 17:00	75 m	Round Table Discussion 01 (Aula Magna - 1st Floor) Title: INSERT TITLE Panelists: xxxxx
17:00 - 17:30	30 m	I2M2/IFMM/4M Executive Committee Meetings (Invitation Only, Location TBD)
17:30 - 18:30	1 h	Joint Executive Committee Meeting (Invitation Only, Location TBD)

Wednesday, September 17, 2025			
Time	Duration	Activities	
09:00 - 09:15	15 m	Welcome and Activity Announcements (Aula Magna- 1st Floor)	
09:15 - 10:15	1 h	Plenary Session 02 (Aula Magna - 1st Floor) Title: High-resolution Printing for On-demand Fabrication of Hybrid Electronic Systems Speaker: Professor Professor Kira Barton Session Chair: Professor Sylvie Castagne	
Room		Aula Magna	Meeting Room 103
10:15 - 11:15	60 m	Session 9: Direct Energy Deposition (Session Chair: TBD)	Session 10: On-Machine Metrology & Monitoring (Session Chair: TBD)
	20 m	34 Development and Modeling of a wire straightening mechanism for coaxial wire laser-directed energy deposition (Oraon et al.)	11 On-Machine Optical System for Accurate Workpiece Hole Centering in Micro Drilling (Pizzi & Annoni)
	20 m	54 A Simplified Model for Deposit Efficiency in DED Additive Manufacturing (Lin et al.)	17 Development of an Acoustic Emission Inspection Using Wavelet Scattering Method for Investigating the Shearing Process in Microforming (Kiswanto et al.)
	20 m	43 Enhancing Titanium Microhardness through NiTi and TiNiCu Coatings Developed Via Laser Directed Energy Deposition: A Comparative Study	65 In-line monitoring of processing disturbances in direct laser interference patterning (Gaddam)
11:15 - 11:45	30 m	Coffee Break	
11:45 - 12:45	60 m	Session 11: Predictive Modelling & AI (Session Chair: TBD)	Session 12: Hybrid & Multiscale Manufacturing (Session Chair: TBD)
	20 m	19 Investigation of Wire-EDM of Cryo-Treated Hastelloy C276: Experimental and numerical simulation (Maity & Padasethi)	51 Fabrication of Polymer-Based Cross Angle Optical Diffuser Films for LED Lights through Induction-aided Hot Embossing using Micro-patterned Mold Fabricated by Laser Micromachining (Deshmukh et al.)
	20 m	26 Intelligent Fault Diagnosis in Grinding: A Recurrence Plot and VGG16 Approach for Vibration Signals (Chung & Tseng)	8 Relationship Between Deformation of Microstructure and Force Behavior in Micro-extrusion of Pure Copper (Sugiyama et al.)
	20 m	58 Classification of Surface Texture for Laser Processing by Using Unsupervised Machine Learning (Wang et al.)	41 A Preliminary Study exploring Dielectric Fluid Dynamics within the Inter-Electrode Gap in Micro-Electro-Discharge Milling (Bigdeli et al.)
12:45 - 14:00	1 h 15 m	Lunch (Confirm location with Lucienne)	
14:00 - 15:00	60 m	Session 13: Tribology & Tactile Surfaces (Session Chair: TBD)	Session 14: Laser Processing 2 (Session Chair: TBD)
	20 m	61 Experimental Investigation of High-Speed Robotic Micromachining of Ti6Al4V (Kumar)	55 Effect of Weld Spacing on Shear Strength and Intermetallic Compound Formation in Laser-Welded Al–Stainless Steel Joints (Chen et al.)
	20 m	60 Acoustic Emission Analysis for Process Control in Laser-Induced Forward Transfer (Dilmy et al.)	50 Interfacial Chemistry and Mechanical Strength of Glass–Aluminum Joints Welded with Nanosecond Fiber Laser (Madapana et al.)
	20 m	2 Regularity Controlled Metallic Unit-Cell Alignment for Heat Radiation Devices (Aizawa et al.)	63 Laser Drilling Large High-Density Arrays of Micro-Holes on Foils (Turkus et al.)
15:00 - 15:30	30 m	Coffee Break	
15:30 - 16:45	75 m	Round Table Discussion 02 (Aula Magna - 1st Floor) Title: INSERT TITLE Panelists: xxxxx	
16:45- 18:45	2 h	Valletta Tour & Travelling to Congress Dinner Venue	
18:45 - 21:15	2 h 30 m	Congress Dinner (Radisson Blu)	

Thursday, September 18, 2025				
Time	Duration	Activities		
09:30 - 09:45	15 m	Closing Remarks & Remaining Activities Announcements (Aula Magna - 1st Floor)		
09:45 - 10:45	1 h	Plenary Session 03 (Aula Magna - 1st Floor)		
		Title: Novel Miniaturisation Technologies in Additive Manufacturing		
		Speaker: Professor Arif Rochman		
10:45 - 11:15	30 m	Session Chair: Professor Tohru Sasaki		
		Coffee Break		
Room		Aula Magna	Meeting Room 103	Meeting Room 102
11:15 - 12:15	60 m	Session 15: Surface Enhancement and Analysis (Session Chair: TBD)	Session 16: High-Throughput MNM (Session Chair: TBD)	
	20 m	52 Tribological Study of Bamboo's Surfaces for Tactility Enhancement (Mahayotsanun & Nunthavarawong)	16 Optimization of micro injection molding of thermoplastic elastomers for producing durable functionalized surfaces (Baruffa et al.)	
	20 m	62 Cost-effective laser texturing of electrodes for improved lithiumion battery performance	31 Production-oriented analysis of electrochemical deposition of high entropy alloys from aqueous electrolyte targeted towards modular mould applications (Saxena et al.)	
	20 m		4 Thick Monolithic Nitrogen Doped Silicon Carbide Dies for Galling-Free Mold Stamping of Glass Preforms (Aizawa et al.)	
	60 m	Session 17: Surface Texturing & Smart Surfaces (Session Chair: TBD)	Session 18: Life-Sciences & Biomedical (Session Chair: TBD)	
	20 m	38 Superhydrophilic–Superhydrophobic Patterns via Mask-Free Atmospheric Pressure DBD Plasma Jet Treatment (Bayki & Mujumdar)	56 Freeze Micromilling of Human Cartilage Implants for Reconstructive Surgery (Ozdoğanlar)	
	20 m	36 Hydrogenated diamond-like carbon (H-DLC) thin film development for space mechanisms with enhanced tribological performance (Delgado)	27 Novel Technology for Spin Casting of Elastic PDMS Membranes Integrated with Microfluidic Systems (Golden et al.)	
	20 m	42 Investigation of Surface Property Enhancement of Tool Materials via Micro-Shot Peening (Hsu)	3 Enhanced Cell Activity on Micro/Nano Texture Fabricated by Selective Laser Melting and Chemical Surface Treatment (Yamaguchi et al.)	
12:15 - 13:30	1 h 15 m	Lunch and Best Presentation Awards (Confirm location with Lucienne)		
13:30- 16:15	1 h 45 m	Optional Tour (Birgu)		