

# Abdellah Kharicha

## List of Publications by Year in descending order

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129  
papers

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citing authors

#	ARTICLE	IF	CITATIONS
1	Simulation of macrosegregation in a 2.45-ton steel ingot using a three-phase mixed columnar-equiaxed model. <i>International Journal of Heat and Mass Transfer</i> , 2014, 72, 668-679.	4.8	126
2	On Macrosegregation. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2015, 46, 4854-4867.	2.2	65
3	Review on Modeling and Simulation of Electroslag Remelting. <i>Steel Research International</i> , 2018, 89, 1700100.	1.8	61
4	A four phase model for the macrosegregation and shrinkage cavity during solidification of steel ingot. <i>Applied Mathematical Modelling</i> , 2017, 41, 102-120.	4.2	58
5	Shape and stability of the slag/melt interface in a small dc ESR process. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2005, 413-414, 129-134.	5.6	50
6	Modeling of Multiscale and Multiphase Phenomena in Materials Processing. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2014, 45, 36-43.	2.1	50
7	Solidification and Particle Entrapment during Continuous Casting of Steel. <i>Steel Research International</i> , 2008, 79, 599-607.	1.8	49
8	On the Importance of Electric Currents Flowing directly into the Mould during an ESR Process. <i>Steel Research International</i> , 2008, 79, 632-636.	1.8	48
9	Modeling the Effects of Strand Surface Bulging and Mechanical Softreduction on the Macrosegregation Formation in Steel Continuous Casting. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 1415-1434.	2.2	47
10	Simulation of channel segregation using a two-phase columnar solidification model – Part II: Mechanism and parameter study. <i>Computational Materials Science</i> , 2012, 55, 419-429.	3.0	46
11	Modeling diffusion-governed solidification of ternary alloys – Part 1: Coupling solidification kinetics with thermodynamics. <i>Computational Materials Science</i> , 2013, 79, 830-840.	3.0	45
12	A Dynamic Mesh-Based Approach to Model Melting and Shape of an ESR Electrode. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2015, 46, 2049-2061.	2.1	45
13	Simulation of the Electric Signal During the Formation and Departure of Droplets in the Electroslag Remelting Process. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2016, 47, 1427-1434.	2.1	44
14	A transient model for nozzle clogging. <i>Powder Technology</i> , 2018, 329, 181-198.	4.2	44
15	On Melting of Electrodes during Electro-Slag Remelting. <i>ISIJ International</i> , 2014, 54, 1621-1628.	1.4	40
16	Volume-Averaged Modeling of Multiphase Flow Phenomena during Alloy Solidification. <i>Metals</i> , 2019, 9, 229.	2.3	33
17	Modeling diffusion-governed solidification of ternary alloys – Part 2: Macroscopic transport phenomena and macrosegregation. <i>Computational Materials Science</i> , 2014, 92, 267-285.	3.0	30
18	Use of a mixed columnar-equiaxed solidification model to analyse the formation of as-cast structure and macrosegregation in a Sn-10wt% Pb benchmark experiment. <i>International Journal of Heat and Mass Transfer</i> , 2018, 122, 939-953.	4.8	30

