
FREEMELT USER

Publications Catalog

Peer-reviewed papers, conference proceedings, and theses published by universities, research institutes, and companies that use Freemelt electron-beam powder bed fusion machines. Each study was carried out independently by its authors. Compiled from public sources and maintained by Freemelt AB.

AT A GLANCE**107**

publications by Freemelt users

USER INSTITUTIONS**59****COUNTRIES****15****YEARS COVERED****2020–
2026**

BY PUBLICATION TYPE

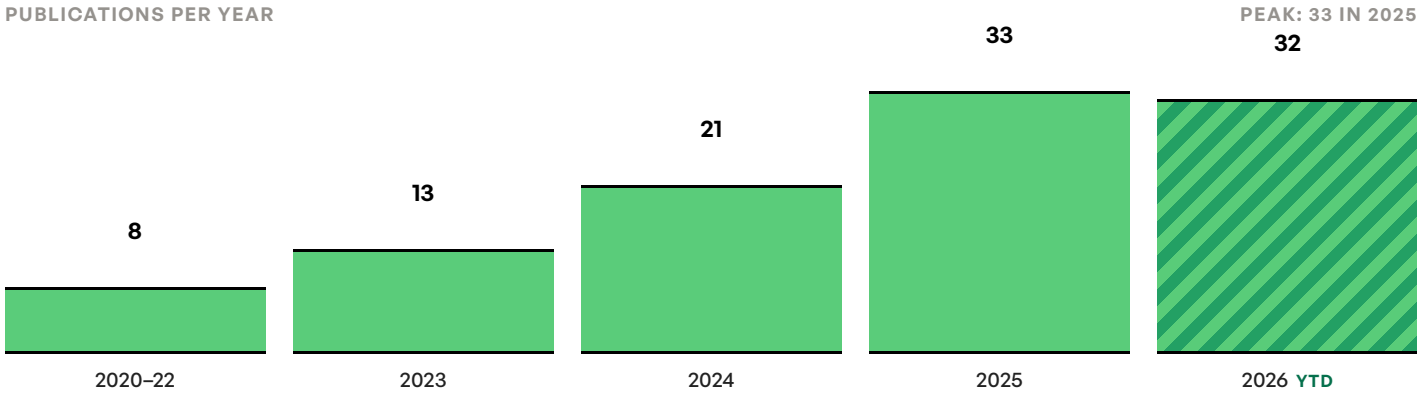
Journal articles	67
Theses	24
Conference proceedings	12
Reviews & preprints	4

BY MACHINE

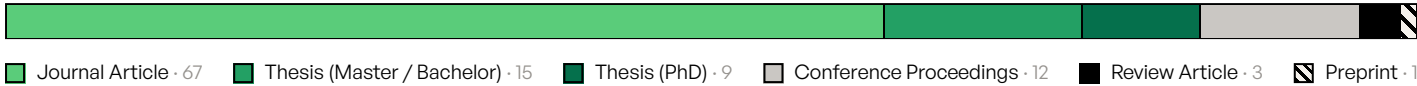
FREEMELT ONE Freemelt ONE	101
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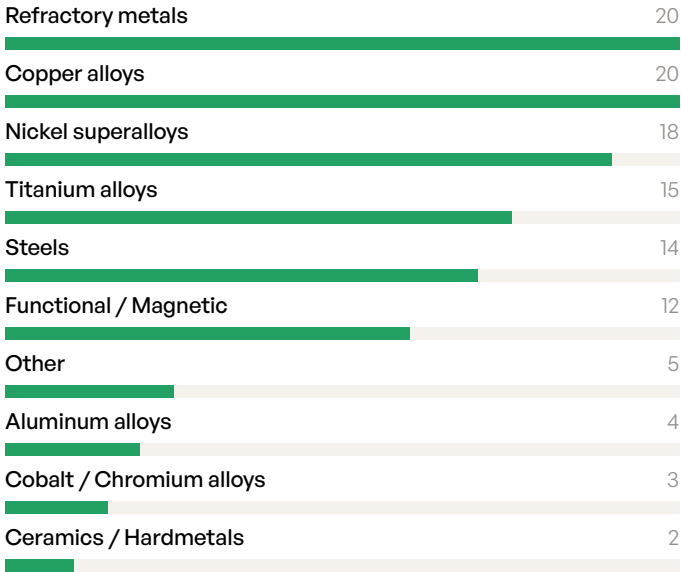
PUBLICATIONS PER YEAR



