

Miha ZaloÅ¾nik

List of Publications by Year in descending order

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67
papers

1,217
citations

361388

20
h-index

414395

32
g-index

74
all docs

74
docs citations

74
times ranked

497
citing authors

#	ARTICLE	IF	CITATIONS
1	Prediction of Macroseggregation in Steel Ingots: Influence of the Motion and the Morphology of Equiaxed Grains. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2009, 40, 289-304.	2.1	177
2	An operator splitting scheme for coupling macroscopic transport and grain growth in a two-phase multiscale solidification model: Part I – Model and solution scheme. <i>Computational Materials Science</i> , 2010, 48, 1-10.	3.0	70
3	Call for contributions to a numerical benchmark problem for 2D columnar solidification of binary alloys. <i>International Journal of Thermal Sciences</i> , 2009, 48, 2013-2016.	4.9	66
4	Solution of transient direct-chill aluminium billet casting problem with simultaneous material and interphase moving boundaries by a meshless method. <i>Engineering Analysis With Boundary Elements</i> , 2006, 30, 847-855.	3.7	59
5	Microseggregation, macroseggregation and related phase transformations in TiAl alloys. <i>Intermetallics</i> , 2011, 19, 749-756.	3.9	50
6	Modeling of macroseggregation in direct-chill casting of aluminum alloys: Estimating the influence of casting parameters. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2005, 413-414, 85-91.	5.6	48
7	Thermosolutal flow in steel ingots and the formation of mesosegregates. <i>International Journal of Thermal Sciences</i> , 2010, 49, 1500-1509.	4.9	42
8	Mesoscopic modeling of spacing and grain selection in columnar dendritic solidification: Envelope versus phase-field model. <i>Acta Materialia</i> , 2017, 122, 386-399.	7.9	38
9	Modeling of the Coupling of Microstructure and Macroseggregation in a Direct Chill Cast Al-Cu Billet. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2017, 48, 4713-4734.	2.2	37
10	Three-dimensional mesoscopic modeling of equiaxed dendritic solidification of a binary alloy. <i>Computational Materials Science</i> , 2016, 112, 304-317.	3.0	34
11	An operator splitting scheme for coupling macroscopic transport and grain growth in a two-phase multiscale solidification model: Part II – Application of the model. <i>Computational Materials Science</i> , 2010, 48, 11-21.	3.0	32
12	Analysis of a numerical benchmark for columnar solidification of binary alloys. <i>IOP Conference Series: Materials Science and Engineering</i> , 2012, 33, 012086.	0.6	30
13	Influence of Transport Mechanisms on Macroseggregation Formation in Direct Chill Cast Industrial Scale Aluminum Alloy Ingots. <i>Advanced Engineering Materials</i> , 2011, 13, 570-580.	3.5	28
14	Quantitative analysis by in situ synchrotron X-ray radiography of the evolution of the mushy zone in a fixed temperature gradient. <i>Journal of Crystal Growth</i> , 2015, 411, 88-95.	1.5	26
15	Effect of discretization of permeability term and mesh size on macro- and meso-segregation predictions. <i>Journal Physics D: Applied Physics</i> , 2009, 42, 105503.	2.8	25
16	Investigation of Macroseggregation Formation in Aluminium DC Casting for Different Alloy Systems. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 4710-4721.	2.2	25
17	Effects of the powder, laser parameters and surface conditions on the molten pool formation in the selective laser melting of IN718. <i>Journal of Materials Processing Technology</i> , 2021, 289, 116930.	6.3	23
18	Experimental verification of a model on melting and resolidification in a temperature gradient. <i>Journal of Alloys and Compounds</i> , 2012, 540, 85-88.	5.5	21

