

# AIAM'2023 Conference Program

## Thursday May 18, 2023 - PM

12H30 to 13H30	<b>Registration</b>
13H30 to 14H00	<b>Conference Opening</b>
<b>Session 1: Microstructure and Properties of Built-AM High-Performance Metals</b> Moderators: Prof. M. Soula & Prof. A. Hamdi	
14H00 to 14H35 (35 mn)	<b>Plenary 1: Prof. Anis Hor, ISAE-Supaero, Toulouse, France</b> Effect of process parameters and heat treatments on microstructure and fatigue behavior of AM parts
14H35 to 14H50 (15 mn)	<b>461462:</b> Control of the microstructure and mechanical properties of a super duplex SAF 2507 steel produced by additive manufacturing; <b>M. Piras, A. Hor, E. Charkaluk.</b>
14H50 to 15H05 (15 mn)	<b>461415:</b> Microstructure and mechanical properties of hybrid LPBF-DED Inconel 625; <b>N. Martin, A. Hor, E. Copin, Ph. Lours, L. Ratsifandrihana.</b>
15H05 to 15H20 (15 mn)	<b>461576:</b> Printability of CoCrFeNiMnZrAlxCu High Entropy Alloy by Laser Powder Bed Fusion; <b>Eric Barth, Anis Hor</b>
15H20 to 15H35 (15 mn)	<b>460080:</b> Mechanical properties of additively manufactured 17-4PH stainless steel: heat treatment; <b>T. Aouled Mohamed Sghaier, H. Sahlaoui, H. Sallem, J. Rech, T. Mabrouki.</b>
<b>15H35 to 16H25</b>	<b>Coffee Break/Exhibition/Poster/Demonstration</b>
<b>Session 2: AM for Biomedical Applications</b> Moderators: Prof. S. Ben Salem & Prof. M.A. Terres	
16H25 to 17H00 (35 mn)	<b>Plenary 2: Dr Adnen Sakly, Michellin, France</b> Metallic Additive Manufacturing in industry: materials and process industrialization advances
17H00 to 17H15 (15 mn)	<b>461889:</b> Effect of process parameters and surface coating on the corrosion behavior of SLM 316L in normal and simulated febrile states; <b>H.Yahyaoui, M.Sahraoui, N. BenMoussa, M. Habibi, F. Ghanem.</b>
17H15 to 17H30 (15 mn)	<b>464687:</b> The impact of simulated inflammation on the corrosion behavior of Ti-6Al-4V implants produced via selective laser melting; <b>M. Sahraoui, H. Yahyaoui, N. Ben Moussa, M. Habibi.</b>
17H30 to 17H45 (15 mn)	<b>465761:</b> Nitinol stents printed by selective laser melting; <b>L. Jerjen, B. Schnyder, O. Banakh, T. Journot, H. Sallem, J. Pralong, S. Rey-Mermet.</b>
17H45 to 18H00 (15 mn)	<b>465694:</b> Preliminary study of geometric defects and topography of bio-carriers fabricated by the FDM printing process, <b>N. Ben Hariz, A. Boulila, M. Ayadi.</b>