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19	Influence of the Slag/Pool Interface on the Solidification in an Electro-Slag Remelting Process. <i>Materials Science Forum</i> , 0, 649, 229-236.	0.3	28
20	Effect of an Electrically-Conducting Wall on Transient Magnetohydrodynamic Flow in a Continuous-Casting Mold with an Electromagnetic Brake. <i>Metals</i> , 2018, 8, 609.	2.3	27
21	Electric Current Distribution During Electromagnetic Braking in Continuous Casting. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2020, 51, 2811-2828.	2.1	26
22	Review of Ammonium Chlorideâ€“Water Solution Properties. <i>Journal of Chemical &amp; Engineering Data</i> , 2018, 63, 3170-3183.	1.9	25
23	On Validity of Axisymmetric Assumption for Modeling an Industrial Scale Electroslag Remelting Process. <i>Advanced Engineering Materials</i> , 2016, 18, 224-230.	3.5	23
24	A Comprehensive Analysis of Macrosegregation Formation During Twin-Roll Casting. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2019, 50, 1334-1350.	2.1	23
25	Influence of the magnetic field and the conductance ratio on the mass transfer rotating lid driven flow. <i>International Journal of Heat and Mass Transfer</i> , 2004, 47, 1997-2014.	4.8	22
26	A Parametric Study of the Vacuum Arc Remelting (VAR) Process: Effects of Arc Radius, Side-Arcing, and Gas Cooling. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2020, 51, 222-235.	2.1	22
27	Experimental and numerical analysis of free surface deformation in an electrically driven flow. <i>Experimental Thermal and Fluid Science</i> , 2015, 62, 192-201.	2.7	21
28	Generation of Reverse Meniscus Flow by Applying An Electromagnetic Brake. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2021, 52, 3193-3207.	2.1	21
29	Incorporation of fragmentation into a volume average solidification model. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2018, 26, 015004.	2.0	20
30	3D Lattice Boltzmann flow simulations through dendritic mushy zones. <i>Engineering Analysis With Boundary Elements</i> , 2014, 45, 29-35.	3.7	19
31	Modeling of the as-cast structure and macrosegregation in the continuous casting of a steel billet: Effect of M-EMS. <i>Journal of Materials Processing Technology</i> , 2022, 301, 117434.	6.3	18
32	Simulation of Asâ€“Cast Steel Ingots. <i>Steel Research International</i> , 2018, 89, 1700037.	1.8	17
33	Calculation Accuracy and Efficiency of a Transient Model for Submerged Entry Nozzle Clogging. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2019, 50, 1428-1443.	2.1	17
34	Scale-Adaptive Simulation of Transient Two-Phase Flow in Continuous-Casting Mold. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2019, 50, 543-554.	2.1	17
35	Mathematical Modeling of the Early Stage of Clogging of the SEN During Continuous Casting of Ti-ULC Steel. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2021, 52, 4167-4178.	2.1	17
36	Reformulation of time averaged Joule heating in presence of temperature fluctuations. <i>International Journal of Cast Metals Research</i> , 2009, 22, 155-159.	1.0	16

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37	Simulation of Horizontal Centrifugal Casting: Mold Filling and Solidification. ISIJ International, 2014, 54, 266-274.	1.4	16
38	Heat Transfer Coefficient at Cast-Mold Interface During Centrifugal Casting: Calculation of Air Gap. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2018, 49, 1421-1433.	2.1	16
39	A multiphysics model of the electroslag rapid remelting (ESRR) process. Applied Thermal Engineering, 2018, 130, 1062-1069.	6.0	16
40	Contribution of an Electro-Vortex Flow to Primary, Secondary, and Tertiary Electric Current Distribution in an Electrolyte. Journal of the Electrochemical Society, 2018, 165, E604-E615.	2.9	16
41	Hydrodynamic study of a rotating MHD flow in a cylindrical cavity by ultrasound Doppler shift method. International Journal of Engineering Science, 2005, 43, 589-615.	5.0	15
42	Toward Modeling of Electrochemical Reactions during Electroslag Remelting (ESR) Process. Steel Research International, 2017, 88, 1700011.	1.8	15
43	Numerical analysis of macrosegregation in vertically solidified Pb-Sn test castings " Part II: Equiaxed solidification. Computational Materials Science, 2016, 124, 456-470.	3.0	14
44	Impact of hydrodynamics on growth and morphology of faceted crystals. Journal of Crystal Growth, 2020, 541, 125667.	1.5	14
45	A Numerical Study on the Influence of an Axial Magnetic Field (AMF) on Vacuum Arc Remelting (VAR) Process. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 3354-3362.	2.1	14
46	Numerical analysis of macrosegregation in vertically solidified Pb-Sn test castings " Part I: Columnar solidification. Computational Materials Science, 2016, 124, 444-455.	3.0	13
47	Confrontation of the Ohmic approach with the ionic transport approach for modeling the electrical behavior of an electrolyte. Ionics, 2018, 24, 2157-2165.	2.4	13
48	Two-phase viscoplastic model for the simulation of twin roll casting. Journal of Materials Processing Technology, 2020, 286, 116814.	6.3	13
49	Observation of flow regimes and transitions during a columnar solidification experiment. Fluid Dynamics Research, 2014, 46, 041424.	1.3	12
50	Simulation in Metallurgical Processing: Recent Developments and Future Perspectives. Jom, 2016, 68, 2191-2197.	1.9	12
51	On Modelling Parasitic Solidification Due to Heat Loss at Submerged Entry Nozzle Region of Continuous Casting Mold. Metals, 2021, 11, 1375.	2.3	12
52	Simultaneous Observation of Melt Flow and Motion of Equiaxed Crystals During Solidification Using a Dual Phase Particle Image Velocimetry Technique. Part I: Stage Characterization of Melt Flow and Equiaxed Crystal Motion. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 650-660.	2.2	11
53	Influence of Dendritic Morphology on the Calculation of Macrosegregation in Steel Ingot. Materials Science Forum, 0, 790-791, 121-126.	0.3	11
54	Role of Solidification in Submerged Entry Nozzle Clogging During Continuous Casting of Steel. Steel Research International, 2020, 91, 2000230.	1.8	11