BY PUBLICATION TYPE



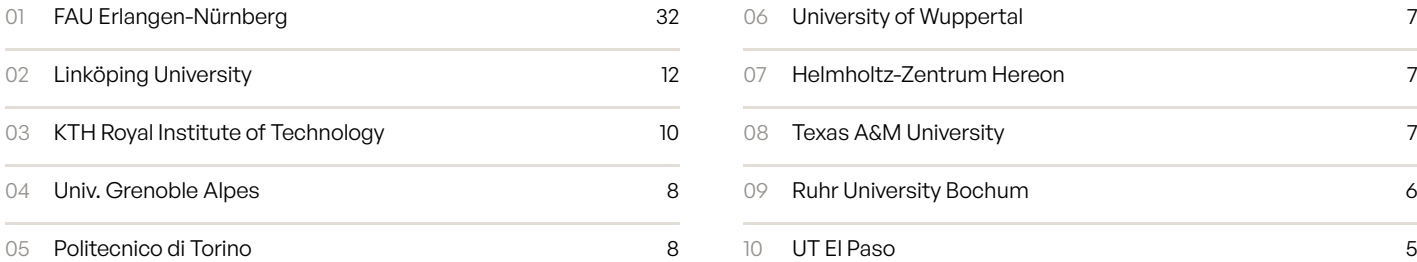
MATERIAL FAMILIES



TOP COUNTRIES

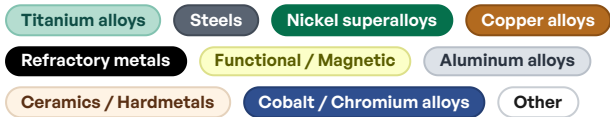


MOST-ACTIVE INSTITUTIONS



LEGEND

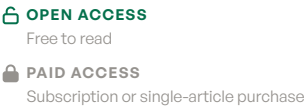
MATERIAL FAMILIES



MACHINES



ACCESS





2026

TITLE · AUTHORS · VENUE	INSTITUTION · COUNTRY	MACHINE · MATERIALS	DOI / LINK
Mechanical properties and fracture behavior of pure tungsten produced by electron beam powder bed fusion – Columnar and near single-crystalline microstructures JOURNAL · Graf, G. et al. · <i>International Journal of Refractory Metals and Hard Materials</i>	KTH Royal Institute of Technology Sweden Freemelt AB	FREEMELT ONE W	PAID ACCESS 10.1016/j.ijrmhm.2026.108201 ↗
Structure-borne acoustic sensing with a recoater blade for in-situ protrusion detection and localization in powder bed fusion JOURNAL · Xu, J.; Wennersten, K.; Moverare, J.J. · <i>Additive Manufacturing Letters</i>	Linköping University Sweden	FREEMELT ONE Pure Cu	OPEN ACCESS 10.1016/j.addlet.2026.100431 ↗
Printing Cr-Ni binary eutectic microstructures via in situ alloying in electron beam powder bed fusion JOURNAL · Tobah, M. et al. · <i>Journal of Alloys and Compounds</i>	University of Michigan United States	FREEMELT ONE Cr-Ni	PAID ACCESS 10.1016/j.jallcom.2026.191776 ↗
Defect Characterisation in Additive Manufacturing of Pure Tungsten - In Process and Post Process Monitoring CONFERENCE · Sidambe, A.T.; Black, K. · <i>Tungsten, Refractory & Hardmaterials 11 – Proceedings</i>	University of Liverpool United Kingdom	FREEMELT ONE W	OPEN ACCESS livrepository.liverpool.ac.uk/3204379/ ↗
Oxygen uptake, reuse stability, and recycling of copper powder in powder bed fusion JOURNAL · Ortmann, R. et al. · <i>Materials & Design</i>	Ruhr University Bochum Germany University of Wuppertal; TU Dortmund University	FREEMELT ONE Pure Cu	OPEN ACCESS 10.1016/j.matdes.2026.117039 ↗
Scan strategy as a microstructure design variable in electron beam powder bed fusion of Inconel 718 REVIEW · You, H. et al. · <i>Materials & Design</i>	Texas A&M University United States	FREEMELT ONE IN718	OPEN ACCESS 10.1016/j.matdes.2026.117045 ↗
Open-Source Path Planning for Spot, Line, and Contour Strategies in E-PBF Additive Manufacturing CONFERENCE · Wiberg, A. et al. · <i>Materials Research Proceedings</i>	Linköping University Sweden	FREEMELT ONE —	OPEN ACCESS mrforum.com/product/9781644904251-2020/ ↗
Characteristics of Immiscible Alloy Systems Using Advanced Manufacturing Processes and Spatial Statistics CONFERENCE · Moody, K. et al. · <i>Proceedings of the 11th International Symposium on Superalloy 718 and Derivatives</i>	NC State University United States University of North Carolina at Chapel Hill	FREEMELT ONE CoCrMo-Cu	PAID ACCESS 10.1007/978-3-032-35176-0_16 ↗
Spot Melting of Ultra-Dense Tungsten via Electron Beam Powder Bed Fusion: A Reproducible Fabrication Strategy JOURNAL · Truong, T.D. et al. · <i>Additive Manufacturing</i>	Texas A&M University United States Freemelt AB	FREEMELT ONE W	OPEN ACCESS 10.1016/j.addma.2026.105357 ↗
Additive Manufacturing of Titanium-Zirconium-Molybdenum Alloy Using Electron Beam Powder Bed Fusion CONFERENCE · Nabil, S.T. et al. · <i>Solid Freeform Fabrication Symposium Proceedings</i>	UT El Paso United States Los Alamos National Laboratory	FREEMELT ONE TZM	OPEN ACCESS www.osti.gov/biblio/3427066 ↗
U-SAMNet: Uncertainty-Aware Self-Attention Multi-Task Network for Pore Detection in Additive Manufacturing JOURNAL · Roy, P. et al. · <i>Applied Sciences</i>	Texas A&M University United States Prairie View A&M University; Kumoh National Institute of Technology	FREEMELT ONE —	OPEN ACCESS 10.3390/app16157506 ↗



