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XI Manufacturing
Engineering Society
International Conference

**18th - 20th BILBAO
JUNE 2025 SPAIN**

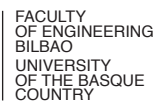


PRELIMINARY PROGRAMME

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WELCOME LETTER



Dear colleagues,

We are pleased to announce the 11th edition of the **Manufacturing Engineering Society International Conference (MESIC'25)**, which will take place from the 18th to the 20th of June 2025 at Bilbao (Spain). As leaders in the field of manufacturing processes, we invite you to send us your latest research results for presentation at our congress. As conference organizers and hosts, we cordially invite you to send us your latest research results for presentation at our conference.

The MESIC is intended to be an event that gathers together the best research work of professionals, researchers and academia. In addition, it is also aimed to be a meeting forum in which people from the area of Manufacturing Engineering can share knowledge and experiences.

Created with the sponsorship of the Manufacturing Engineering Society – Sociedad de Ingeniería de Fabricación (MES-SIF), MESIC has been held every two years since its first edition in 2005.

The High Performance Manufacturing group of the University of the Basque Country (UPV/EHU) has the honour and responsibility of organizing MESIC 2025 in the Bizkaia Aretoa building. With the support of the Faculty of Engineering of Bilbao (EIB) and the Spanish Manufacturing Engineering Society (SIF), this 11th edition pretends to maintain the top level of the previous editions. To this end, this edition will include a rigorous technical program and keynote lectures. Finally, we would like to emphasize the attractiveness of Bilbao as a host city with its industrial heritage and its conversion into a modern city.

On behalf of the Organizing and Scientific Committees, we are very pleased to welcome academics, scientific and professionals to submit contributions and to actively participate in the MESIC'25.

We are looking forward to seeing you soon.

Kind regards,



Luis Norberto López de Lacalle (Berti)



José Antonio Sánchez (Josean)

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PLENARY SESSIONS

Room: BAROJA

TIME

SPEAKER

Wednesday 18th.
at 10:00



Dr. Prof. Dragos Axinte

ADVANCED GRINDING TOOLS:
A WAY TO LIMIT PROCESS STOCHASTICITY

Chair: Jokin Muñoa

Thursday 19th.
at 11:00



M. Sc. Cory Jamieson

MOVING ADVANCED MANUFACTURING
FROM R&D TO APPLICATION

Chair: Aitzol Lamikiz Mentxaka

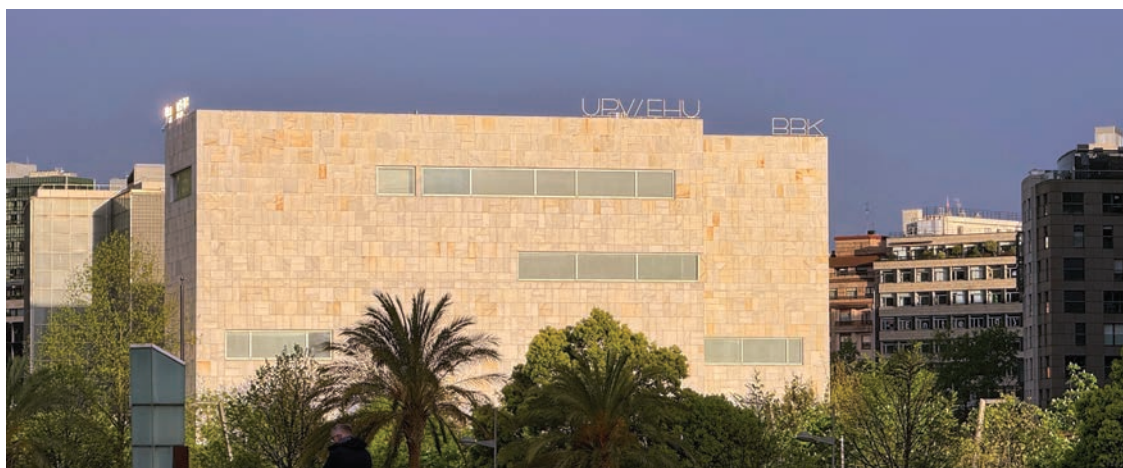
Friday 20th.
at 10:30



Dr. Prof. Ivan Iordanoff

DIGITAL TWINS FOR THE ENVIRONMENTAL CONTROL
AND OPTIMIZATION OF MANUFACTURING PROCESSES

Chair: José Antonio Sánchez Galíndez



PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Wednesday, June 18

Session AMRP-1. Additive Manufacturing and Rapid Prototyping

Room: **BAROJA**

Chair: Joaquín Barreiro

Time	Authors	Title
11:30-11:45	C. Cobos, A. Vallejo, S. Jiménez, S. Ferrándiz, W. Calle	Implementation of reverse engineering and topological optimisation of 3D printed automotive part models.
11:45-12:00	B. Mason, A. Kundu, M. Ryan, R. Setchi, D. Bhaduri	A robust methodology for surface roughness characterisation of additively manufactured surfaces
12:00-12:15	J.I. Arrizubieta, A. Urresti, J. Hernandez, A. Lamikiz, J. Santamaría	Performance evaluation of railway wheels repaired through laser Directed Energy Deposition (DED-LB)
12:15-12:30	G. Domínguez-Domínguez, X. Justo, L.M. Matey	Integration of manufacturing constraints in topological optimization algorithms for long fiber reinforced plastic components
12:30-12:45	O. Murua, J.I. Arrizubieta, V. De Prado, N. Rodriguez, J. Orcajo, A. Lamikiz	A DED-LB solution for hot and cold tooling repairs
12:45-13:00	E. Casanova-Batlle, P. Escutia, A. Bosch, A. J. Guerra, J. Ciurana	3D printing of polyvinyl alcohol for meniscus implant fabrication