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19	Study of the influence of mushy zone permeability laws on macro- and meso-segregations predictions. <i>International Journal of Thermal Sciences</i> , 2012, 54, 33-47.	4.9	21
20	Evolution of a mushy zone in a static temperature gradient using a volume average approach. <i>Acta Materialia</i> , 2017, 141, 206-216.	7.9	21
21	Modelling of Columnar-to-Equiaxed and Equiaxed-to-Columnar Transitions in Ingots Using a Multiphase Model. <i>IOP Conference Series: Materials Science and Engineering</i> , 2015, 84, 012087.	0.6	19
22	A model study of the impact of the transport of inoculant particles on microstructure formation during solidification. <i>Computational Materials Science</i> , 2015, 102, 95-109.	3.0	19
23	Verification of a numerical model of macrosegregation in direct chill casting. <i>International Journal of Numerical Methods for Heat and Fluid Flow</i> , 2008, 18, 308-324.	2.8	18
24	A Simplified Three-Phase Model of Equiaxed Solidification for the Prediction of Microstructure and Macrosegregation in Castings. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 2778-2794.	2.2	17
25	Predictive Capabilities of Multiphysics and Multiscale Models in Modeling Solidification of Steel Ingots and DC Casting of Aluminum. <i>Jom</i> , 2016, 68, 2198-2206.	1.9	15
26	Quantitative 3D mesoscopic modeling of grain interactions during equiaxed dendritic solidification in a thin sample. <i>Acta Materialia</i> , 2019, 173, 249-261.	7.9	15
27	Prediction of equiaxed grain structure and macrosegregation in an industrial steel ingot: comparison with experiment. <i>International Journal of Advances in Engineering Sciences and Applied Mathematics</i> , 2010, 2, 140-148.	1.1	14
28	Finite Element Multi-scale Modeling of Chemical Segregation in Steel Solidification Taking into Account the Transport of Equiaxed Grains. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 1725-1748.	2.2	14
29	A numerical simulation of columnar solidification: influence of inertia on channel segregation. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2013, 21, 045016.	2.0	13
30	Application of an Equiaxed Grain Growth and Transport Model to Study Macrosegregation in a DC Casting Experiment. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2019, 50, 1773-1786.	2.2	13
31	Channel segregation during columnar solidification: Relation between mushy zone instability and mush permeability. <i>International Journal of Heat and Mass Transfer</i> , 2021, 164, 120602.	4.8	12
32	Thermosolutal convection and macrosegregation during directional solidification of TiAl alloys in centrifugal casting. <i>International Journal of Heat and Mass Transfer</i> , 2020, 154, 119698.	4.8	12
33	In situ experimental observation of the time evolution of a dendritic mushy zone in a fixed temperature gradient. <i>Comptes Rendus - Mecanique</i> , 2013, 341, 421-428.	2.1	11
34	Simulation of a macrosegregation benchmark in a cylindrical coordinate system with a meshless method. <i>International Journal of Thermal Sciences</i> , 2019, 142, 121-133.	4.9	11
35	Mesoscopic modeling of equiaxed and columnar solidification microstructures under forced flow and buoyancy-driven flow in hypergravity: Envelope versus phase-field model. <i>Acta Materialia</i> , 2020, 199, 680-694.	7.9	11
36	Influence of Discretization of Permeability Term and Mesh Size on the Prediction of Channel Segregations. <i>IOP Conference Series: Materials Science and Engineering</i> , 2012, 27, 012039.	0.6	9