2026

TITLE · AUTHORS · VENUE	INSTITUTION · COUNTRY	MACHINE · MATERIALS	DOI / LINK
Microstructure Modification of Additively Manufactured Mo-9Si-8B by Annealing and Its Effects on High-Temperature Mechanical Properties JOURNAL · Schmidt, C. et al. · <i>Advanced Engineering Materials</i>	Otto-von-Guericke University Magdeburg Germany FAU Erlangen-Nürnberg	FREEMELT ONE Mo-9Si-8B	OPEN ACCESS 10.1002/adem.71137 ↗
Thermo-mechanical grain structure and texture tailoring of Mo-9Si-8B by electron beam powder bed fusion JOURNAL · Chen, Y. et al. · <i>Materials & Design</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Mo-9Si-8B	OPEN ACCESS 10.1016/j.matdes.2026.116698 ↗
Melting feasibility of oxide dispersion-strengthened tungsten W-Y2O3 via electron beam powder bed fusion JOURNAL · Truong, T.D. et al. · <i>International Journal of Refractory Metals and Hard Materials</i>	Texas A&M University United States	FREEMELT ONE W-Y2O3	OPEN ACCESS 10.1016/j.ijrmhm.2026.108020 ↗
Additive Manufacturing of Pure Tungsten via Electron Beam Powder Bed Fusion: Toward Fusion-Ready Fabrication REVIEW · Truong, T.D.; Taheri Andani, M. · <i>Materials & Design</i>	Texas A&M University United States	FREEMELT ONE W	OPEN ACCESS 10.1016/j.matdes.2026.116536 ↗
Strengthening and interface-mediated plastic co-deformation in an ultrafine Cr-Ni eutectic: A nanomechanical investigation PREPRINT · Ghosh, A. et al. · <i>arXiv</i>	University of Michigan United States University of Nebraska-Lincoln	FREEMELT ONE Cr-Ni	OPEN ACCESS arxiv.org/abs/2607.00906 ↗
Influence of Scan Strategies in Electron Beam Powder Bed Fusion on Solidification, Microstructure, and High-Temperature Compressive Properties of γ-Strengthened Inconel 738LC JOURNAL · Petenati, J.N. et al. · <i>Advanced Engineering Materials</i>	University of Wuppertal Germany Otto-von-Guericke University Magdeburg; Technical University of Darmstadt	FREEMELT ONE IN738	OPEN ACCESS 10.1002/adem.71049 ↗
Investigation of the in-situ formation of a Mo-Mo3Si alloy directly via EB-PBF process JOURNAL · Di Sturco, S. et al. · <i>International Journal of Refractory Metals and Hard Materials</i>	Politecnico di Torino Italy Trinity College Dublin	FREEMELT ONE Mo-Si silicides	PAID ACCESS 10.1016/j.ijrmhm.2026.107911 ↗
Geometry and Surface Feature Evaluation in E-PBF Process Using In-Operando Electron Emission Signal JOURNAL · Alfaifi, A. et al. · <i>Materials</i>	Texas A&M University United States	FREEMELT ONE Ti-6Al-4V	OPEN ACCESS 10.3390/ma19112362 ↗
Auxetic-Cellular 4D-Nitinol Manufactured via Electron Beam Powder Bed Fusion PHD THESIS · Fink, A.	FAU Erlangen-Nürnberg Germany TU Dortmund University	FREEMELT ONE NiTi	OPEN ACCESS 10.25593/open-fau-3228 ↗
Influence of the beam power on the density of pure copper samples in PBF-EB/M using a spot melting strategy JOURNAL · Oberkönig, H. et al. · <i>Progress in Additive Manufacturing</i>	Ruhr University Bochum Germany	FREEMELT ONE Pure Cu	OPEN ACCESS 10.1007/s40964-026-01739-z ↗
In-situ Process Monitoring and Defect Detection for PBF-EB using NIR Thermography MASTER'S THESIS · Lemonis, T. · <i>Degree project (MSc Robotics), University West</i>	University West Sweden Freemelt AB	FREEMELT ONE W	OPEN ACCESS www.diva-portal.org/smash/record.jsf?pid=diva2:2090022 ↗



2026

TITLE · AUTHORS · VENUE	INSTITUTION · COUNTRY	MACHINE · MATERIALS	DOI / LINK
Defect Detection in PBF-EB using Electron Emission Signals and Imaging MASTER'S THESIS · Otamiri, H.C. · <i>Degree project (MSc Robotics and Automation), University West</i>	University West Sweden Freemelt AB	FREEMELT ONE W	OPEN ACCESS www.diva-portal.org/smash/record.jsf?pid=diva2:2090006
High-power electron beam powder bed fusion manufacturing of pure tungsten JOURNAL · Abdul Baseer, R. et al. · <i>Progress in Additive Manufacturing</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE W	OPEN ACCESS 10.1007/s40964-026-01673-0
Columnar to Equiaxed Transition in Electron Beam Powder Bed Fusion (EB-PBF) Characterized Through Microstructure Analytics JOURNAL · Thome, P. et al. · <i>Advanced Engineering Materials</i>	UT El Paso United States University of Arizona	FREEMELT ONE IN718	PAID ACCESS 10.1002/adem.202503160
Real-time tracking of the solidification of tool steel in electron beam powder bed fusion with high-energy X-rays JOURNAL · König, H.H. et al. · <i>Additive Manufacturing</i>	FAU Erlangen-Nürnberg Germany KTH Royal Institute of Technology; DESY; Helmholtz-Zentrum Hereon	MINIMELT Tool steel	PAID ACCESS 10.1016/j.addma.2026.105159
Microstructure and Corrosion Characteristics of IN 625 Coating on Additively Manufactured 316L Stainless Steel in As-Fabricated Condition JOURNAL · Tarafder, P. et al. · <i>Materials</i>	Linköping University Sweden Kwara State University	FREEMELT ONE 316L	OPEN ACCESS 10.3390/ma19040812
Data-Driven Modeling and Real-time Monitoring for Quality Assurance in EB-PBF Metal Additive Manufacturing using Electron Emission Data PHD THESIS · Gbadamosi-Adeniyi, T.	NC State University United States	FREEMELT ONE —	OPEN ACCESS www.proquest.com/openview/69ae822745706f4546ed278dea372e50
High-temperature additive manufacturing of Nd-Fe-B by powder bed fusion using an electron beam JOURNAL · Wilms, M.B. et al. · <i>Progress in Additive Manufacturing</i>	University of Wuppertal Germany University of Duisburg-Essen; Karlstad University	FREEMELT ONE Nd-Fe-B	OPEN ACCESS 10.1007/s40964-026-01561-7
A comprehensive in-situ monitoring framework for pore and uneven surface detection in electron beam powder bed fusion via electron-optical imaging JOURNAL · Lee, K. et al. · <i>Journal of Manufacturing Processes</i>	Texas A&M University United States Prairie View A&M University	FREEMELT ONE Ti-6Al-4V	PAID ACCESS 10.1016/j.jmapro.2025.11.071
Time-resolved imaging of electron beam powder bed fusion using an X-ray microscope optimized for white beam radiation JOURNAL · Bidola, P.M. et al. · <i>Journal of Synchrotron Radiation</i>	Helmholtz-Zentrum Hereon Germany FAU Erlangen-Nürnberg; KTH Royal Institute of Technology	MINIMELT CMSX-4	OPEN ACCESS 10.1107/S1600577525010057
Enhanced Productivity in Electron Beam-Based Powder Bed Fusion: A Study of Thick Layers in Ti-6Al-4V for Implant Manufacturing MASTER'S THESIS · Dillmann, A.	Uppsala University Sweden Mid Sweden University	FREEMELT ONE Ti-6Al-4V	OPEN ACCESS uu.diva-portal.org/smash/record.jsf?pid=diva2:2032512