Session AIMP-1. Advances and Innovations in Manufacturing Processes

Room: **ARRIAGA**

Chair: Pedro José Arrazola

Time	Authors	Title
11:30-11:45	I. Urresti Espilla, M. Telleria, I. Llanos, L.N. López de Lacalle	Thrust-force based push-out delamination monitoring during CFRP drilling
11:45-12:00	L. Galdos, J. Agirre, U. Ziarsolo, M. Atxega	High speed characterization of 42CrMo4 material for cold forging simulation. Analysis of the influence of various hardening laws on numerical results
12:00-12:15	S. Ferrándiz Bou, J.L. Gámez Martínez, V. Jover Peris	Application of digital twins in the Metaverse, for training in plastic injection.
12:15-12:30	M. García, M. Gil-Inchaurza, J. Álvarez, I. Pombo, D. Barrenetxea	Investigation of the effects of speed ratio and transversal overlapping ratio on actual dressing depth of cut of corundum wheels and subsequent influence on lead pattern
12:30-12:45	S. Caneda, I. Ayesta, J. Wang, O. Flaño, E. Perez, J. M. Ramos	Dimensional accuracy prediction for high-height parts based on WEDM process data
12:45-13:00	A. Pena-Sevillano, O. Ibarra, I. Mancisidor, R. Barcena, J. Munoa	Low-frequency chatter suppression using a linear motor as active inertial damper

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Wednesday, June 18

Session MEMQM-1. Manufacturing Engineering, Metrology and Quality in Manufacturing

Room: **OTEIZA**

Chair: Juan José Aguilar

Time	Authors	Title
11:30-11:45	R. Orduna, D. Gallardo, L.C Díaz, J.A. Albaje, J.A. Yagüe	Analysis of the post-processing influence in X-ray computed tomography porosity measurements
11:45-12:00	I. Fonfría, N. Ortega, I. Holgado, S. Plaza	Compressive behavior analysis of hollow strut lattice structures via 4D X-ray computed tomography
12:00-12:15	A. Martín, M. Penalva, M. Schäfer, Y. Duplessis, P. de Luca, R. Méndez, A. Fernández, G. Kizilis, Z. Arkouli	Automated design and optimization of glue application
12:15-12:30	E. Martín, J. Pérez, L. Godino, I. Pombo, B. Izquierdo, J.A. Sánchez	On the performance of different abrasives in the superfinishing grinding of M2 powder metallurgy steel using rubber-bonded elastic wheels
12:30-12:45	E. Gallero, J. Outón, J.M. Vázquez-Martínez, J. Ledesma, L.C. Gontard, J. Salguero	Comparative study of focus-variation optical microscopy and SEM stereoscopic reconstruction for characterizing ablation phenomena in laser surface texturing of WC-Co material
12:45-13:00	L. Godino, A. Muñoz, J.A. Sanchez, D. Barrenetxea, U. Alonso	In-machine monitoring of vitrified grinding wheel surface

Session AMRP-2. Additive Manufacturing and Rapid Prototyping

Room: **BAROJA**

Chair: Moisés Batista

Time	Authors	Title
14:30-14:45	F. Cordovilla, P. Álvarez, M.A. Montealegre, M. Díaz, S. Chacón Fernández, A. García Beltrán, I. Angulo, J.L. Ocaña	Calculation of levels of laser power for the consecutive tracks in the DED process through a numerical finite elements model
14:45-15:00	A. Urresti, J.I. Arrizubieta, A. Lamikiz	Analysis of powder flow dynamics using high-speed imaging in DED-LB processes
15:00-15:15	J. Gluns, J. Harbig, L. Boie, H. Merschroth	Surface modification in laser powder bed fusion (PBF-LB/M) by locally adapted scanning strategies for controllable surface topography
15:15-15:30	M. Martínez, A. Calleja, G. Gómez, H. González, J. Schreuer, L.N. López de Lacalle	Analysis of the thermal expansion behaviour of lattice-structured Invar 36 PBF-LB samples
15:30-15:45	D. Tenorio, J.M. Vázquez-Martínez, I. del Sol, J. Salguero, M. Batista	Tribological analysis of fused filament fabrication PETG parts coated with nylon
15:45-16:00	D. Lesyk, B. Mordyuk, I. Charit, K. Raja, V. Dzhemelinskyi, A. Tyshchenko, O. Pedash, A. Kotko, A. Lamikiz	Enhancing performance of laser PBF Inconel 718 alloy by structural-phase rearrangement and surface nanocrystallization using thermo-mechanical post-treatment

