Miha ZaloÅ¾nik

List of Publications by Year
in descending order

67 papers	1,217 citations	361413 20 h-index	414414 32 g-index
74 all docs	74 docs citations	74 times ranked	497 citing authors

#	Article	IF	Citations
1	Prediction of Macrosegregation in Steel Ingots: Influence of the Motion and the Morphology of Equiaxed Grains. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 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 â€" Model and solution scheme. Computational Materials Science, 2010, 48, 1-10.	3.0	70
3	Call for contributions to a numerical benchmark problem for 2D columnar solidification of binary alloys. International Journal of Thermal Sciences, 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. Engineering Analysis With Boundary Elements, 2006, 30, 847-855.	3.7	59
5	Microsegregation, macrosegregation and related phase transformations in TiAl alloys. Intermetallics, 2011, 19, 749-756.	3.9	50
6	Modeling of macrosegregation in direct-chill casting of aluminum alloys: Estimating the influence of casting parameters. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 413-414, 85-91.	5.6	48
7	Thermosolutal flow in steel ingots and the formation of mesosegregates. International Journal of Thermal Sciences, 2010, 49, 1500-1509.	4.9	42
8	Mesoscopic modeling of spacing and grain selection in columnar dendritic solidification: Envelope versus phase-field model. Acta Materialia, 2017, 122, 386-399.	7.9	38
9	Modeling of the Coupling of Microstructure and Macrosegregation in a Direct Chill Cast Al-Cu Billet. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 4713-4734.	2.2	37
10	Three-dimensional mesoscopic modeling of equiaxed dendritic solidification of a binary alloy. Computational Materials Science, 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 â€" Application of the model. Computational Materials Science, 2010, 48, 11-21.	3.0	32
12	Analysis of a numerical benchmark for columnar solidification of binary alloys. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012086.	0.6	30
13	Influence of Transport Mechanisms on Macrosegregation Formation in Direct Chill Cast Industrial Scale Aluminum Alloy Ingots. Advanced Engineering Materials, 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. Journal of Crystal Growth, 2015, 411, 88-95.	1.5	26
15	Effect of discretization of permeability term and mesh size on macro- and meso-segregation predictions. Journal Physics D: Applied Physics, 2009, 42, 105503.	2.8	25
16	Investigation of Macrosegregation Formation in Aluminium DC Casting for Different Alloy Systems. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 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. Journal of Materials Processing Technology, 2021, 289, 116930.	6.3	23
18	Experimental verification of a model on melting and resolidification in a temperature gradient. Journal of Alloys and Compounds, 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. International Journal of Thermal Sciences, 2012, 54, 33-47.	4.9	21
20	Evolution of a mushy zone in a static temperature gradient using a volume average approach. Acta Materialia, 2017, 141, 206-216.	7.9	21
21	Modelling of Columnar-to-Equiaxed and Equiaxed-to- Columnar Transitions in Ingots Using a Multiphase Model. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012087.	0.6	19
22	A model study of the impact of the transport of inoculant particles on microstructure formation during solidification. Computational Materials Science, 2015, 102, 95-109.	3.0	19
23	Verification of a numerical model of macrosegregation in direct chill casting. International Journal of Numerical Methods for Heat and Fluid Flow, 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. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 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. Jom, 2016, 68, 2198-2206.	1.9	15
26	Quantitative 3D mesoscopic modeling of grain interactions during equiaxed dendritic solidification in a thin sample. Acta Materialia, 2019, 173, 249-261.	7.9	15
27	Prediction of equiaxed grain structure and macrosegregation in an industrial steel ingot: comparison with experiment. International Journal of Advances in Engineering Sciences and Applied Mathematics, 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. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 1725-1748.	2.2	14
29	A numerical simulation of columnar solidification: influence of inertia on channel segregation. Modelling and Simulation in Materials Science and Engineering, 2013, 21, 045016.	2.0	13
30	Application of an Equiaxed Grain Growth and Transport Model to Study Macrosegregation in a DC Casting Experiment. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 1773-1786.	2.2	13
31	Channel segregation during columnar solidification: Relation between mushy zone instability and mush permeability. International Journal of Heat and Mass Transfer, 2021, 164, 120602.	4.8	12
32	Thermosolutal convection and macrosegregation during directional solidification of TiAl alloys in centrifugal casting. International Journal of Heat and Mass Transfer, 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. Comptes Rendus - Mecanique, 2013, 341, 421-428.	2.1	11
34	Simulation of a macrosegregation benchmark in a cylindrical coordinate system with a meshless method. International Journal of Thermal Sciences, 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. Acta Materialia, 2020, 199, 680-694.	7.9	11
36	Influence of Discretization of Permeability Term and Mesh Size on the Prediction of Channel Segregations. IOP Conference Series: Materials Science and Engineering, 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 expÃ©rimentales et modÃ©lisation de la macrosÃ©grÃ©gation en coulÃ©e centrifuge dâ€™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