



Technical Programme

Day 1
August 31st

Las Arenas IV Chairman: M. A. Rodríguez-Pérez			
8:00	Welcome		
8:30	Plenary-222 J. Banhart The long road to porosity		
Las Arenas IV Synthetic 3D Structures I Chairman: C. Körner		Las Arenas I Heat & Mass Transfer I Chairman: N. Dukhan	
9:30	K-156 D.C. Dunand Metallic Scaffolds by Reduction of 3D-Printed Oxide Inks	9:30	O-53 H. Oun Pressure-drop measurement and optimisation in structurally altered open-cell porous structures
10:10	O-166 U. Jehring Highly porous 3D-polyhedron structures for abradable seals	9:50	O-159 C. Busse Heat transfer in periodic open cellular structures produced via additive manufacturing
10:30	O-135 S.L. Taylor 3D Printed Ni-Mn-Ga Magnetic Shape Memory Alloy Scaffolds	10:10	K-236 F. Topin About effective thermohydraulic properties of open-cell foams: Morphology, boiling and heat transfer
10:50	Coffee Break		
Las Arenas IV Synthetic 3D Structures II Chairman: J. Baumeister		Las Arenas I Heat & Mass Transfer II Chairman: F. Topin	
11:20	I-86 K.J. Kang An ultralow density material based on minimal surface theory	11:10	O-147 C. Thoumyre Optimization of architecture structures for harnessing, storage, and release of thermal energy
11:50	O-148 D. Erdeniz 3D Woven Ni-based Superalloy Scaffolds	11:30	O-100 S. Pinson Porous metals for transpiration cooling: numerical comparative study of different architectures
12:10	O-146 K.J. Kang A novel way to fabricate an ultralow density material	11:50	O-33 P. Kumar Introduction of Forchheimer number to characterize friction factor of open-cell foams
12:30	I-76 E. Maire Crumpling single sheets and entangling single wires to produce cellular metals	12:10	O-15 S. De Schampheleire Numerical study on a metal foam heat sink in buoyancy driven convection
12:30	I-76 E. Maire Crumpling single sheets and entangling single wires to produce cellular metals	12:30	I-35 N. Dukham Thermal Development of Non-Darcy Water Flow in Open-Cell Metal Foam: Experimental Results



13:00		Lunch	
Las Arenas IV Foams & Foaming Methods I Chairman: J. Weise		Las Arenas I Mechanical Properties of Cellular Metals Chairman: T. Hipke	
14:30	I-131 D. Yang Preparation of Mg alloy foam using CaCO ₃ as blowing agent through powder metallurgical method	14:30	O-66 I. Duarte Compressive and bending responses of in-situ foam filled tubes made of aluminium alloys
15:00	O-226 K. Heim The way to particle-free metallic foams created by gas injection	14:50	O-209 U. Krupp Brittle Failure of Metallic Foams under Tensile and Cyclic Loading – Experimental Studies and Standardization
15:20	O-151 J. Barode Magnesium as a blowing agent for metal foams	15:10	O-188 U. Jehring About elastic properties of cellular metals
15:40	O-57 T. Murakami New manufacturing Method of Porous Iron using Powders of Hematite and Carbonaceous Materials	Las Arenas I 3D Structural Characterization I Chairman: E. Maire	
16:00	O-64 T.R. Neu Influence of additives on the compaction quality of precursors and hence of aluminium foams	15:40	O-103 L. Lavery Flexible 3D and 4D Characterization of Porous Foams Using X-ray Microscopy
		16:00	O-129 C. Rudolf μ CT-based Inspection of Metallic Foam Structures
16:20		Coffee Break	
Las Arenas IV Production of Cellular Metals I Chairman: J. Banhart		Las Arenas I Cellular Biomaterials I Chairman: L. P. Lefebvre	
16:40	I-67 A.R. Kennedy Aluminium syntactic foams: Processing and properties	16:40	I-232 J. Gil Mur Biological and mechanical Response to Porous Titanium alloys for Intervertebrae Implants
17:10	O-150 Y. Liu Fabrication of Lotus-type Porous Micro-Channel Copper by Single-mold Gasar Technique	17:10	O-17 T. Aydogmus Shape memory behaviour of Ti49.6Ni50.4 foams
17:30	O-87 K.J. Kang A new auxetic structure based on wire-woven kagome	17:30	O-163 P. Fernández-Morales Open cell magnesium foams manufacturing for potential biomedical applications
17:50	I-95 H.P. Tang Sintered metal fibre porous materials and their applications: a recent development in China	17:50	I-78 O. Andersen Porous Magnesium Materials for Biodegradable Implants
Las Arenas II & III			
18:20		Poster session & finger buffet	