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Wednesday, June 18

Session AIMP-2. Advances and Innovations in Manufacturing Processes

Room: **ARRIAGA**

Chair: Joaquim de Ciurana

Time	Authors	Title
14:30-14:45	M. Martínez, A. Calleja, G. Gómez, S. Mishra, H. Gonzalez, L.N. López de Lacalle	Behavior during machining of lightweight components manufactured by PBF-LB
14:45-15:00	J. García-Fernández, J.M. Vázquez-Martínez, M. Batista, G. Rodríguez-García, J. M. Cantillo, J. Salguero	Effects of power and frequency on fs-laser grooving for texturing hard metal
15:00-15:15	A. Bosch, S. Montero-Coedo, G. Portas, J. Ciurana, A.J. Guerra	Powder-doped photosensible resins with magnesium and barite to improve performance of stents manufactured via vat-polymerization
15:15-15:30	A. Simoncelli, L. Buglioni, A.J. Sánchez Egea2, D. Martinez Krahmer	Springback in ferritic stainless steel formed by spif: a study on machine compliance
15:30-15:45	B. Izquierdo, U. Alonso, E. Irazu, G. Unamunzaga, I. Pombo	Influence of fiber type on abrasive machining of Cf/SiC ceramic matrix composite
15:45-16:00	I. Alonso, A. Picón, M. Linares de la Puerta, J.A. Gutiérrez	DeepFurnace: Optimisation of aluminium reverberatory furnaces using artificial intelligence and deep learning

Session MEMQM-2. Manufacturing Engineering, Metrology and Quality in Manufacturing

Room: **OTEIZA**

Chair: Irene Buj

Time	Authors	Title
14:30-14:45	J. D. Chaux, P. Aristimuño Osoro, M. Etxanojauregi, I. Orbegozo, P. J. Arrazola	Long-term performance analysis of PCD tools in the milling of aluminium alloy components in a manufacturing context
14:45-15:00	M. Gil-Inchaurza, X. Beudaert, J. Munoa, J.A. Sanchez, M. Garcia, Z. Dombovari	Influence of dual-frequency tool vibration amplitudes on surface helix patterns in turning
15:00-15:15	G. González, N. Ortega, S. Plaza, I. Holgado	Laser-scanner measurement quality enhancement through a predicted fraction of reflected point intensity
15:15-15:30	I. Prieto, I. Herrera, A.M. Lingua, P. Puerto, I. Leizea	Exploring Markerless Close-Range Photogrammetry for Industrial Inspection Applications: A Feasibility Study
15:30-15:45	L. Zylka, M. Plodzien, K. Mazur, M. Pytel, L.N. López de Lacalle	Analysis of the surface geometric structure after abrasive water jet cutting of a X39Cr13 alloy
15:45-16:00	A. Siah Sarani, M. Paknejad, B. Azarhoushnag	Deburring of micro-milled hardened steel: effects of milling strategies and post-polishing

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Wednesday, June 18		
Session AMRP-3. Additive Manufacturing and Rapid Prototyping		
Room: BAROJA		Chair: David Blanco
Time	Authors	Title
16:30-16:45	E. Aldalur, A. Suarez, B. El Moussaoui, F. Veiga, J.C. García	Low carbon steel and stainless steel multi-material components manufacturing using Wire Arc Additive Manufacturing
16:45-17:00	B. El Moussaoui, E. Aldalur, A. Suárez	Design for Additive Manufacturing (DfAM) by finite element simulations
17:00-17:15	L. Robles-Lorite, A. García-Collado, E. Torres-Jiménez, R. Dorado-Vicente	Self-supporting capabilities of additive manufactured structural members
17:15-17:30	D. Lesyk, S. Martinez, A. Lamikiz	Optimization of downskin and overhang parameters for Inconel 718 structures manufactured by Laser Powder Bed Fusion
17:30-17:45	M. Ortiz, P. Ramiro, A. Alberd	A comparative analysis of high speed and conventional laser-based directed energy deposition techniques focused on coating applications for high value-added components
17:45-18:00	E. Villabona, X. Sandua, F. Veiga, A. Suárez, E. Aldalur, P. Rivero	Corrosion analysis of plasma arc welded 316L stainless steel in wire arc additive manufacturing

Session SGM-1. Sustainable and Green Manufacturing		
Room: ARRIAGA		Chair: José Luis Cantero
Time	Authors	Title
16:30-16:45	I. Del Sol, M. Herrera, S. Pazos-Nuñez, J.M. Vázquez-Martínez, M. Batista	Insights from chip formation in machining of DMLS manufactured vs. wrought stainless steel AISI 316L
16:45-17:00	M. Sajjad, J. Agirre, G. Plata, J. Lozares, B. Erice, C. Stalter, J. Mendiguren	Thermal closed die extrusion (T-C-X): a sustainable alternative to hot forging for CO2 emission reduction
17:00-17:15	L.M. López L, C.M. Cobos M, J.D. Méndez G, D.S. Yungán, J.P. Carchi	Design of a temperate bee apiary for the austro region of ecuador
17:15-17:30	H. González, A. González, A. Rodríguez, A. Fernández, I. Ayesta, O. Pereira	Sustainable manufacturing: a new way to extend the oil emulsion useful life through microbial control
17:30-17:45	M. Miranda, J. Gomez-Caturla, T. Boronat, N. Montañes, R. Balart	Synthesis of poly(lactic) acid by reactive extrusion (REX) of L-lactide
17:45-18:00	C. Pérez-Salinas, A. del Olmo, L. N. López de Lacalle, D. Núñez, L. Mayorga, M. Ureña	Alternatives cooling approaches for broaching: near minimum resources process