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55	Modelling macrosegregation in a 2.45 ton steel ingot. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012091.	0.6	10
56	Simultaneous Observation of Melt Flow and Motion of Equiaxed Crystals During Solidification Using a Dual Phase Particle Image Velocimetry Technique. Part II: Relative Velocities. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 661-668.	2.2	10
57	Simulation of Crystal Sedimentation and Viscoplastic Behavior of Sedimented Equiaxed Mushy Zones. Transactions of the Indian Institute of Metals, 2015, 68, 1087-1094.	1.5	10
58	Investigation of the Gasâ€Jet Wiping Process â€™ Twoâ€Phase Large Eddy Simulations Elucidate Impingement Dynamics and Wave Formation on Zinc Coatings. Steel Research International, 2017, 88, 1600507.	1.8	10
59	Massive Formation of Equiaxed Crystals by Avalanches of Mushy Zone Segments. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 2927-2931.	2.2	10
60	Modelling melting and grain destruction phenomena during globular equiaxed solidification. Applied Mathematical Modelling, 2021, 97, 821-838.	4.2	10
61	Norton-Hoff model for deformation of growing solid shell of thin slab casting in funnel-shape mold. Journal of Iron and Steel Research International, 2022, 29, 88-102.	2.8	10
62	Influence of Crystal Morphological Parameters on the Solidification of ESR Ingot. Materials Science Forum, 0, 790-791, 396-401.	0.3	8
63	On the Coupling Mechanism of Equiaxed Crystal Generation with the Liquid Flow Driven by Natural Convection During Solidification. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 1708-1724.	2.2	8
64	Modeling of the Twin-Roll Casting Process: Transition from Casting to Rolling. Transactions of the Indian Institute of Metals, 2018, 71, 2645-2649.	1.5	8
65	Modelling viscoplastic behavior of solidifying shell under applied electromagnetic breaking during continuous casting. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012015.	0.6	8
66	Directional Solidification of AlSi7Fe1 Alloy Under Forced Flow Conditions: Effect of Intermetallic Phase Precipitation and Dendrite Coarsening. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2021, 52, 3007-3022.	2.2	8
67	Bridging Capillary-Driven Fragmentation and Grain Transport with Mixed Columnar-Equiaxed Solidification. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2021, 52, 4609-4622.	2.2	8
68	Application of Microprobe Analysis to the Reconstruction and Characterization of Dendritic Structures. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 607-616.	2.2	7
69	Using four-phase Eulerian volume averaging approach to model macrosegregation and shrinkage cavity. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012006.	0.6	7
70	On modelling viscoplastic behavior of the solidifying shell in the funnel-type continuous casting mold. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012081.	0.6	7
71	A Numerical Investigation on the Electrochemical Behavior of CaO and Al <sub>2</sub> O <sub>3</sub> in the ESR Slags. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2020, 51, 871-879.	2.1	7
72	A volume of fluid (VOF) method to model shape change during electrodeposition. Electrochemistry Communications, 2020, 112, 106675.	4.7	7