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37	DEM simulation of dendritic grain random packing: application to metal alloy solidification. EPJ Web of Conferences, 2017, 140, 06002.	0.3	8
38	Packing of sedimenting equiaxed dendrites. Physical Review E, 2018, 97, 012910.	2.1	8
39	Upscaling mesoscopic simulation results to develop constitutive relations for macroscopic modeling of equiaxed dendritic solidification. Materialia, 2019, 5, 100231.	2.7	8
40	Process-scale modelling of microstructure in direct chill casting of aluminium alloys. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012100.	0.6	7
41	Comparing mesoscopic models for dendritic growth. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012002.	0.6	7
42	Meso-scale simulation of liquid feeding in an equiaxed dendritic mushy zone. Materialia, 2020, 9, 100612.	2.7	7
43	Three-dimensional mesoscopic modeling of equiaxed dendritic solidification in a thin sample: effect of convection flow. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012040.	0.6	6
44	Modelling macrosegregation modification in dc casting of aluminium alloys in sheet ingots accounting for inlet melt flow, equiaxed grain morphology and transport. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012040.	0.6	6
45	Numerical study of the impact of inoculant and grain transport on macrosegregation and microstructure formation during solidification of an Al-22%Cu alloy. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012089.	0.6	4
46	The effect of finite microscopic liquid solute diffusion on macrosegregation formation. IOP Conference Series: Materials Science and Engineering, 2012, 27, 012040.	0.6	4
47	In-situ observations of solutal melting using laser scanning confocal microscopy: The Cu/Ni model system. Materials Characterization, 2014, 97, 125-131.	4.4	4
48	Mesoscopic modeling of columnar solidification and comparisons with phase-field simulations. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012074.	0.6	4
49	Solidification microstructure during selective laser melting of Ni based superalloy: experiment and mesoscopic modelling. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012004.	0.6	4
50	Analysis of columnar-to-equiaxed transition experiment in lab scale steel casting by a multiphase model. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012039.	0.6	4
51	Packing dynamics of spherical and nonconvex grains sedimenting at low Stokes number. Physical Review E, 2019, 99, 012907.	2.1	3
52	Effect of the Coriolis force on the macrosegregation of aluminum in the centrifugal casting of Ti-Al alloys. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012033.	0.6	3
53	Three-dimensional study of macro- and mesosegregation formation in a rectangular cavity cooled from one vertical side. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012088.	0.6	2
54	Influence of transport mechanisms on nucleation and grain structure formation in DC cast aluminium alloy ingots. IOP Conference Series: Materials Science and Engineering, 2012, 27, 012070.	0.6	2

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55	Multi-scale Unite element modelling of solidification structures by a splitting method taking into account the transport of equiaxed grains. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012007.	0.6	2
56	The role of the stagnant-film thickness in mesoscopic modeling of equiaxed grain envelopes. IOP Conference Series: Materials Science and Engineering, 2016, 117, 012014.	0.6	2
57	Analysis of the Interplay Between Thermo-solutal Convection and Equiaxed Grain Motion in Relation to Macrosegregation Formation in AA5182 Sheet Ingots. Minerals, Metals and Materials Series, 2019, , 1007-1013.	0.4	2
58	Prediction of solidification structures in a 9.8 tonne steel ingot. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012032.	0.6	2
59	Prediction of solidification structures in a 9.8 t steel ingot. IOP Conference Series: Materials Science and Engineering, 0, 529, 012036.	0.6	2
60	On the Prediction of Macrosegregation in Vacuum Arc Remelted Ingots. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2022, 53, 2953-2971.	2.1	2
61	Impact of Inlet Flow on Macrosegregation Formation Accounting for Grain Motion and Morphology Evolution in DC Casting of Aluminium. Minerals, Metals and Materials Series, 2018, , 1089-1096.	0.4	1
62	Melt Flow and Macrosegregation in DC Casting of Binary Aluminum Alloys. Materials Science Forum, 2006, 508, 515-522.	0.3	0
63	Observations expérimentales et modélisation de la macroségrégation en coulée centrifuge d'alliages Ti-Al-Nb. Revue De Metallurgie, 2010, 107, 449-455.	0.3	0
64	Channel segregation during columnar solidification influence of inertia. , 2012, , .		0
65	Mesoscopic modelling of columnar solidification. IOP Conference Series: Materials Science and Engineering, 2016, 117, 012013.	0.6	0
66	The Coupling of Macrosegregation with Grain Nucleation, Growth and Motion in DC Cast Aluminum Alloy Ingots. , 2011, , 699-704.		0
67	The Coupling of Macrosegregation with Grain Nucleation, Growth and Motion in DC Cast Aluminum Alloy Ingots. , 2016, , 848-853.		0