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Thursday, June 19

Session AMRP-4. Additive Manufacturing and Rapid Prototyping

Room: **BAROJA**

Chair: Ana María Camacho

Time	Authors	Title
9:00-9:15	M. Azpeleta, P. Álvarez, I. Ortiz, S. Ayala Roca, I. Onandia, D. Montoya Zapata	Influence of particle size and powder morphology on the process efficiency of laser cladding of 316L stainless steel
9:15-9:30	N. Tarrés, I. Ferrer, M.L. Garcia-Romeu	Effect of printing parameters on PLA-TPU adhesion in FDM
9:30-9:45	P. Ramiro, M. Penalva, A. Suárez, P. Bengoa, B. Goenaga, C. Gkournelos, F. Veiga	Parameters optimization of short carbon fiber-reinforced polyamide 6 printed using Big Area Additive Manufacturing (BAAM)
9:45-10:00	C. Lazaro-Hdez, J. Ivorra-Martinez, T. Boronat, O. Fenollar, L. Quiles-Carrillo	Manufacturing of biobased multimaterial samples by means of fused deposition modeling
10:00-10:15	A. Fernández, P. Zapico, D. Blanco, F. Peña, P. Fernández	Surface quality comparison in MEX/P manufactured parts across different machines and process parameters
10:15-10:30	I. Buj-Corral, J. Cabrera-Vilalta, H. Sanz-Fraile, A. Elmesbahi, J. Elmesbahi, A. Fatima Zahra, C. Srtati, J.A. Padilla, E. Xuriguera	Study of the dielectric behavior of 3D printed zirconia parts

Session SGM-2. Sustainable and Green Manufacturing

Room: **ARRIAGA**

Chair: TBD

Time	Authors	Title
9:00-9:15	P. Ramos Herrero, H.A. González Rojas, A.J. Sánchez Egea, R.R. Ramos Lara	Electropulse generator for simultaneous annealing and wire drawing
9:15-9:30	P. Ramiro, M. Penalva, A. Gil Del Val, A. Suárez, T. Artaza	Comparative study of molds manufactured via BAAM using virgin and recycled technical polymeric material
9:30-9:45	M.A. Renderos Cartagena, E. Iriondo Plaza, M. Touzet-Cortina, F.A. Girot Mata	Weldability window for AA6082-T6 / HC420LA stacks joined by MPW
9:45-10:00	O. Muñoz Navascués, J.C. Sanchez Catalán, J. Royo, M. Pilar Lamban Castillo	Improving the use of renewable energy in manufacturing: the role of oee for effective performance monitoring
10:00-10:15	C. Rodríguez-Macua, I. Ruiz-Salmón, M. Amador-Cervera, A. Amat-Bernabéu, B. Mateu-Romero	Increasing footwear durability to reduce environmental impact through the addition of graphene in shoe soles
10:15-10:30	A. Kumar Bambam, K. Kumar Gajrani	Enhancement of thermo-physical properties of canola oil using ionic liquid based additives for machining

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Thursday, June 19

Session DM&CPT-1. Digital Manufacturing and CAX-PLM technologies

Room: **OTEIZA**

Chair: Joaquim Minguella

Time	Authors	Title
9:00-9:15	L. Insausti, A. Barlo, M. Sigvant, J. Pilthammar, E. Saenz de Argandoña, B. Erice, J. Mendiguren	Incorporating stamping tool temperature effects into early process design: lessons from an industrial case study
9:15-9:30	I. Garcia, I. Ortega, G. Duro, G. Urchegui, J. Alvarado-Domínguez, M. Puerto-Coy	Challenges in AAS product standardization for batches
9:30-9:45	G. Aznar Lapuente, P. Morella Avinzano, J. del Agua, D. Borro, A. González, R. García García, M. Pilar Lamban	Simplified five-dimensional modelling for the conceptualization of digital twins: a case study of battery decommissioning process
9:45-10:00	M. Sanz-Calle, A. Iglesias, R. Polvorosa, D. Plakhotnik, L.N. López de Lacalle, Z. Dombovari, J. Munoa	Modelling and optimization of integral blade rotor 5-axis milling processes
10:00-10:15	A. Abio, N. Nieves, F. Bonada	Artificial intelligence based optimal process control in hot stamping
10:15-10:30	Y. Zekalmi, J.A. Albajez, M.J. Oliveros, S. Aguado	Efficient topography simulation for freeform surfaces in 5-axis CNC milling

