

## Secondes journées du GDR ALMA

INSA Rouen – GPM. Mardi 27 juin 2023 – Jeudi 29 juin 2023

### Programme final

Mardi 27/06/2023

8h30 - Accueil / Enregistrement		
9h30 - Ouverture des JA		
Mot de bienvenue G. Gassot, INSA Rouen		
Mot de bienvenue X. Sauvage, GPM		
Présentation des Journées, E. Hug, CRISMAT - B. Vieille, GPM		
Première session	Mécanique, rupture	Animateur : Etienne Pessard
10h-10h30. <b>Fabien Szymtka</b> , IMSIA Paris, Mechanical Resistance assessment of 316L stainless steel additively-repaired structures		
10h30-11h. <b>Edouard De Sonis</b> , Mines Paris, Evry, On the fracture behavior of 316L stainless steel produced by laser powder bed fusion		
11h-11h30. <b>Denis Solas</b> , ICMMO, Orsay, Effect of scanning parameters on texture development and its consequences on the anisotropy of mechanical properties		
11h30-12h. <b>Elisa Borges Mendonça</b> , Mines Paris, Evry, Effect of chemical microsegregation on the hot cracking sensitivity of nickel-based superalloys manufactured by L-PBF		
12h-12h30. <b>Shubham Sanjay Joshi</b> , GPM Rouen, Influence of volume energy density in additive manufacturing and temperature on the strain hardening mechanisms of L-PBF Ni20Cr alloy		
12h30-14h – Déjeuner		
14h-14h45. <b>Thierry Gloriant</b> , ISCR Rennes : Outstanding strain-hardening of new titanium-based alloys manufactured by laser power bed fusion (Animateur : Eric Hug)		
Deuxième session	Procédés, microstructures	Animateur : Eric Hug
14h45-15h15. <b>Elise Ferreira</b> , IRT St Exupéry Toulouse, Development of nickel based functionally graded material by Laser Metal Deposition		
15h15-15h45. <b>Lucia Garcia de la Cruz</b> , UC3M Madrid, Processing of CoCrMo alloy samples with bimodal grain size distribution by Composite Extrusion Modeling		
15h45-16h15. <b>Jean-Michel Missiaen</b> , SIMAP Grenoble, Material Extrusion (MEX) Additive Manufacturing using MIM feedstocks: a versatile technique for the Additive Manufacturing of various metallic parts		
16h15-16h45 – Pause Café		
Troisième session	Microstructures	Animateur : Jean-Michel Missiaen
16h45-17h15. <b>Williams Lefebvre</b> , GPM Rouen, Atom probe tomography investigations of as-built and heat-treated microstructures of Al-based alloys processed by laser powder bed fusion		
17h15-17h45. <b>Gildas Guillemot</b> , CEMEF Sophia Antipolis, Three-dimensional modelling of solidification grain structures generated by laser powder bed fusion - Application to Inconel 718 Nickel-based superalloy		
17h45-18h15. <b>Julien Rodrigues Da Silva</b> , PIMM Paris, Laser powder bed fusion of small struts. Influence of the scanning conditions and the part size on the microstructures and mechanical resistance		
18h15-20h	Session Posters	