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73	Flow-solidification interaction: A numerical study on solidification of NH <sub>4</sub> Cl – 70wt.%H <sub>2</sub> O solution in a water-cooled mould with a large sample thickness. <i>International Journal of Heat and Mass Transfer</i> , 2021, 164, 120566.	4.8	7
74	3D numerical simulation and experimental investigation of pure tin solidification under natural and forced convection. <i>International Journal of Thermal Sciences</i> , 2021, 164, 106900.	4.9	7
75	Rapid solidification and metastable phase formation during surface modifications of composite Al-Cr cathodes exposed to cathodic arc plasma. <i>Journal of Materials Science and Technology</i> , 2021, 94, 147-163.	10.7	7
76	Modeling Asymmetric Flow in the Thin-Slab Casting Mold Under Electromagnetic Brake. <i>Steel Research International</i> , 2022, 93, .	1.8	7
77	Reverse flows and flattening of a submerged jet under the action of a transverse magnetic field. <i>Physical Review Fluids</i> , 2021, 6, .	2.5	7
78	Corrosion study of an austenitic steel in Pb-17Li under magnetic field and rotating flow. <i>Fusion Engineering and Design</i> , 2003, 69, 391-395.	1.9	6
79	Modeling electrochemical transport of ions in the molten CaF <sub>2</sub> -FeO slag operating under a DC voltage. <i>Applied Mathematics and Computation</i> , 2019, 357, 357-373.	2.2	6
80	Two-phase modelling of equiaxed crystal sedimentation and thermomechanic stress development in the sedimented packed bed. <i>IOP Conference Series: Materials Science and Engineering</i> , 2015, 84, 012102.	0.6	6
81	Exploration of the double-diffusive convection during dendritic solidification with a combined volume-averaging and cellular-automaton model. <i>IOP Conference Series: Materials Science and Engineering</i> , 2012, 33, 012115.	0.6	5
82	Macrosegregation Formation in an Al-Si Casting Sample with Cross-sectional Change During Directional Solidification. <i>Transactions of the Indian Institute of Metals</i> , 2018, 71, 2639-2643.	1.5	5
83	A Dynamic Mesh Method to Model Shape Change during Electrodeposition. <i>Journal of the Electrochemical Society</i> , 2019, 166, D521-D529.	2.9	5
84	Numerical study of the role of mush permeability in the solidifying mushy zone under forced convection. <i>Materials Today Communications</i> , 2020, 22, 100842.	1.9	5
85	Tornados and cyclones driven by Magneto-hydrodynamic forces. <i>European Journal of Mechanics, B/Fluids</i> , 2022, 94, 90-105.	2.5	5
86	Experimental Evaluation of MHD Modeling of EMS During Continuous Casting. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2022, 53, 2166-2181.	2.1	5
87	The Role of Mold Electromagnetic Stirring in the Dissipation of Superheat during the Continuous Casting of Billets. <i>Steel Research International</i> , 2022, 93, .	1.8	5
88	Reconstruction of Three-Dimensional Dendritic Structures based on the Investigation of Microsegregation Patterns. <i>Steel Research International</i> , 2010, 81, 644-651.	1.8	4
89	Simulation of the as-cast structure of Al-4.0wt.%Cu ingots with a 5-phase mixed columnar-equiaxed solidification model. <i>IOP Conference Series: Materials Science and Engineering</i> , 2012, 33, 012075.	0.6	4
90	Multi-physics simulation of the component attachment within embedding process. , 2013, , .		4

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91	A scale adaptive dendritic envelope model of solidification at mesoscopic scales. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012032.	0.6	4
92	Assessment of Different Turbulence Models for the Motion of Non-metallic Inclusion in Induction Crucible Furnace. IOP Conference Series: Materials Science and Engineering, 2016, 143, 012026.	0.6	4
93	Simulation of Non-metallic Inclusion Deposition and Clogging of Nozzle. Minerals, Metals and Materials Series, 2018, , 149-158.	0.4	4
94	A 2D Multiphase Model of Drop Behavior during Electroslag Remelting. Metals, 2020, 10, 490.	2.3	4
95	Toward a Simplified Arc Impingement Model in a Direct-Current Electric Arc Furnace. Metals, 2021, 11, 1482.	2.3	4
96	MHD instability at the cathode spot as the origin of the vortex formation in high-intensity plasma arcs. Journal of Physics Communications, 2022, 6, 015008.	1.2	4
97	Experimental and numerical investigations of $\text{NH}_4\text{Cl}$ solidification in a mould Part 1: Experimental results. International Journal of Cast Metals Research, 2009, 22, 168-171.	1.0	3
98	3D simulation of interdendritic flow through a Al-18wt.%Cu structure captured with X-ray microtomography. IOP Conference Series: Materials Science and Engineering, 2012, 27, 012016.	0.6	3
99	Shallow water model for horizontal centrifugal casting. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012032.	0.6	3
100	Numerical Study of the Influence of Diffusion-Governed Growth Kinetics of Ternary Alloy on Macrosegregation. Materials Science Forum, 2014, 790-791, 85-90.	0.3	3
101	An approximate Riemann solver for shallow water equations and heat advection in horizontal centrifugal casting. Applied Mathematics and Computation, 2015, 267, 179-194.	2.2	3
102	Transient melting of an ESR electrode. IOP Conference Series: Materials Science and Engineering, 2016, 143, 012003.	0.6	3
103	Simulation of macrosegregation in a large vertical continuous casting of steel. IOP Conference Series: Materials Science and Engineering, 2016, 143, 012032.	0.6	3
104	A GPU solver for symmetric positive-definite matrices vs. traditional codes. Computers and Mathematics With Applications, 2019, 78, 2933-2943.	2.7	3
105	Geometrical effect on macrosegregation formation during unidirectional solidification of Al-Si alloy. Journal of Materials Processing Technology, 2021, 288, 116913.	6.3	3
106	Validation of a capillary-driven fragmentation model during mixed columnar-equiaxed solidification with melt convection and grain transport. Materialia, 2022, 23, 101462.	2.7	3
107	Simultaneous observation of melt flow and motion of equiaxed crystals during solidification using a dual phase Particle Image Velocimetry technique. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012042.	0.6	2
108	Process Simulation for the Metallurgical Industry: New Insights into Invisible Phenomena. BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik, 2013, 158, 184-188.	1.0	2