Session AMRP-5. Additive Manufacturing and Rapid Prototyping

Room: **BAROJA**

Chair: Santiago Ferrándiz

Time	Authors	Title
12:00-12:15	C. Izquierdo, S. Maamri, J. Bautista, E. Hernández, L. Aguado, R. Guzmán de Villoria	Manufacturing discontinuous structures of carbon fiber-reinforced thermoplastic polymers
12:15-12:30	D. Bhaduri, K. A. Baramate, S. Gangopadhyay, S. Singh, F. Lacan, M. Ryan	Circular manufacturing of sustainable metal additive manufacturing powders from machining chips
12:30-12:45	T. Shah, J. Ciurana, T. Özel	Deep learning for defect classification in fused filament fabrication
12:45-13:00	A. Ramasubramanian, S. Ding, F. Derya Ince, J. Ciurana, T. Özel	Deep learning for meltpool classification in laser powder bed fusion

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Thursday, June 19		
Session AIMP-3. Advances and Innovations in Manufacturing Processes		
Room: ARRIAGA		Chair: Anabel Fernández
Time	Authors	Title
12:00-12:15	Á. Sáinz de la Maza, L. Sastoque, F.J. Amigo, N. Villarrazo, B. Iñigo, L.N. López de Lacalle	Measuring thermally induced volumetric error of large scale machining centre
12:15-12:30	M. Elena Hernández, S. Maamri, J. Bautista, L. Aguado, P. Moreno, R. Guzmán de Villoria	Ultrasonic consolidation of thermoplastic composites
12:30-12:45	O. Ramírez, D. Olvera, G. Urbikain, Rita Q. Fuentes-Aguilar, A. Elías-Zúñiga, O. Martinez	Improving the design of multivariable milling tools combining machine learning techniques
12:45-13:00	R. Bertolini, A. Bottin, S. Bruschi, H. Gonzalez. E. Ukar	Promoting Chip Breakage in Biomedical-Grade PEEK Machining through Tool Texturing and Cryogenic Cooling
Session MES-1. Manufacturing Engineering in Society		
Room: OTEIZA		Chair: Lorenzo Sevilla
Time	Authors	Title
12:00-12:15	J. Minguella-Canela, M. Peña, O. Boix Aragonès	Experiences on digital and additive manufacturing frameworks for engineering teaching and STEM vocations impulse
12:15-12:30	J.L. Fuentes-Bargues, A. Sánchez-Lite, A. Romero-Barriuso, B.M. Villena-Escribano, C. González-Gaya	Occupational accidents in the manufacture of metal products for construction: descriptive analysis of its main variables
12:30-12:45	E. Konstantinou, L.N. López de Lacalle	Exploring the role of digital twins for occupational safety and health management in aerospace manufacturing
12:45-13:00	M. Ramirez-Peña, A. Cerezo-Narváez, M. Otero-Mateo, A. Pastor-Fernández, M. Batista	Digitalization and Competitiveness in the Aerospace Sector: Social Implications and Global Challenges

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Thursday, June 19

Session AMRP-6. Additive Manufacturing and Rapid Prototyping

Room: **BAROJA**

Chair: Jorge Salguero

Time	Authors	Title
14:30-14:45	F. Peña, A. Fernández, S. Álvarez, P. Zapico, V. Meana, R. Marqués, M.A. Viñuela	Feasibility of non-contact digitizing for topography characterization of MEX/P parts
14:45-15:00	S. Ausellé-Bosch, J.M. Rodríguez Rego, L. Mendoza-Cerezo, A.J. Guerra A. Bosch, E. Casanova-Batlle, J. Ciurana, T. Puig, T	A new multitech bioprinter for high precision triple negative breast cancer modeling
15:00-15:15	M.C. Mera Bastidas, H. García de la Torre, G. Gómez-Gras, M.A. Pérez	Design and optimization of stainless-steel shell-TPMS cellular solids obtained via MEX
15:15-15:30	G. Gómez-Gras, H. García de la Torre, K. Pérez Bustos, M. C. Mera, M.A. Pérez	Multivariable doehlert design for the optimization of manufacturing parameters of 17-4 ph stainless steel parts produced by MEX
15:30-15:45	P. Castelló-Pedrero, J. Bas-Bolufer, C. García-Gascón, J. P. Márquez-Costa, J. Antonio García-Manrique, F. Chinesta	Simulation of large format additive manufacturing: development of DIGIMAT and ABAQUS numerical models for thermal analysis
15:45-16:00	C. García-Gascón, P. Castelló Pedrero, J. Bas Bolufer, F. Chinesta	Deep Learning Methodology to Optimize the Characterization Process of Additive Manufacturing Composite Materials