Technical Programme

Day 2 September 1st

Las Arenas IV Chairman: J. Banhart			
8:00	Plenary-154 A. Rabiei Overview of Composite Metal Foams and Metallic Bubble Wraps from Inception Till Now		
Las Arenas IV Foam Physics and Mechanisms I Chairman: M. Mukherjee		Las Arenas I Production of Cellular Metals II Chairman: F. Simancík	
9:10	K-121 F. García-Moreno In situ X-ray analysis of gas nucleation, bubble growth, coalescence, coarsening and foam stabilization in liquid Al foam	9:00	O-157 E. Maire Porous metals by dealloying in a metallic melt
9:50	O-73 P.H. Kamm Fast synchrotron X-ray tomography of dynamic processes in liquid Al foams	9:20	O-212 N. Babcsán Aluivent Aluminium Foam Can Do All and More
10:10	I-170 C. Jiménez Applications of simultaneous synchrotron white-beam X-ray tomography or radiography and diffraction to porous materials	9:40	I-152 C. Körner From open-cellular materials to mechanical metamaterials
		10:10	K-224 T. Hipke Aluminium Foams - An overview over processing technologies
Coffee Break			
Las Arenas IV Foam Physics & Mechanisms II Chairman: F. García-Moreno		Las Arenas I Property Profiles I Chairman: A. R. Kennedy	
11:20	I-203 S. Bhogi Formation of oxides during foaming of aluminium melt and their role in foam stabilisation	11:20	I-231 Y. Liu Microstructural evolution in sintering stainless steel fibres for porous metallic foam
11:50	O-173 M. Paepflow Coalescence avalanches in liquid aluminium foams	11:50	K-247 E. Solórzano/J.Lázaro Clues for Cellular Structure Optimization in Aluminium Foams
12:10	O-227 K. Heim Investigation of particle movements and drainage in liquid metallic films by synchrotron radiography		
12:30	O-43 A. Byakova Stabilization of Liquid Aluminium Foam with Carbonate Blowing Agent	12:30	O-115 M. Blanchet New metallic structured foams issued from casting process
		12:50	O-237 S. Suzuki Fabrication and mechanical properties of porous Al strengthened by Ni tubes
Lunch			