## Friday May 19, 2023 - AM

<b>Session 3: Mechanical Behavior of 3D-Printed Materials</b> Moderators: Prof. Prof. F. Ghanem & Prof. A. Boulila	
09H00 to 09H35 (35 mn)	<b>Plenary 3: Eng. Abdelkader Belhi, PLM Ressources, Tunisia</b> Innovation in Digital Manufacturing with Siemens Software Solutions
09H35 to 09H50 (15 mn)	<b>459968:</b> Determination of mechanical parameters of 3D-printed parts: Experimental and numerical analyses; <b>S. Chatti</b>
09H50 to 10H05 (15 mn)	<b>466131:</b> Study of the effect of bio-inspired surface texture on the shear strength of 3D-printed materials: Comparison between SS and PC joints, <b>N. Naat, Y. Boutar, S. Naimi, S. Mezlini, L.F.M. Da Silva.</b>
10H05 to 10H20 (15 mn)	<b>463520:</b> 3D-Printed Flax/PLA Material Re-entrant Honeycombs: Damping behavior; <b>A. Hamrouni, J.L. Rebiere, A. El-Mahi, M. Beyaoui, M. Haddar, A. Hamza, N. Ben Yahia.</b>
10H20 to 10H35 (15 mn)	<b>463912:</b> 3D Printed Educational Robotic Arm; <b>M. Slim, N. Rokbani and M. Ali Terres</b>
<b>10H35 to 11H05</b>	<b>Coffee Break/ Exhibition/Poster/Demonstration</b>
<b>Session 4: Design and Optimization of Additively Manufactured Biomedical Engineering Structures</b> Moderators: Prof. S. Chatti (ISSATSo) & Prof. B. Ben Fathallah	
11H05 to 11H20 (15 mn)	<b>467082:</b> Topological Optimization of Ti-6Al-4V Knee Prostheses through Lattice Structures for Enhanced Mechanical Performance; <b>M. Frija, A. Toumi, M. Khodja.</b>
11H20 to 11H35 (15 mn)	<b>463516:</b> 3D-Printed Auxetic and Non-Auxetic Bio-Material: Elastic Properties; <b>A. Hamrouni, J.L. Rebiere, A. El-Mahi, M. Beyaoui, M. Haddar, A. Hamza, N. Ben Yahia.</b>
11H35 to 11H50 (15 mn)	<b>463919:</b> Manufacturing of cranial implant using SPIF and 3D printing; <b>S. Marzougui, S. Bouzidi, A. Boulila.</b>
11H50 to 12H05 (15 mn)	<b>459870:</b> Thermal investigation on graded ZrO <sub>2</sub> / Ti-6Al-4V plates; <b>S. Zghal, M. Chrigui, F. Dammak.</b>
<b>Lunch</b>	

## Friday May 19, 2023 - PM

<b>Session 5: Engineering Education and Human-Cyber-Physical Systems for Additive Manufacturing</b> Moderators: Prof. S. Chatti (ENIM) & Prof. N. Ben Moussa	
14H00 to 14H35 (35 mn)	<b>Plenary 4: Eng. Alan Marion, Dassault Systèmes, France</b> Portfolio 3D-EXPERIENCE EDU
14H35 to 14H50 (15 mn)	<b>459982:</b> New Horizons in Engineering Education: From Additive Manufacturing to Immersive Learning; <b>S. Bhar Layeb, A. Jaoua, M. Noomen.</b>
14H50 to 15H05 (15 mn)	<b>459969:</b> Exploring Human-Cyber-Physical Systems in Additive Manufacturing: Insights into Human-Machine Collaboration; <b>A. Hamza, N. Ben Yahia</b>
15H05 to 15H20 (15 mn)	<b>460017:</b> Intégration de l'apprentissage automatique dans la fabrication additive ; <b>R. Nasri, F. Abbassi, N. Ben Yahya.</b>
15H20 to 15H35 (15 mn)	<b>464050:</b> Predicting laser energy absorption history in Selective Laser Melting; <b>M. Abdi, M. Ayadi, H. Eloukabi.</b>
15H35 to 15H50 (15 mn)	<b>459977:</b> Simplification of an Additive Manufacturing Machine implementation using its CAD model and Mixed-Reality; <b>M. Ghobrial, Ph. Seitier, M. Galaup, P. Lagarrigue, P. Gilles.</b>
<b>15H50 to 16H20</b>	<b>Exhibition/Poster/Demonstration</b>
<b>Session 6: Methods, Optimization, and Cost Analysis for AM</b> Moderators: Prof. A. Trabelsi & Prof. M.A. Rezgui	
16H20 to 16H55 (35 mn)	<b>Plenary 5: Prof. Walid Jomaa, University of Montréal, Canada</b> Metal AM for Aerospace: An Insight into Recent Advances, Challenges, and Future Perspectives
16H55 to 17H10 (15 mn)	<b>472142:</b> Multi-objective parameters optimization of PLA 3D printed parts using the Box Behnken method and Grey Relational Analysis; <b>R. Salem, R. Bahloul.</b>
17H10 to 17H25 (15 mn)	<b>463997:</b> A CAD-based method for the measurement of AM parts accuracy considering the build orientation; <b>A. Elayeb, A. Korbi, R. Bahloul, F. Zemzemi, M. Tlija, B. Louhichi.</b>
17H25 to 17H40 (15 mn)	<b>459848:</b> Etude thermique pour optimisation du procédé de soudage thermomécanique bout à bout des tubes en PEHD (PE100) ; <b>W. Awadi, M. Zidi</b>
17H40 to 17H55 (15 mn)	<b>459869:</b> Additive Manufacturing and Investment Casting Comparison of Superalloys: Aerospace industry; <b>B. Aouadi, S. Ghannem, B. Ben Fathallah, M. A. Yaltese.</b>
17H55 to 18H10 (15 mn)	<b>463996:</b> The impact of the adaptive slicing integration on the AM cost; <b>A. Elayeb, F. Zemzemi, M. Tlija, B. Louhichi.</b>
18H10 to 18H25 (15 mn)	<b>475797:</b> In-situ monitoring of Selective Laser Melted Ti-6Al-4V parts using Eddy Current Testing and Machine Learning; <b>H. Sallem, H. Ghorbel, E. Goffinet, A. Cinna, J. Pralong, J. Wicht, B.Revaz.</b>