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109	Advanced Process Simulation of Solidification and Melting. BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik, 2014, 159, 30-40.	1.0	2
110	Modified Shallow Water Equations With Application for Horizontal Centrifugal Casting of Rolls. Journal of Fluids Engineering, Transactions of the ASME, 2015, 137, .	1.5	2
111	A numerical study on electrochemical transport of ions in calcium fluoride slag. IOP Conference Series: Materials Science and Engineering, 2016, 143, 012008.	0.6	2
112	Discussion on Modeling Capability for Macroseggregation. High Temperature Materials and Processes, 2017, 36, 531-539.	1.4	2
113	Impact of crystal sedimentation and viscoplastic semi-solid dynamics on macroseggregation. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012042.	0.6	2
114	Hydrodynamically enhanced electrochemical mass transfer on the surface of an electrically conductive droplet. Heat and Mass Transfer, 2021, 57, 1697-1705.	2.1	2
115	Applicability of different MHD approximations in electrovortex flow simulation. Magnetohydrodynamics, 2019, 54, 403-416.	0.3	2
116	Investigation of effect of electrode polarity on electrochemistry and magnetohydrodynamics using tertiary current distribution in electroslag remelting process. Journal of Iron and Steel Research International, 2021, 28, 1551-1561.	2.8	2
117	Recent Developments and Future Perspectives in Simulation of Metallurgical Processes. BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik, 2015, 160, 507-512.	1.0	1
118	An attempt to model electrode change during the ESR process. IOP Conference Series: Materials Science and Engineering, 2016, 143, 012006.	0.6	1
119	Free-surface flow in horizontally rotating cylinder: experiment and simulation. IOP Conference Series: Materials Science and Engineering, 2016, 143, 012036.	0.6	1
120	Role of fragmentation in as-cast structure: numerical study and experimental validation. China Foundry, 2017, 14, 321-326.	1.4	1
121	A (non-)hydrostatic free-surface numerical model for two-layer flows. Applied Mathematics and Computation, 2018, 319, 301-317.	2.2	1
122	On the applicability of the electrodynamic approximation in the simulation of the electrovortex flow in the presence of an external magnetic field. Journal of Physics: Conference Series, 2018, 1128, 012112.	0.4	1
123	Numerical Investigation of Collective Motion of Cathode Spots. , 2018, , .		1
124	Simulation of thermos-solutal convection induced macroseggregation in a Sn-10%Pb alloy benchmark during columnar solidification. IOP Conference Series: Materials Science and Engineering, 2016, 119, 012004.	0.6	0
125	On the Modelling of Macroseggregation during Twin-Roll Casting. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012041.	0.6	0
126	Modelling of shear bands during solidification. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012066.	0.6	0



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127	Modeling mixed columnar-equiaxed solidification of Sn-10wt%Pb alloy under forced convection driven by travelling magnetic stirring. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012024.	0.6	0
128	Numerical investigation of an in-situ observed flow regimes during solidification of an NH <sub>4</sub> Cl 70 wt%H <sub>2</sub> O solution. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012041.	0.6	0
129	Influence of crystal fragmentation on the formation of microstructure and macrosegregation during directional solidification under forced convection condition. IOP Conference Series: Materials Science and Engineering, 2020, 861, 012048.	0.6	0