Las Arenas IV Property Profiles II Chairman: O. Andersen		Las Arenas II – III μCT Workshop Chairman: E. Solórzano		Las Arenas I Secondary Operations & Applications Chairman: C. Jiménez	
15:00	I-60 J. Baumeister Characterization of the damping ratio of APM hybrid foams in dependency on the composition	Micro-CT Workshop Participation of: Zeiss; Nikon; Bruker; iMorph; XRE		15:00	O-130 M. Khokhlov Joining Al foam with monolithic Mg alloys at low temperatures using Ga interlayer
				15:20	O-62 H. Du Improvement on mechanical properties, corrosion resistance of lotus-type porous copper by a nickel coating
				15:40	O-55 W. Y. Kim Deformation of Aluminium Foam in Cold Extrusion Process
16:00	O-25 M. Taherishargh An Overview on Expanded Perlite/Aluminium Syntactic Foam		16:00	O-51 V. Meille Coating metal foams with catalytic layers	
16:30	Coffee Break				
Las Arenas IV 3D Structural Characterization II Chairman: E. Maire		Las Arenas II-III Production of Cellular Metals III Chairman: M.A. Rodríguez-Pérez		Las Arenas I Simulation & Mechanical Properties Chairman: A. Rabiei	
16:50	K-61 J. Vicente Full structural Measurement of open cells Material with X-ray images	16:50	O-22 R. Baumann Precise laser separation of hollow metallic copper structures	16:50	O-162 Y. Amani FEM simulation and experimental study of elasto-plastic properties of cellular aluminium alloy
17:30	O-225 P. Gueth Metric graph model of fibrous material	17:10	O-177 A. Plunk Directionally-freeze-cast iron foams with hierarchical pore structure for hydrogen storage	17:10	O-197 Y. J. Cho Modeling and fabrication of functionally graded porous Ti for orthopedic application
17:50	O-72 A. Gancarczyk Specific surface area of solid foams: morphology studied by various methods and incompatible geometrical models	17:30	O-167 L. Biasseto Ti6Al4V macro-cellular interconnected foams via gel-casting and powder metallurgy route	17:30	O-47 M. Geissendoerfer Influence of Microplasticity in Metal Foams on Macroscopic Damping Behavior
18.10	O-176 A. Can Kaya Synchrotron-based X-Ray Micro-tomography on Failure of Hollow Steel Struts	17:50	O-133 R. Sepúlveda Fe-Base porous material created by freeze-casting to be used as a LHP		
19:00	Visit & Gala Dinner				



Technical Programme

Day 3 September 2nd

Las Arenas IV Chairman: M.A. Rodríguez-Pérez	
8:00	Plenary-207 B.Y. Hur New process and application of closed, open cell and fibers material by melt processing in Korea
Las Arenas IV Foams & Foaming methods II Chairman: B.Y. Hur	
Las Arenas I Heat and mass transfer III Chairman: J. Vicente	
9:00	K-216 F. Simancik Manufacturing challenges for large structural parts made of aluminium foam
9:00	K-174 L.P. Lefebvre Open-Cell Metallic Foams in Functional Applications
9:40	I-210 N. Babcsán Cellular metal production technologies, achievable structure and mechanical properties
9:40	O-36 Ö. Bağcı Heat Transfer Due to Oscillating Flow of Water in Metal Foam: An Experiment at Low Frequency
10:00	O-48 A.A. Ioannou Thermal Characterization of Replicated Microcellular Aluminium under Forced Convection
10:10	Coffee Break
Las Arenas IV Production of Cellular Metals IV Chairman: N. Babcsán	
Las Arenas I Cellular Biomaterials II Chairman: D.C. Dunand	
10:40	K-238 H.W. Seeliger Aluminium Foam Sandwich (AFS) - Challenging requirements applicable to the material by the customer
10:40	I-233 J. Pavón Advanced processing of porous titanium for bone and associated tissues repair: its role on multi-factorial, multi-scale
11:20	O-205 H. Goehler Metal Hollow Sphere Structures - Industrial Scale Production and Relevant Applications
11:10	O-45 I. Brown Design, Fabrication and Modelling of Cellular Titanium Alloy Structures for Medical Implants
11:40	O-213 H. Yoshimura New ball chain type MHS structure for impact energy absorbing car part
11:30	O-126 M. Necker Development of new nickel-based alloys for nanomembrane fabrication
12:00	O-68 H. Tanimoto Surface State of Ligaments in Nanoporous Gold Prepared by Selective Etching
11:50	O-234 J. Pavón Surface modification of porous titanium for bone repair: controlled etching and deposition of bioactive composite coating
Las Arenas IV	
13:00	Closing Event