## Saturday May 20, 2023 - AM

<b>Session 7: Sustainability and Cost Reduction Strategies for AM-built Materials</b> Moderators: Prof. F. Zemzemi & Prof. H. Hamdi	
08H30 to 09H05 (35 mn)	<b>Plenary 6: Prof. Zoubair Lafhaj, Ecole Centrale de Lille, France</b> 3D printing in construction and the circular economy: challenges and opportunities
09H05 to 09H20 (15 mn)	<b>472197:</b> Non-conformities and scrap cost reduction in a 3D printing Workshop; <b>S. Mathlouthi, A. Gabsi.</b>
09H20 to 09H35 (15 mn)	<b>460069:</b> Contribution à la formulation d'un matériau à base de déchets de marbre en vue de son utilisation dans l'impression 3D en Génie Civil; <b>H. Zargayouna, H. Essaieb, T. Mabrouki.</b>
09H35 to 09H50 (15 mn)	<b>463931:</b> Easy transformation of bottles used in PET into ecological filament for 3D printing and characterization of the result; <b>C. Ben Aissa, A.Gabsi, S. Mathlouthi, A. Ghanem.</b>
09H50 to 10H05 (15 mn)	<b>475769:</b> Modeling and Optimization of Joint Condition-based Quality/Maintenance Strategy for an Additive Manufacturing Equipment; <b>Z. Boumallessa, M. Elleuch, H. Chouikhi, H. Bentaher.</b>
<b>10H05 to 10H25</b>	<b>Exhibition/Poster/Demonstration</b>
<b>Session 8: Modeling, Simulation and Optimization in AM</b> Moderators: Prof. M. Arfaoui & Prof. B. Louhichi	
10H25 to 11H00 (35 mn)	<b>Plenary 7: Prof. Issam Doghri, UCLouvain, Belgium</b> Multiscale modeling of the thermomechanical behavior of semi-crystalline polymers AM with SLS
11H00 to 11H15 (15 mn)	<b>460109:</b> Etude expérimentale et numérique du procédé de fabrication additive Arc-fil (WAAM) ; <b>S. Shiri, M. Rabhi, A. Ben Khalifa, K. Boulahem, F. Aloui, S. Chatti.</b>
11H15 to 11H30 (15 mn)	<b>464465:</b> Parameters effect on bead geometry deposited by cold metal transfer based Wire Additive Manufacturing (WAM) Process; <b>O. Trad, A. Ben Khalifa, F. Zemzemi, H. Hamdi.</b>
11H30 to 11H45 (15 mn)	<b>460098:</b> Modeling for Powder Bed Fusion Additive Manufacturing process; <b>H.E. Kortli, N. Ben Moussa, H. Yahyaoui, F. Ghanem.</b>
11H45 to 12H00 (15 mn)	<b>463341:</b> Use of the RDPP-SF method for robust design of dynamic AM-Fused Deposition Modeling process; <b>M. Amdouni, A. Dhokkar, A. Trabelsi, M.A. Rezgui.</b>
<b>Conference Closing</b>	
<b>Lunch</b>	