2025

TITLE · AUTHORS · VENUE	INSTITUTION · COUNTRY	MACHINE · MATERIALS	DOI / LINK
Low-Cost, High-Throughput Magnetic Characterization Tool for Irregular Soft Magnetic Specimens JOURNAL · Colton, S. et al. · <i>IEEE Transactions on Instrumentation and Measurement</i>	Georgia Institute of Technology United States Sandia National Laboratories	FREEMELT ONE Permalloy	PAID ACCESS 10.1109/tim.2025.3644550
Operando electron optical monitoring in electron beam powder bed fusion: characteristic signatures as fault indicator JOURNAL · Ye, J. et al. · <i>Progress in Additive Manufacturing</i>	FAU Erlangen-Nürnberg Germany TU Dortmund University	FREEMELT ONE Ti-6Al-4V	OPEN ACCESS 10.1007/s40964-025-01459-w
Investigation of the Smoke Phenomenon in Electron Beam Powder Bed Fusion PHD THESIS · Ye, J. · <i>Dissertation, Friedrich-Alexander-Universität Erlangen-Nürnberg</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Ti-6Al-4V CMSX-4	OPEN ACCESS cris.fau.de/publications/353778686
Feasibility Study of the Electron Beam Powder Bed Fusion of Molybdenum MASTER'S THESIS · Ancaza, A.	Politecnico di Torino Italy	FREEMELT ONE Mo	OPEN ACCESS webthesis.biblio.polito.it/38021/
Evaluation of Different Dynamic Point Melt Scanning Strategies on Microstructure Evolution for IN718 Bulk Parts Fabricated by EB-PBF JOURNAL · Nabil, S.T. et al. · <i>Journal of Materials Research and Technology</i>	UT El Paso United States University of Arizona	FREEMELT ONE IN718	OPEN ACCESS 10.1016/j.jmrt.2025.11.074
Investigating the microstructure of additively manufactured tungsten parts produced by electron beam powder bed fusion process JOURNAL · Zavala-Arredondo, M. et al. · <i>Nuclear Materials and Energy</i>	UKAEA United Kingdom Freemelt AB; University of Sheffield; University of Southampton; Linköping University; Max Planck Institute for Plasma Physics	FREEMELT ONE W	OPEN ACCESS 10.1016/j.nme.2025.102011
The effect of scanning strategy on grain development of MAR-M247 in electron beam powder bed fusion JOURNAL · Lu, R.-H.; Saptarshi, S.; Harrysson, O. · <i>Progress in Additive Manufacturing</i>	NC State University United States	FREEMELT ONE MAR-M247	OPEN ACCESS 10.1007/s40964-025-01376-y
In situ recrystallization of pure Cu during electron beam powder bed fusion JOURNAL · Margueret, A.; Lhuissier, P.; Martin, G. · <i>Additive Manufacturing Letters</i>	Univ. Grenoble Alpes France	FREEMELT ONE Pure Cu	OPEN ACCESS 10.1016/j.addlet.2025.100329
Powder bed fusion of pure copper using an electron beam: a comparative study on the material properties obtained using vector- and spot-based exposure JOURNAL · Ortmann, R. et al. · <i>Progress in Additive Manufacturing</i>	Ruhr University Bochum Germany Freemelt AB	FREEMELT ONE Pure Cu	OPEN ACCESS 10.1007/s40964-025-01344-6
Microstructure and thermal stability of oxidized copper produced by electron beam powder bed fusion JOURNAL · Tarafder, P. et al. · <i>Journal of Materials Research and Technology</i>	Linköping University Sweden	FREEMELT ONE Pure Cu	OPEN ACCESS 10.1016/j.jmrt.2025.09.194
PBF-EB process development of chemically reduced tungsten via a dual-gradient parameter approach utilizing the backscatter signal JOURNAL · Sjöström, W. et al. · <i>Progress in Additive Manufacturing</i>	Mid Sweden University Sweden Universitat Politècnica de Catalunya; Freemelt AB; Linköping University	FREEMELT ONE W	OPEN ACCESS 10.1007/s40964-025-01312-0