Out of Programme

OPTION A		OPTION B	
16:00	Visit to Barcelona	16:00	Beach



List of Posters

Poster
P-13 V.D. Prieto Recycling Aluminum Cans for Manufacturing of Metallic Foams: Effect of Cooling Conditions on the Distribution of Porosity
P-14 A. Kouidri Experimental investigation of the pressure drop during the flow boiling and the surface roughness influence
P-16 T. Aydogmus Magnesium: A new alternative metallic space holder for porous material fabrication
P-18 H.D. Jung Biomedical Porous Magnesium composite with High Strength and Corrosion Resistance
P-19 H.D. Jung Novel Freeze Casting Technique with Metal Powder for Producing Porous Metal
P-20 M. Vesenjok Advanced Finite Element Modelling of Random Metallic Hollow Sphere Structures
P-23 A. Ashab Mechanical Response of Aluminum Honeycombs under Dynamic Combined Compression-Shear Load
P-24 D.Khusnullin Directional solidification for replicated aluminum foam production.
P-30 A.Vahid Effect of processing parameters on powder metallurgy-processed biodegradable Mg foam
P-32 D.Lehmhus Simulation-based analysis of the mechanical performance of iron matrix syntactic foams
P-34 C. Simoneau Modeling and additive manufacturing of open-cell random-porosity structures for biomedical applications
P-37 M. Hakamada Antibacterial properties of nanoporous gold
P-38 N. Lippitz Analyzing the structural evolution of porous aluminum during cold rolling
P-39 K. Lietaert Influence of processing technology on the compressive deformation of open cellular biodegradable Zn
P-41 B.S. Mocker Influence of casting and mold temperatures by molten Mg infiltration of open-pore Si foams
P-42 A.M. Matz Compressive deformation characteristics of low- and higher-strength open-pore aluminum foams produced by modified invest casting
P-44 A. Byakova Effect of Cell Wall Ductility on Compressive Response and Strain Rate Sensitivity of Aluminium Foam
P-46 R. Matsumoto Compressive Deformation Behavior of Aluminum Foam with Skin Surface Layer Formed by Friction Stir Incremental Forming
P-49 M.L. Zanota Coated foam deep characterization using X-ray tomography
P-50 I. Pitault Characterization of a modified Mahoney-Robinson reactor using cylindrical foams
P-52 I.N. Orbulov Basic fatigue properties of expanded perlite aluminium syntactic foams



P-54 M.J. Nayeri Towards Tailor-made Metallic Foams (TMFs)
P-58 M. Piatek Impact of the foam structure on heat transfer: experiments and theoretical analysis
P-59 M. Iwaniszyn Microtomography-based CFD analysis of fluid flow and heat transfer for open cell metal foam
P-63 M. Serres G-L Multiphase Flow Through an Open Cell Solid Foam Confined in a Milli-Channel
P-65I. Duarte An approach to the uniform dispersion of carbon nanotubes in the metal-matrix of aluminium foams
P-69B. Katona Behavior of metal matrix syntactic foams under cyclic loading
P-70 J. Gerardin Effective thermal conductivity of open cell foams for gas-solid reactors
P-71 D. Edouard The effective thermal conductivity of open cell foams.
P-74 A.Gancarczyk Liquid flow through metallic foams: flow resistance and axial dispersion
P-75 A. Settar Prediction of the Effective Thermal Conductivity of Random Metal Foam Using Inverse Methods
P-80 F.S. Han Effect of electrodeposited nickel film on the compressive properties of open cell aluminum foam
P-81 F.S. Han Fabrication and mechanical properties of aluminum lattice truss materials
P-82 J. Wang Compressive performance and energy absorption efficiency of porous metal fibers media
P-84 N. Movahedi Compressive and Corrosion behavior of PEO treated Closed-Cell Aluminum foams
P-85 N. Movahedi Synthesis novel Cu-SiC composite foam by LCS method
P-88 G. Chen Preparation and mechanical properties of porous Ti sheet by powder rolling
P-101P. Terriault Influence of boundary conditions on the simulation of architected porous structures
P-102 Y. Alvandi-Tabrizi Finite Element Simulation of Composite Metal Foam Behavior under Quasi-Static and Dynamic Loading Conditions
P-104 J.W. Lee Fabrication of Porous Copper with Alloying Elements by Unidirectional Solidification under Hydrogen Atmosphere
P-105 D.H. Choi A method to modify microlattice for the higher mechanical properties
P-107 M. Saito In-situ observation of foam evolution of liquid and semi-solid A2024 alloy through X-ray radiography
P-108 B.D. Nguyen Compressive properties of L-Shellular: the mechanics and optimal design
P-109 G.Liu A Weaving Technique for Kagome Structure
P-111 S.W. Kim Evaluation of porosity and pore morphology of lotus-type porous copper with the addition of alloying elements