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Quatrième session	Aspects numériques	Animatrice : Muriel Carin
8h30-9h. <b>Simon Essongue</b> , I2M Bordeaux, Speeding up mesoscale thermo-mechanical simulations of powder bed fusion: focus on temporal discretization and spatial adaptivity		
9h-9h30. <b>Mickaël Courtois</b> , IRDL Lorient, Two-scale modeling of the WAAM process. Link between thermo-hydrodynamics and mechanics		
9h30-10h. <b>Amèvi Tongne</b> , LGP Tarbes, Development of a new multi-scale adaptive remeshing approach for the description of strong local gradients in order to predict defects in the whole part during LPBF Additive Manufacturing		
10h-10h30. <b>Eric Feulvarch</b> , LTDS St Etienne, An efficient FEM approach for simulating metal deposition geometry achieved by LMD-p process		
10h30-11h – Pause Café		
Cinquième session	Mécanique, fatigue	Animateur : Clément Keller
11h-11h30. <b>Yves Nadot</b> , PPrime Poitiers, Role of defects and microstructure on the fatigue durability of Inconel 718 obtained by Additive Layer Manufacturing route		
11h30-12h : <b>Marion Auffray</b> , CEA-LAMPA Angers, Role of surface roughness, defects, residual stresses, and local microstructure on the fatigue strength of Laser Powder Bed Fusion (L-PBF) 316L stainless steel		
12h-12h30. <b>Mélanie Prost</b> , SIMAP Grenoble, Mines Paris Evry, Anisotropy of behavior and fatigue crack growth in the material IN718 L-PBF		
12h30-14h – Déjeuner		
14h-14h45. <b>Stewart Williams</b> , Cranfield University, UK, Large scale wire-based additive manufacture, latest and future developments (Animateur : Cyril Bordreuil)		
Sixième session	Microstructures, propriétés	Animatrice : Sophie Eve
14h45-15h15. <b>Thibaut Froeliger</b> , ONERA-DMAS Chatillon, Development of $\gamma/\gamma'$ hardened cobalt-based superalloys by laser additive manufacturing		
15h15-15h45. <b>Isabelle Monnet</b> , CIMAP Caen, Influence of the microstructure of additively manufactured Ni20Cr microstructure on aging under irradiation		
15h45-16h15. <b>Daniel Weisz-Patrault</b> , LMS, Palaiseau, Fast model of DED from thermal analysis to microstructure, and part-scale residual stress estimation		
16h15-16h45 – Pause Café		
Septième session	Procédés – durabilité	Animateur : Gildas Guillemot
16h45-17h15. <b>Xavier Boulnat</b> , MATEIS Lyon, Optimisation of lithography-based metal additive manufacturing of 316L complex parts: from metal powders to sintered parts		
17h15-17h45. <b>Lydie Mas</b> , CRISMAT Caen, Impact of the microstructure of a Ni20Cr alloy produced by additive manufacturing on the electrochemical corrosion resistance		
17h45-18h15. <b>Bertrand Max</b> , IRT St Exupéry Toulouse, Powder Bed Additive Manufacturing of alloy 718 – development of dedicated post-fabrication heat treatments		
18h15-18h45. <b>Paul Bourot</b> , LEM3 Metz, Study of powder blend behavior and its application to the PBF-LB process		
18h45-20h	Session Posters	

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**Jeudi 29/06/2023 : Demi- journée couplée**

**GT1 (Interactions Energie-Matière) – TT1 (Caractérisations, Grands Instruments)**

8h30-8h45. Introduction (Patrice Peyre, Emilie Le Guen, Jean-Yves Buffière)		
Huitième session		Animateur : Jean-Yves Buffière
8h30-9h. <b>Cyril Bordreuil</b> , LMGC, Montpellier, Temperature distribution and weld pool dynamic in WAAM transfer		
9h-9h30. <b>Agnès Schnell</b> , Mines Paris Tech, Evry, Wetting and spreading of a binder droplet on a powder bed: towards understanding the dimensional inaccuracies of parts manufactured by Metal Binder Jetting		
9h30-10h. <b>Robin Kromer</b> , I2M Bordeaux, Instrumented benches for additive manufacturing process monitoring and quality assurance		
10h-10h30. <b>Patrice Peyre</b> , PIMM, Paris, Contribution of instrumentation to the understanding and control of the LPBF process		
10h30-11h – Pause Café		
Neuvième session		Animatrice : Emilie Le Guen
11h-11h30. <b>Camille Puzon</b> , SIMAP, Grenoble, New insight into additive manufacturing with multi-scale resolution synchrotron x-ray tomography		
11h30-12h. <b>Kouider Abdellah Abdesselam</b> , LMS, Palaiseau, Do dislocations evolve during additive manufacturing? – A synchrotron X-ray diffraction study		
12h-12h30. <b>Joël Lachambre</b> , LAMCOS, Lyon, Bichromatic melt pool thermal measurement based on a RGB camera: application to additive manufacturing processes		
12h30-14h – Déjeuner et clôture des JA		