Session AIMP-4. Advances and Innovations in Manufacturing Processes

Room: **ARRIAGA**

Chair: Carpóforo Vallengano

Time	Authors	Title
14:30-14:45	J. Crespo-Sánchez, S. Fuentes del Toro, A. M. Camacho, A. Rodríguez-Prieto	Influence of design parameters on compression performance of 3D printed PEEK auxetic structures
14:45-15:00	A. Guerra-Sancho, J. Díaz-Álvarez, M.H. Miguélez, J.L. Canter	Effect of cutting edge rounding radius in drilling processes of CFRP-Ti6Al4V multi-material stacks in aircraft structural components
15:00-15:15	J. Molinuevo, E. Rodríguez-Vidal, B. Coto, C. Monteserín, V. Alonso	An insight of the injection molding processing of polypropylene on ultrafast laser structured surfaces: effect of the topographical modification on the polymer wettability
15:15-15:30	A. Sáez, A. Díaz Álvarez, J. Díaz Álvarez, H. Miguélez	Numerical Analysis of thrust force and burrs generation during the drilling of Ti6Al4V
15:30-15:45	C. Rodríguez-Marín Peral, B. Achiaga Menor, A. Lopez García, L. Pedrolli	Analysis and challenges in powder feeding in additive manufacturing
15:45-16:00	A. Castrillo, H. Bravo, N. Ortega, S. Plaza, J.L. Osa	Study of the SAM performance on additive manufactured AISi10Mg alloy with CBN wheels

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Thursday, June 19

Session DM&CPT-2. Digital Manufacturing and CAX-PLM technologies

Room: **OTEIZA**

Chair: Rubén Dorado

Time	Authors	Title
14:30-14:45	I. Sedano, R. Trueba	Wi-Fi 7 network simulations performance results in industrial robot collaborative environment
14:45-15:00	B. Santidrián Manzanedo, J. Martínez Santiago, A. Villar Marzo	Enhancing industrial model performance through synthetic data generation using large language models: a comprehensive study on methods, fine-tuning, and expert knowledge integration
15:00-15:15	A. Daareyni, A. Martikkala, H. Mokhtarian, I. Flores Ituarte	Generative AI meets CAD: enhancing engineering design to manufacturing processes with large language models
15:15-15:30	V. Laügt, M. Calamaz, R. Brach	Automated measurement of serrated chip characteristics using image processing algorithms
15:30-15:45	L. Gomes Camargo, F. Marin, A. Roger Rodrigues, A. Fagali de Souza	Tool wear and form-error when parameterising spindle speed and feed rate for a constant cutting speed to improve free-form milling
15:45-16:00	L.F. Flores Rivera, F. Marin, A. Fagali de Souza	Towards cutting force prediction in CAD/CAM systems for milling free-form surfaces

Session AMRP-7. Additive Manufacturing and Rapid Prototyping

Room: **BAROJA**

Chair: TBD

Time	Authors	Title
16:30-16:45	J. Bas Bolufer, P. Castelló Pedrero, C. García Gascón, J.P. Márquez Costa, J.A. García Manrique	Flow optimization in large-format additive manufacturing with recycled ABS-GF
16:45-17:00	J. Bonada, O. Bové, J.M. Pons	Numerical approach to estimate the elastic mechanical properties of FFF printed parts according to the main printing parameters
17:00-17:15	J. Bonada, P. Barcelona, M. Casafont, E. Xuriguera, J.M. Pons	Development of a numerical model to predict the geometry and conversion ratio of parts manufactured through a mask image projection based in stereolithography process
17:15-17:30	D. Álvarez-Rubio, S. Giganto, J. Barreiro, S. Martínez-Pellitero	Integrating slate as a natural resource in additive manufacturing techniques
17:30-17:45	I. Buj-Corral, H. Sanz-Fraile, J. Cabrera-Vilalta, J. Minguella-Canela, J.A. Padilla, P. Barcelona, E. Xuriguera	Characterization of 3D printed YSZ parts for medical applications
17:45-18:00	I. Buj-Corral, E. E. Zayas-Figueras, A. Lilian García Campos, R. Trinchet-Soler, R. Pérez-Rodríguez	Manufacture and dimensional measurement of 3D printed surgical models of maxillofacial bones

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Thursday, June 19

Session AIMP-5. Advances and Innovations in Manufacturing Processes

Room: **ARRIAGA**

Chair: TBD

Time	Authors	Title
16:30-16:45	M. Caroline Gomes, T. Alonso M. Clara Coimbra Goncalves, M. Bacci da Silva	Investigation of surface quality in low speed micromilling of H13 tool steel manufactured conventionally and by DED
16:45-17:00	C.M. Chingo, G. Ortiz-de-Zarate, A. Madariaga, A. Sela, A. Chuvilin, P.J. Arrazola	Evaluation of Digital Image Correlation Software and Parameters in Mechanical Testing Applications
17:00-17:15	J. de Carvalho Teixeira Baifus, D. Porto, P. Paulo de Andrade Junior, A. Fagali de Souza	Investigating the injection molding process of thick walled parts using different material of molds 316L stainless steel and CuBe alloy
17:15-17:30	J.M. Cordeiro de Sousa Ruela e Silva, P.A. Rodrigues Carvalho Rosa, A. Roger Rodrigues, A. Fagali de Souza	Ball end milling experiments analysis towards an empirical model
17:30-17:45	H. Bravo, N. Ortega, R. Polvorosa, I. Zamakona, R. Fradejas	Effect of cBN grain size and density in the specific energy, cutting forces and roughness generated while grinding Inconel718
17:45-18:00	S. Etxebarria Berrizbeitia, A. Pedrero Egurtza, L.N. López de Lacalle	Development, parameterization and effects of cleaning in an innovative production process based on manual laser welding of thin aluminum parts