P-113 T. Yoshida Strengthening of porous aluminum alloy with aligned unidirectional pores by ECAE with a back pressure and heat treatment
P-114 M.G. Lee Mechanical analysis of a new ultra-low density metal with micro wall thickness
P-116 C. Davoine Aluminized Superalloy Foams for Transpiration Cooling
P-117 S. Saini Fabrication of Mg foam using Dolomite as the Foaming Agent
P-118 N. V. Pulagara A Study of Manufacturing and Mechanical properties of Aluminium foam using Camphor as a Foaming Agent
P-120 U.A. Atturan Real Structure Deformation Simulation and Mechanical Characterization of A357-xTiB2 (x = 5, 10 wt. %) in-situ Composite Foam
P-122S. Bhogi Effect of magnesium on foaming of aluminum
P-123 A.A. Makarov Application of Metal Foam Endogas Production Catalyst for Low-Carbon Steel Heat Treatment
P-124 A.A. Makarov Application of Regular Cellular Lattice with Combined Porous Structure Produced by Additive Manufacturing
P-125 J. Weise Industrial casting tests for the production of aluminum syntactic foams
P-127 B. Muduli The effect of modification of TiH ₂ by coating and heat-treatment on foaming of aluminium alloys
P-128 U. Teicher Surface assessment of inhomogeneous cellular metals
P-136 B. Song Impact mechanical behaviour of Aluminum foam sandwiches
P-138 M. Billiet Experimental Study of the Effects of Foam Height, Orientation and Radiative Heat Transfer on Buoyancy-Driven Convection
P-139 A. Carcel Failure modes and reliability of sandwich panels with aluminium foam cores
P-140 A. Carcel Aluminium foam shock absorbers for a formula sae vehicle
P-141 T. Hayakawa Density of extruded aluminium foams for additive manufacturing process
P-142 A. Atturan Cell wall characterization of Aluminium alloy in-situ TiB ₂ composite foam
P-143 S. Chen Experimental and computational studies on the thermal behavior of composite metal foams under extreme heat conditions
P-144 I. Kozma In situ observation of aluminum syntactic foams using x-ray micro-ct
P-145 C. Drebenstedt Metal foam lightweight structures bonded with fibre-reinforced plastics
P-149 D. Erdeniz Ni-based Superalloy Micro-lattice Structures
P-160 S. Yiatros Investigation of the structural integrity and stability of steel foam sandwich panels
P-161 J. Grohowski Titanium Ingrowth Surfaces: Production Methods and Performance



P-164 X. Chen Study on bending performance of an aluminum foam composite structure
P-165 A. Inayat Pressure drop modeling in open-cell foams: The role of geometric tortuosity
P-168 Y. Wang Finite Element Simulation of electromagnetic shielding of Aluminum Foam Based on CST Software
P-169 J. Qinglin A thermodynamic model for simultaneous growth of gas and solid phases from gas saturated melt
P-171 C. Jiménez Possibilities for in-situ imaging of metallic and polymeric foams using laboratory liquid metal jet and microfocus X-ray
P-172 M. Paeplow In-situ study of phase transformations and foaming behaviour of AlMg15Cu10 via white beam synchrotron imaging and XRD
P-175 A. Can Kaya X-Ray Microtomography of Microalloying effects on Fe-rich intermetallics of Aluminum Struts
P-178 H. Zhang Heat Transfer Performance of Directional Solidified Gasar Copper Heat Sink
P-179 H. Hao Compression performance and deformation mechanism of magnesium foams prepared by melt foaming method
P-180 X. Chen Compressive performance and energy absorption property of a new aluminum syntactic foam
P-181 L. Bromberg Foam-on-fins heat exchangers for cryogenic application
P-184 V.C. Shunmugasamy Processing of open cell metallic foams: Formability and properties
P-185 Y. Hangai Fabrication and mechanical properties of functionally graded aluminum foam by friction based processing route
P-186 H. Luo Manufacture and application of aluminum foams in China
P-187 Z. Cao Pore structure change of aluminum foam during vacuum foaming
P-189 H. Wang Pore-structure adjustment and mechanical property of porous TiAl intermetallic compounds prepared using titanium hyd
P-190 F. Wang The heat dispersion property of LED radiator made of foamed magnesium alloy
P-192H. Amini On the manufacturing of porous titanium scaffolds used in orthopedic implants and evaluation of their mechanical properties
P-198 H. Amini An investigation of mechanical properties of Al foam produced by nitrate agent and semi-solid method
P-199 H. Amini An electromagnetic shielding behavior of al foam produced by SRP
P-200 J. Bang The analysis of microstructure and mechanical property of Al-Si/SiCp syntactic foams by adding glass microsphere with po
P-201 Y.G. Son Effect of the sintering atmosphere on the filtration property of the 316L stainless steel fabricated by powder metallurgy
P-202 J.J. Oak Characterisation of Titanium Fiber Reinforced Aluminum Matrix Composite Syntactic Foam under Static and Dynamic Loading
P-204 J. Bang The characterization of wear property of Al-Si/SiCp syntactic foams by adding glass microsphere with powder metallurgy u