2025

TITLE · AUTHORS · VENUE	INSTITUTION · COUNTRY	MACHINE · MATERIALS	DOI / LINK
In-situ synchrotron imaging of powder consolidation and melt pool dynamics in electron beam powder bed fusion JOURNAL · Semjatov, N. et al. · Additive Manufacturing	FAU Erlangen-Nürnberg Germany KTH Royal Institute of Technology; Helmholtz-Zentrum Hereon	MINIMELT CMSX-4	OPEN ACCESS 10.1016/j.addma.2025.104943
Simulation-driven development of in-situ alloying Cu-25Cr by electron beam powder bed fusion JOURNAL · Scherr, R. et al. · Additive Manufacturing	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Cu-25Cr	OPEN ACCESS 10.1016/j.addma.2025.104874
Trajectory Optimization for Spatial Microstructure Control in Electron Beam Metal Additive Manufacturing CONFERENCE · Khrenov, M. et al. · Proceedings of the American Control Conference (ACC 2025)	Carnegie Mellon University United States	FREEMELT ONE Steel	PAID ACCESS 10.23919/acc63710.2025.11107816
Cu-25Cr composites processed by in situ alloying in electron beam powder bed fusion JOURNAL · Varoto, L. et al. · Additive Manufacturing	Schneider Electric France Univ. Grenoble Alpes; Univ. Bretagne Sud	FREEMELT ONE Cu-25Cr	OPEN ACCESS 10.1016/j.addma.2025.104869
Electron beam powder bed fusion process monitoring by in-melt electron analysis JOURNAL · Xu, J. et al. · Additive Manufacturing	Linköping University Sweden	FREEMELT ONE 316L	OPEN ACCESS 10.1016/j.addma.2025.104858
Segmentation of Electron Beam Powder Bed Fusion Defects in Backscattered Electron Images MASTER'S THESIS · Palm, Z. · Mid Sweden University (Student Thesis)	Mid Sweden University Sweden Freemelt AB	FREEMELT ONE W	OPEN ACCESS www.diva-portal.org/smash/record.jsf?pid=diva2:1980668
Investigation of the porosity of parts manufactured by electron beam melting using scanning photothermal radiometry JOURNAL · Mateos-Canseco, A. et al. · Review of Scientific Instruments	Univ. Bordeaux (I2M) France Univ. Grenoble Alpes	FREEMELT ONE Ti-6Al-4V	PAID ACCESS 10.1063/5.0272083
Development of a beam verification process for Electron Beam Powder Bed Fusion MASTER'S THESIS · Favier, C.	Mid Sweden University Sweden	FREEMELT ONE —	OPEN ACCESS www.diva-portal.org/smash/record.jsf?pid=diva2:1980722
Real-time tracking of additive manufacturing with high-energy X-ray techniques PHD THESIS · König, H.H.	KTH Royal Institute of Technology Sweden	MINIMELT Tool steel CMSX-4	OPEN ACCESS kth.diva-portal.org/smash/record.jsf?pid=diva2:1957938
Dense and crack-free pure tungsten manufactured by Electron Beam Powder Bed Fusion CONFERENCE · Balachandramurthi, A.R.; Wright, J.; Ljungblad, U. · 21st Plansee Seminar 2025 Proceedings	Freemelt AB Sweden	FREEMELT ONE W	—
Single crystal twisting in additive manufacturing JOURNAL · Bäreis, J.; Wahlmann, B.; Körner, C. · Progress in Additive Manufacturing	FAU Erlangen-Nürnberg Germany	FREEMELT ONE CMSX-4	OPEN ACCESS 10.1007/s40964-025-01158-6
Rapid processing window development of Mo-Si-B alloy for electron beam powder bed fusion JOURNAL · Chen, Y. et al. · Progress in Additive Manufacturing	FAU Erlangen-Nürnberg Germany Otto-von-Guericke University Magdeburg	FREEMELT ONE Mo-9Si-8B	OPEN ACCESS 10.1007/s40964-025-01119-z



