Matthias Markl

List of Publications by Year
in descending order

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Version: 2024-02-01

26	1,122	623734	552781
papers	citations	14 h-index	26 g-index

26	26	26	992
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Basic Mechanism of Surface Topography Evolution in Electron Beam Based Additive Manufacturing. Materials, 2022, 15, 4754.	2.9	5
2	A Novel Approach to Predict the Process-Induced Mechanical Behavior of Additively Manufactured Materials. Journal of Materials Engineering and Performance, 2021, 30, 5235-5246.	2.5	6
3	Modeling Laser Beam Absorption of Metal Alloys at High Temperatures for Selective Laser Melting. Advanced Engineering Materials, 2021, 23, 2100137.	3.5	12
4	Multi-material model for the simulation of powder bed fusion additive manufacturing. Computational Materials Science, 2021, 194, 110415.	3.0	21
5	New Grain Formation Mechanisms during Powder Bed Fusion. Materials, 2021, 14, 3324.	2.9	8
6	Numerical Alloy Development for Additive Manufacturing towards Reduced Cracking Susceptibility. Crystals, 2021, 11, 902.	2.2	7
7	A multivariate meltpool stability criterion for fabrication of complex geometries in electron beam powder bed fusion. Additive Manufacturing, 2021, 45, 102051.	3.0	8
8	Isothermal crystallization kinetics of an industrial-grade Zr-based bulk metallic glass. Journal of Non-Crystalline Solids, 2021, 573, 121145.	3.1	20
9	How electron beam melting tailors the Al-sensitive microstructure and mechanical response of a novel process-adapted <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si53.svg"><mml:mrow><mml:mi>Î³</mml:mi></mml:mrow></mml:math>-TiAl based alloy. Materials and Design, 2021, 212, 110187.	7.0	22
10	S??PLE: A Software Suite to Predict Consolidation and Microstructure for Powder Bed Fusion Additive Manufacturing. Advanced Engineering Materials, 2020, 22, 1901270.	3.5	11
11	Modeling and Simulation of Microstructure Evolution for Additive Manufacturing of Metals: A Critical Review. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 4970-4983.	2.2	79
12	New Grain Formation by Constitutional Undercooling Due to Remelting of Segregated Microstructures during Powder Bed Fusion. Materials, 2020, 13, 5517.	2.9	10
13	Predictive simulation of process windows for powder bed fusion additive manufacturing: Influence of the powder size distribution. Computers and Mathematics With Applications, 2019, 78, 2351-2359.	2.7	32
14	MultOpt++: a fast regression-based model for the development of compositions with high robustness against scatter of element concentrations. Modelling and Simulation in Materials Science and Engineering, 2019, 27, 024001.	2.0	6
15	3D multi-layer grain structure simulation of powder bed fusion additive manufacturing. Acta Materialia, 2018, 152, 119-126.	7.9	131
16	Powder layer deposition algorithm for additive manufacturing simulations. Powder Technology, 2018, 330, 125-136.	4.2	30
17	Development of Single-Crystal Ni-Base Superalloys Based on Multi-criteria Numerical Optimization and Efficient Use of Refractory Elements. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 4134-4145.	2.2	18
18	Predictive Simulation of Process Windows for Powder Bed Fusion Additive Manufacturing: Influence of the Powder Bulk Density. Materials, 2017, 10, 1117.	2.9	74

#	Article	IF	Citations
19	Multiscale Modeling of Powder Bedâ€“Based Additive Manufacturing. Annual Review of Materials Research, 2016, 46, 93-123.	9.3	281
20	A coupled Cellular Automatonâ€“Lattice Boltzmann model for grain structure simulation during additive manufacturing. Computational Materials Science, 2016, 124, 37-48.	3.0	152
21	A Python extension for the massively parallel multiphysics simulation framework waLBerla. International Journal of Parallel, Emergent and Distributed Systems, 2016, 31, 529-542.	1.0	9
22	Numerical investigations on hatching process strategies for powder-bed-based additive manufacturing using an electron beam. International Journal of Advanced Manufacturing Technology, 2015, 78, 239-247.	3.0	40
23	Free surface Neumann boundary condition for the advectionâ€“diffusion lattice Boltzmann method. Journal of Computational Physics, 2015, 301, 230-246.	3.8	10
24	Validation experiments for LBM simulations of electron beam melting. International Journal of Modern Physics C, 2014, 25, 1441009.	1.7	12
25	Simulating fast electron beam melting with a parallel thermal free surface lattice Boltzmann method. Computers and Mathematics With Applications, 2014, 67, 318-330.	2.7	93
26	Electron Beam Absorption Algorithms for Electron Beam Melting Processes Simulated by a Three-Dimensional Thermal Free Surface Lattice Boltzmann Method in a Distributed and Parallel Environment. Procedia Computer Science, 2013, 18, 2127-2136.	2.0	25