Session SGM-3. Sustainable and Green Manufacturing

Room: **OTEIZA**

Chair: Álvaro Rodríguez Prieto

Time	Authors	Title
16:30-16:45	O. Jimenez-Salvador, M. Berzal, R. Calvo	Hydrophobic surface manufacturing by bioinspired roughness
16:45-17:00	B. Mateu, M.B. Almendro, I. Melendez, A. Amat, C. Rodríguez, I. Ruiz, M. Amado F. Arán	Reducing the carbon footprint of footwear: the role of mechanical recycling and eco-design
17:00-17:15	A. Daareyni, E. Pagone, S. Thayapararajah, H. Mokhtarian, G. Tosello, I. Flores Ituarte	Intelligent manufacturing paradigms: linking generative design and sustainability in large-area additive manufacturing
17:15-17:30	S. Reina, E. Cando, A. Torres, P. Pinchao, M. Yáñez, J.C. Almachi	Evaluation of green hydrogen production methods using surplus hydroelectric energy applied to the heavy transport sector: A case study in Ecuador
17:30-17:45	C. Ayabaca, J. Alajo, E. Pachacama, S. Reina, C. Vila Pastor	Study of the cutting parameters of ASTM A36 steel plates, using a metal cutting band saw, in different lubrication conditions.
17:45-18:00	C. Ayabaca, K. Calva, S. Reina, J. Valverde, D. Venegas	Study for the improvement of surface roughness in the turning of AISI 4140 steel shafts under different lubrication conditions

PARALLEL SESSIONS (PRELIMINARY PROGRAMME)

Friday, June 20		
Session AMRP-8. Additive Manufacturing and Rapid Prototyping		
Room: BAROJA		Chair: María Luisa García-Romeu
Time	Authors	Title
9:30-9:45	E. Merino-Gómez, F.J. Santos Martín, M. San-Juan, L. Fucito	The Sculpture Technology. Manufacturing processes of historic bronzes
9:45-10:00	C. Cobos, T. Brito Sanmartin, S. Ferrándiz, L. López	Design and blow moulding manufacturing cavities using reverse engineering to capture complex geometries through 3D printing
10:00-10:15	A. Miranda Rivero	Application of laser DED technology in the manufacturing of a variable transition nozzle
10:15-10:30	M.A. Bouza Rodas, F.D. Sura Cárcamo, E.I. Rosales Molina, M. Batista	Rapid tooling with FFF in textile industry
10:30-10:45	A. Travieso-Disotuar, J.A. Travieso Rodríguez, M. Vilaseca, R. Jerez-Mesa	Post-Processing Metal Additive Manufactured Surface Through Vibration Assited Ball Burnishing
10:45-11:00	Y. Erimar Becerra Borges, A. Cazón-Martín, M.I. Rodríguez-Ferradas, P. Morer-Camo, U. Etxaniz-Sein J.C. Manchado, M. Virginia Candal	Effect of 3D-printed orientation of injection mold inserts on the mechanical properties of plastic parts
Session TMSA-1. Trends in Manufacturing systems and Automation		
Room: ARRIAGA		Chair: Maria Rosario Domingo
Time	Authors	T23itle
9:00-9:15	E. Merino, F. J. Santos, M. San-Juan	About human and learning factors impacting manual picking on assembly lines
9:15-9:30	M. González, A. Rodríguez, L.N. López de Lacalle	A novel methodology to improve robotic contour following by using radial-compliant pneumatic spindles
9:30-9:45	D. Zhenhua, G. Kai, S. Jie, H. Xiaoming	Dynamic stiffness enhancement of industrial robot joints based on hybrid drive actuator
9:45-10:00	J.J. Arias Morán, R. Ferrero-Guillén, A. Martínez-Gutiérrez, J. Díez-González, H. Pérez	Geometry based automatic inspection planning for industrial boroscopy
10:00-10:15	S. Liu, D. Lyu, W. Zhao, J.A. Ealo, H. González Barrio, L.N. López de Lacalle	The mechanism of s-shaped test piece measuring dynamic errors of CNC machine tool
10:15-10:30	E. D. Chávez Pereda, S. García Vilana, H. A. González Rojas, A.J. Sánchez Egea	Development and validation of a electromagnetic device for vibratory needle insertion
10:30-10:45	E. Bianchi, F. Javier Brosed Dueso, J. A. Yagüe-Fabra	Closed loop control of a modular under-actuated smart surface for material handling
10:45-11:00	R. Calvo	Bottleneck dynamics and throughput optimization in tandem lines of limited capacity

PARALLEL SCIENTIFIC ACTIVITIES

PRE-TOUR to CFAA, IDEKO-BRTA and DANOBAT



**Tuesday 17 June 2025,
from 8.45 to 17:45**

Departure and arrival point: Bizkaia Aretoa.



As part of the pre-conference events on June 17th, a Pre-Tour is scheduled, offering visits to the CFAA (Advanced Manufacturing Center for Aeronautics), the IDEKO-BRTA Research Center, and DANOBAT. CFAA is the Manufacturing Basque Research Centre of Aeronautical Manufacturing (www.cfaa.eus). Ideko is a leading research centre about machine tools and manufacturing, in the Danobat group (www.ideko.es). Danobat is a company making grinders and lathes. This one-day tour will provide insights into the innovative approaches to manufacturing in the Basque Country.