2025

TITLE · AUTHORS · VENUE	INSTITUTION · COUNTRY	MACHINE · MATERIALS	DOI / LINK
Strategies for the development of locally controlled metallic materials through additive manufacturing Original: <i>Stratégies d'élaboration de matériaux métalliques à contrôle local par fabrication additive</i> PHD THESIS · Margueret, A. · <i>Thèse de doctorat, Université Grenoble Alpes</i>	Univ. Grenoble Alpes France	FREEMELT ONE Ti-6Al-4V · Pure Cu	OPEN ACCESS 10.70675/1be934a0z ↗ 12a6z49c5zb00dz3aa 5696acdd2
Assessing the effect of scan strategies on the structure-property relationship in electron beam powder bed fusion processed 316L stainless steel JOURNAL · Tarafder, P. et al. · <i>Materials & Design</i>	Linköping University Sweden	FREEMELT ONE 316L	OPEN ACCESS 10.1016/j.matdes.2 ↗ 025.113837
Investigation and Control of Smoke Phenomenon in Electron Beam Powder Bed Fusion of a Novel γ-TiAl alloy JOURNAL · Jennings, R. et al. · <i>Journal of the Japan Society of Powder and Powder Metallurgy</i>	IHI Corporation United Kingdom Swansea University; Tohoku University	FREEMELT ONE γ -TiAl	OPEN ACCESS 10.2497/jjspm.14D- ↗ T20-02
Impact of Process Variables on Solidification and Microstructural Evolution of Pure Copper Processed via Electron Beam Powder Bed Fusion Original: <i>Impacto Das Variáveis de Processo Na Solidificação e Evolução Microestrutural de Cobre Puro Processado via Fusão em Leito de Pó por Feixe de Elétrons</i> BACHELOR'S THESIS · Carneiro, G.B.	Universidade Federal de São Carlos (UFSCar) Brazil Univ. Grenoble Alpes	FREEMELT ONE Pure Cu	OPEN ACCESS repositorio.ufsca ↗ r.br/bitstreams/76 622157-1c6c-49e2-b 027-26d40704e06f/d ownload
Understanding the processability, microstructure, and mechanical properties of molybdenum processed by electron beam powder bed fusion JOURNAL · Di Sturco, S. et al. · <i>International Journal of Refractory Metals and Hard Materials</i>	Politecnico di Torino Italy	FREEMELT ONE Mo	PAID ACCESS 10.1016/j.ijrmhm.2 ↗ 025.107091
Microstructure formation of a new Al-4Mn-3Ni-2Cu-1Zr aluminium alloy during electron beam powder bed fusion JOURNAL · Varoto, L. et al. · <i>Materialia</i>	Univ. Grenoble Alpes France Constellium Technology Center	FREEMELT ONE Al-4Mn-3Ni-2Cu-1Zr	OPEN ACCESS 10.1016/j.mtla.202 ↗ 5.102344
ADDOPT: An Additive Manufacturing Optimal Control Framework Demonstrated in Minimizing Layer-Level Thermal Variance in Electron Beam Powder Bed Fusion JOURNAL · Khrenov, M.; Frieden Templeton, W.; Prabha Narra, S. · <i>Journal of Manufacturing Science and Engineering</i>	Carnegie Mellon University United States	FREEMELT ONE 316L	PAID ACCESS 10.1115/1.4067325 ↗
Powder Bed Fusion - Electron Beam of an oxygen-compatible β-TNTZ (Ti-35.5Nb-2Ta-3Zr) alloy: Feasibility and Material Evaluation JOURNAL · Rittinghaus, S.-K. et al. · <i>European Journal of Materials</i>	University of Wuppertal Germany Chalmers University of Technology; Helmholtz-Zentrum Hereon; GfE Metalle und Materialien GmbH; Forschungszentrum Jülich	FREEMELT ONE β -TNTZ	OPEN ACCESS 10.1080/26889277.2 ↗ 024.2448120
Additive Manufacturing Melt Pool Physics Understood Through the Lens of Two-Color Thermal Imaging PHD THESIS · Myers, A.J.	Carnegie Mellon University United States	FREEMELT ONE 316L	OPEN ACCESS 10.1184/R1/3028871 ↗ 5
Rapid Process Parameter Development for SS316L on the Freemelt ONE Open Architecture Electron Beam Powder Bed Fusion Machine CONFERENCE · Bostan, B. et al. · <i>Solid Freeform Fabrication Symposium Proceedings</i>	University of Pittsburgh United States Carnegie Mellon University	FREEMELT ONE 316L	OPEN ACCESS utw10945.utweb.ute ↗ xas.edu/sites/defa ult/files/2024/10 5%20Process%20Para meter%20Developmen t%20for%20SS316L%2 0on%20th.pdf



2024

TITLE · AUTHORS · VENUE	INSTITUTION · COUNTRY	MACHINE · MATERIALS	DOI / LINK
Powder bed fusion of pure copper using an electron beam – achieving high conductivity by real-time process monitoring and control CONFERENCE · Ortmann, R. et al. · <i>MATEC Web of Conferences</i>	Ruhr University Bochum Germany University of Wuppertal	FREEMELT ONE Pure Cu	OPEN ACCESS 10.1051/mateconf/202440605001
Thermo-mechanical Study on Auxetic Shape Memory Periodic Open Cellular Structures—Part II: Mechanical and Shape Memory Properties JOURNAL · Fink, A. et al. · <i>Advanced Engineering Materials</i>	FAU Erlangen-Nürnberg Germany TU Dortmund University	FREEMELT ONE NiTi Ti-6Al-4V	OPEN ACCESS 10.1002/adem.202401310
CuCrZr alloy obtained via electron-beam powder bed fusion: Microstructural insights and precipitation behaviour JOURNAL · Felicioni, S. et al. · <i>Materials Characterization</i>	Politecnico di Torino Italy	FREEMELT ONE CuCrZr	OPEN ACCESS 10.1016/j.matchar.2024.114559
Electron Beam Additive Manufacturing of SS316L with a Stochastic Scan Strategy: Microstructure, Texture Evolution, and Mechanical Properties JOURNAL · Chaithanya Kumar, K.N. et al. · <i>Metals</i>	University of North Texas United States	FREEMELT ONE 316L	OPEN ACCESS 10.3390/met14111278
Microstructure Refinement of Bulk Inconel 718 Parts During Fabrication with EB-PBF Using Scanning Strategies: Transition from Bidirectional-Raster to Stochastic Point-Based Melting JOURNAL · Nabil, S.T. et al. · <i>Journal of Manufacturing and Materials Processing</i>	UT El Paso United States University of Arizona	FREEMELT ONE IN718	OPEN ACCESS 10.3390/jmmp8060241
Study and characterization of a TiAl alloy processed via Electron Beam Powder Bed Fusion Original: Studio e caratterizzazione di una lega TiAl processata tramite Electron Beam Powder Bed Fusion MASTER'S THESIS · Moccia, M.	Politecnico di Torino Italy	FREEMELT ONE γ-TiAl	OPEN ACCESS webthesis.biblio.polito.it/id/eprint/33293
Microstructure Evolutions Induced by Electron Beam Melting of a Sintered Cu-25Cr Composite JOURNAL · Varoto, L. et al. · <i>Materialia</i>	Univ. Grenoble Alpes France ESRF – The European Synchrotron; Schneider Electric	FREEMELT ONE Cu-25Cr	OPEN ACCESS 10.1016/j.mtla.2024.102262
Microhardness and Microstructural Evolution of Additive Manufactured GRCo-42 by Electron Beam Powder Bed Fusion CONFERENCE · Thangamani, G. et al. · <i>Euro PM2024 Proceedings</i>	Politecnico di Torino Italy METALPINE	FREEMELT ONE GRCo-42	OPEN ACCESS 10.59499/EP246281101
A Characterization of Molybdenum Alloys for Electron Beam Powder Bed Fusion MASTER'S THESIS · Himelstein, V.R.	NC State University United States	FREEMELT ONE Mo Mo-9Si-8B	OPEN ACCESS www.proquest.com/openview/b481def90b1cc80e8082c2d696230fa9/1
Rethinking Cu-Cr electrical contact microstructures: From manufacturing to properties CONFERENCE · Varoto, L.; Roure, S.; Papillon, A. · <i>2024 IEEE 69th Holm Conference on Electrical Contacts (HOLM)</i>	Schneider Electric France Univ. Grenoble Alpes	FREEMELT ONE Cu-Cr	PAID ACCESS 10.1109/HOLM56222.2024.10768351
In-melt electron analysis to accelerate process exploration of ceramics: Electron beam melting of TiB2 JOURNAL · Xu, J. et al. · <i>Materialia</i>	Linköping University Sweden University of Wuppertal	FREEMELT ONE TiB2	OPEN ACCESS 10.1016/j.mtla.2024.102243