P-208 B.Y. Hur Properties of mineral fiber board from steel making slag by melt spinning method
P-211 G. Reyes Study of the Mechanical Behavior of Lightweight Multifunctional Hybrid Systems under High Loading Rates: Experimental In
P-215 J.T. Szabo The effect of the processing parameters on titanium foam through powder metallurgy route
P-217 F. Simancik Aluminium Foam for Engine Bracket application
P-218 J. Spanielka Aluminium foam radiator filled with phase change materials (PCM)
P-219 Y.J. Cho Finite element modeling of pore clustering effect in porous metal fabricated by powder metallurgy
P-220 B. Sutherland Metal Foams as a Flame Holder for Radiant Combustion
P-221 J. Kovacik Stabilisation of the molten aluminium foam using powder compacts
P-223 T. Hattori The change of electrical resistivity of np-Au by gas adsorption
P-228 J.A. Rodríguez-Ortiz Development of a novel compaction device for radial graded porosity in biomedical and nuclear applications
P-230 P. Trueba Directional freeze casting to obtain porous titanium: influence of processing conditions
P-235 F. Stergioudi Adjustment of NiTi foam production parameters to tailor their shape memory function
P-240 M. Mosalagae Fabrication of open-cell porous copper by the Lost Carbonate Sintering process applied to Tape Casting
P-241 L.C. Chan Biocompatibility study of Magnesium-based metal sponge
P-242 L. Shifeng Experimental study on the heat transfer performance of titanium fiber porous materials
P-243 J.T. Szabo Preparation of titanium-nickel intermetallic open cell
P-244 J.A. Harris Additively manufactured cellular structures for blast and impact mitigation
P-248 F. Wang Fabrication of nano-porous γ -Al ₂ O ₃ layers on Ti-48Al-6Nb porous alloys
P-249 F. Wang Acid corrosion behavior of Ti-48Al-6Nb porous alloys with different phase skeletons
P-250 J. Martín-De León Nanocellular foams fabrication methods by gas dissolution process
P-251 V. Bernardo Cellular structure, properties and applications of nanoporous materials
P-252 S. Pérez-Tamarit Characterization of the solid phase of cellular materials by means of x-ray μ ct
P-253 M.R.Moradi A study on the effect of volume fraction of the nanoparticles boron carbide (B ₄ C) on Nano-composite Al-B ₄ C foam produced by powder metallurgy-space holder technique
P-254 K. Cwieka High open-porosity materials for Molten Carbonate Fuel Cell application

P-255 T. Wejrzanowski

Design of mechanical properties of open-cell porous materials

P-256 J. Lázaro

Application of High Shearing Processing technology to aluminium foam production

P-257 E.M. Pérez-Soriano

Manufacturing highly porous bodies via Loose Sintering using space holders