Programme

- 8:45: Pick up at a Bilbao meeting point.
- 9:15: Visit to CFAA, advanced manufacturing centre at Zamudio technological park.
- 10:30 Coffee.
- 11:00: Leaving for Elgoibar.
- 11:45 Welcome to Ideko. Visit.
- Lunch.
- 15:30 Visit to Ideko and Danobat.
- 16:45 Return to Bilbao (arriving at 17:45 approx).

Places are limited. It is necessary to apply for it in the registration order. Fee: 20€ (Until 30th April) / 25€ (from 1st May). Visit, transfer and lunch included.

SPECIAL TALKING



Wednesday 18 June 2025, 16:30

Room Bizkaia Aretoa: TBD.



Prof. Dragos Axinte will present a talk on “How to Propose New Contributions on Manufacturing for Top Journals.” With the growing challenges of getting papers accepted in high-ranked journals, having a clear method, well-structured content, and expert tips can be invaluable. Who better to guide this than the Editor-in-Chief of the leading journal in manufacturing?

PARALLEL SCIENTIFIC ACTIVITIES

PAPER SURGERY SESSIONS



Thursday 19 June 2025, morning

Room Bizkaia Aretoa: TBD.



Additionally, on the morning of June 19th, there will be a Paper Surgery Session aimed at helping young researchers refine their ideas and drafts for submission to IJMT&M (IF 14) or JMPT (IF 6,7).

Academics or researchers interested in participating in the Paper Surgery should submit a title and an extended summary (max. 2 pages) of the paper or research topic for discussion. Submissions should be sent by the deadline (1 week before conference) to Dragos.Axinte@notttingham.ac.uk

Prof. Axinte will review the submissions and select papers for discussion, assigning each a time slot on the agenda (2nd day of the event). This will be a private, 30-minute meeting between the Editors and potential authors. For those unable to attend in person, virtual meetings can be arranged to avoid travel inconveniences.

INDUSTRIAL VISIT



**Friday 20 June 2025,
from 3:00 pm to 5:30 pm**

Departure and arrival point: Bizkaia Aretoa.

Free for registered MESIC attendees. It is required to book in the registration process. 1 delegate can choose 1 technical visit, as they take place simultaneously. Confirmation and details 1 month before.

Option 1: Haizea Wind

Founded in 2018 in the Port of Bilbao, **Haizea Bilbao** is a company dedicated to the manufacture and assembly of large metal structures for offshore wind turbines, such as wind towers, monopiles or primary steel for transition pieces. It has direct and preferential access to a mooring line 800m long with a depth of 21m, allowing optimised logistics for both incoming and outgoing materials. The factory has been designed to cover the current and future dimensions of the offshore components, with diameters of up to 11m. In addition, the plant has a layout designed to achieve production efficiency, being the factory with the largest capacity in Europe.

Maximum 40 people.



Option 2: CFAA

The CFAA (Centre for Advanced Aeronautical Manufacturing) is a research centre belonging to the UPV/EHU dedicated to research, development and innovation in advanced manufacturing technologies for the aeronautical industry. It is a strategic initiative in the region to promote competitiveness and collaboration between companies, universities and technology centres.

Maximum 60 people.



SOCIAL PROGRAMME

IRON RIVER TOUR



Wednesday 18 June 2025, 19:00

*Departure and arrival point: Itsasmuseum Muelle Ramón de la Sota, 1, Bilbao
Included in the registration fee.*

The boat trip along the Bilbao estuary from the Maritime Museum to the Portugalete Bridge will take you on a fascinating journey through the city's industrial past, revealing how this river artery was the epicentre of its economic development. As the tour progresses, old ship-yards, port cranes and industrial structures converted into modern installations can be seen, as is the case in Zorrotzaurre, a former industrial quarter undergoing a transformation towards a model of urban innovation.



Throughout the visit you will see vestiges of the intense mining and iron and steel activity that defined Bilbao during the 19th and early 20th centuries, such as the loading docks and factories that still dot the riverbanks. Arriving at the Portugalete Bridge, declared a World Heritage Site by UNESCO, the tour ends with one of the architectural jewels.

At the end we will have a cocktail next to the Itsasmuseum.

GALA DINNER



Thursday 19 June 2025, 20:00

*Sociedad Bilbaina
Calle Navarra (Nafarroa Kalea) 1.
Included for Full Delegates and
Accompanying Person
Extra conference dinner ticket: 90€.*

The Sociedad Bilbaina is a private club whose 1913 headquarters is declared as a Cultural Asset, with the category of Monument. La Sociedad Bilbaína is a distinguished building that is of cultural interest and houses one of the most select private clubs in the Vizcayan capital. Founded as a place of relaxation and recreation in the purest European style of the time, this magnificent club, with its emblematic façade and large bay windows, has one of the most important private libraries in Spain, containing more than 40,000 volumes, including incunabula. This outstanding building is opulently decorated inside, and some of the most important personalities in the areas of economics, finance and culture have passed through its doors.



The Sociedad Bilbaina is located in the centre of Bilbao close to the old town and Gran Via Street.

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