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TITLE · AUTHORS · VENUE	INSTITUTION · COUNTRY	MACHINE · MATERIALS	DOI / LINK
Correlating outgassing and smoke phenomenon in electron beam powder bed fusion of Ti6Al4V using a residual gas analyzer JOURNAL · Ye, J.; Chen, T.; Körner, C. · <i>Progress in Additive Manufacturing</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Ti-6Al-4V	OPEN ACCESS 10.1007/s40964-024-00745-3
Comparative Study of Hydrogen Embrittlement on EBM Inconel 718 As-Built and HIPed Specimens MASTER'S THESIS · Díaz, J.C.	UT El Paso United States	FREEMELT ONE IN718	OPEN ACCESS scholarworks.utep.edu/open_etd/4174
Multiple interaction electron beam powder bed fusion for controlling melt pool dynamics and improving surface quality JOURNAL · Semjatov, N.; Wahlmann, B.; Körner, C. · <i>Additive Manufacturing</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE CMSX-4	OPEN ACCESS 10.1016/j.addma.2024.104316
Optimization of additive manufacturing processes for copper and its alloys PHD THESIS · Vanzetti, M.	Politecnico di Torino Italy	FREEMELT ONE Pure Cu	OPEN ACCESS iris.polito.it/handle/11583/2990839
Revealing the Mechanisms of Smoke during Electron Beam-Powder Bed Fusion by High-Speed Synchrotron Radiography JOURNAL · Ye, J. et al. · <i>Journal of Manufacturing and Materials Processing</i>	FAU Erlangen-Nürnberg Germany Helmholtz-Zentrum Hereon; KTH Royal Institute of Technology	FREEMELT ONE Ti-6Al-4V CMSX-4	OPEN ACCESS 10.3390/jmmp8030103
Anisotropic Superelastic and Shape Memory Effect of Nitinol Manufactured by Electron Beam Powder Bed Fusion JOURNAL · Fink, A.; Wahlmann, B.; Körner, C. · <i>Advanced Materials & Sustainable Manufacturing</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE NiTi	OPEN ACCESS 10.35534/amsm.2024.10004
Additive Manufacturing of TiC/Steel Composites Using Electron Beam Melting and In Situ Infiltration JOURNAL · Chen, Y. et al. · <i>Advanced Engineering Materials</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Steel	OPEN ACCESS 10.1002/adem.202301313
Electron beam-based additive manufacturing of Fe-Si soft magnetic materials PHD THESIS · Yang, J.	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Fe-Si	OPEN ACCESS 10.25593/open-fau-555
Feasibility of Melting NbC Using Electron Beam Powder Bed Fusion JOURNAL · Wennersten, K. et al. · <i>Advanced Engineering Materials</i>	Linköping University Sweden TekSiC AB	FREEMELT ONE NbC	OPEN ACCESS 10.1002/adem.202301388
Powder Bed Fusion of AISi10Mg Using an Electron Beam: Processability, Microstructure and Mechanical Properties JOURNAL · Ortmann, R. et al. · <i>RTE Journal</i>	Ruhr University Bochum Germany	FREEMELT ONE AISi10Mg	OPEN ACCESS 10.58134/fh-aachen-rte_2024_001

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MiniMelt: An instrument for real-time tracking of electron beam additive manufacturing using synchrotron x-ray techniques JOURNAL · König, H.H. et al. · <i>Review of Scientific Instruments</i>	KTH Royal Institute of Technology Sweden FAU Erlangen-Nürnberg; Helmholtz-Zentrum Hereon; DESY; Freemelt AB	MINIMELT Tool steel CMSX-4	OPEN ACCESS 10.1063/5.0177255



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Correlation Between Structural Features and Magnetic Performance of Fe93.5Si6.5 (wt.%) Soft Magnetic Materials JOURNAL · Yang, J. et al. · <i>Advanced Functional Materials</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Fe-Si	OPEN ACCESS 10.1002/adfm.202308194
Investigation of the influence of line energy distribution on surface quality during PBF-EB of CMSX-4 thin walls MASTER'S THESIS · Ribas i Oliveras, À.	Universitat Politècnica de Catalunya Spain FAU Erlangen-Nürnberg	FREEMELT ONE CMSX-4	OPEN ACCESS hdl.handle.net/2117/403785
A High-Speed X-Ray Radiography Setup for In-Situ Electron Beam Powder Bed Fusion at PETRA III CONFERENCE · Bidola, P.M. et al. · <i>Proceedings of SPIE</i>	Helmholtz-Zentrum Hereon Germany KTH Royal Institute of Technology; FAU Erlangen-Nürnberg	MINIMELT CMSX-4	PAID ACCESS 10.1117/12.2678913
Optimization of Process Parameters for CuCrZr Alloy Manufactured by Electron Beam Powder Bed Fusion Technology CONFERENCE · Felicioni, S. et al. · <i>Euro PM2023 Proceedings</i>	Politecnico di Torino Italy	FREEMELT ONE CuCrZr	OPEN ACCESS 10.59499/EP235762626
Effect of powder particle size distribution and contouring on build quality in electron beam powder bed fusion of a medium-C hot-work tool steel JOURNAL · Sullivan, E.M. et al. · <i>The International Journal of Advanced Manufacturing Technology</i>	KTH Royal Institute of Technology Sweden	FREEMELT ONE Tool steel	OPEN ACCESS 10.1007/s00170-023-11944-7
Development of a High-Throughput Magnetic Characterization Technique and its Application to Process Parameter Development for Electron Beam Powder Bed Fusion of Permalloy MASTER'S THESIS · Colton, S.; Stebner, A. (advisor)	Georgia Institute of Technology United States	FREEMELT ONE Permalloy	OPEN ACCESS www.proquest.com/openview/24a40f8bcb bdf07251c6022b2e811400/1?pq-origsite=gscholar&cbl=18750&diss=y
Comparative Insights into Microstructure and Magnetism of Ni-Mn-Sn Heusler Alloys Manufactured by Electron Beam and Laser Beam Powder Bed Fusion JOURNAL · Rittinghaus, S.K. et al. · <i>Additive Manufacturing Letters</i>	University of Wuppertal Germany University of Duisburg-Essen; Technical University of Darmstadt	FREEMELT ONE Ni-Mn-Sn	OPEN ACCESS 10.1016/j.addlet.2023.100159
Structure Design of Soft Magnetic Materials Using Electron-Beam-Based Additive Manufacturing JOURNAL · Yang, J.; Fu, Z.; Körner, C. · <i>Advanced Materials</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Fe-Si	OPEN ACCESS 10.1002/adma.20230837
Functional properties and shape memory effect of Nitinol manufactured via electron beam powder bed fusion JOURNAL · Fink, A.; Fu, Z.; Körner, C. · <i>Materialia</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE NiTi	OPEN ACCESS 10.1016/j.mtla.2023.101823
Process Characterisation of an Additive Manufacturing Equipment: An Analysis of the Effect of Electron Beam Powder Bed Fusion Process Parameters on the Melt Pool Geometry and Microstructure of Ti-6Al-4V MASTER'S THESIS · Ljusell, I.	Linköping University Sweden	FREEMELT ONE Ti-6Al-4V	OPEN ACCESS liu.diva-portal.org/smash/record.jsf?pid=diva2:1808699
Aluminium alloy development for Additive Manufacturing PHD THESIS · Leijon, F.	Linköping University Sweden Norsk Hydro	FREEMELT ONE Al-Sr	OPEN ACCESS 10.3384/9789180751896



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Electron-optical observation of smoke evolution during electron beam powder bed fusion JOURNAL · Ye, J. et al. · <i>Additive Manufacturing</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Ti-6Al-4V	OPEN ACCESS 10.1016/j.addma.2023.103578

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Additive Manufacturing with Metallic Powder Materials: Development of a Strategic Material Qualification Methodology for Electron Beam Powder Bed Fusion MASTER'S THESIS · Ugur, Ö.	Ruhr University Bochum Germany Turkish-German University	FREEMELT ONE AlSi10Mg	OPEN ACCESS tezara.org/theses/772709
Electron-optical in-situ crack monitoring during electron beam powder bed fusion of CMSX-4 JOURNAL · Bäreis, J. et al. · <i>Progress in Additive Manufacturing</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE CMSX-4	OPEN ACCESS 10.1007/s40964-022-00357-9
3D-Printed Raney-Cu POCS as Promising New Catalysts for Methanol Synthesis JOURNAL · Poller, M.J. et al. · <i>Catalysts</i>	Universität Hamburg Germany FAU Erlangen-Nürnberg; Forschungszentrum Jülich	FREEMELT ONE Cu-Al	OPEN ACCESS 10.3390/catal12101288
A novel approach for powder bed-based additive manufacturing of compositionally graded composites JOURNAL · Fu, Z. et al. · <i>Additive Manufacturing</i>	FAU Erlangen-Nürnberg Germany Neue Materialien Fürth GmbH	FREEMELT ONE Cu-W	PAID ACCESS 10.1016/j.addma.2022.102916
Actual state-of-the-art of electron beam powder bed fusion REVIEW · Fu, Z.; Körner, C. · <i>European Journal of Materials</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE	OPEN ACCESS 10.1080/26889277.2022.2040342
The Effect of Process Parameters on Columnar-To-Equiaxed Transition (CET) During Electron Beam Powder Bed Fusion of Ferritic Stainless Steel MASTER'S THESIS · Ihensekhien, D.E.	KTH Royal Institute of Technology Sweden	FREEMELT ONE Ferritic SS	OPEN ACCESS kth.diva-portal.org/smash/record.jsf?pid=diva2%3A1653125
Electron beam-based additive manufacturing of Fe93.5Si6.5 (wt.%) soft magnetic material with controllable magnetic performance JOURNAL · Yang, J. et al. · <i>Scripta Materialia</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Fe-Si	PAID ACCESS 10.1016/j.scriptamat.2021.114460

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Periodic Open Cellular Raney-Copper Catalysts Fabricated via Selective Electron Beam Melting JOURNAL · Wolf, T. et al. · <i>Advanced Engineering Materials</i>	FAU Erlangen-Nürnberg Germany	FREEMELT ONE Cu-Al	OPEN ACCESS 10.1002/adem.201901524