Petrus C Pistorius

List of Publications by Year in descending order

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201385 161609 3,357 126 27 54 citations h-index g-index papers 143 143 143 2325 docs citations times ranked citing authors all docs

#	Article	IF	CITATIONS
1	Oxides, porosity and fatigue performance of AlSi10Mg parts produced by selective laser melting. International Journal of Fatigue, 2017, 94, 192-201.	2.8	343
2	Prediction of lack-of-fusion porosity for powder bed fusion. Additive Manufacturing, 2017, 14, 39-48.	1.7	316
3	Surface Roughness and the Metastable Pitting of Stainless Steel in Chloride Solutions. Corrosion, 1995, 51, 380-385.	0.5	198
4	Rapid Solidification: Selective Laser Melting of AlSi10Mg. Jom, 2016, 68, 960-966.	0.9	167
5	A Comprehensive Comparison of the Analytical and Numerical Prediction of the Thermal History and Solidification Microstructure of Inconel 718 Products Made by Laser Powder-Bed Fusion. Engineering, 2017, 3, 685-694.	3.2	164
6	Calcium Modification of Spinel Inclusions in Aluminum-Killed Steel: Reaction Steps. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2012, 43, 830-840.	1.0	134
7	Transient Inclusion Evolution During Modification of Alumina Inclusions by Calcium in Liquid Steel: Part I. Background, Experimental Techniques and Analysis Methods. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2011, 42, 711-719.	1.0	119
8	Transient Inclusion Evolution During Modification of Alumina Inclusions by Calcium in Liquid Steel: Part II. Results and Discussion. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2011, 42, 720-729.	1.0	115
9	Anisotropic Mechanical Behavior of AlSi10Mg Parts Produced by Selective Laser Melting. Jom, 2017, 69, 516-522.	0.9	98
10	Behaviour of coal mineral matter in sintering and slagging of ash during the gasification process. Fuel Processing Technology, 2011, 92, 1426-1433.	3.7	86
11	Modeling and Simulation of an Electric Arc Furnace Process ISIJ International, 1999, 39, 23-32.	0.6	85
12	Transformation of Oxide Inclusions in Type 304 Stainless Steels during Heat Treatment. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 2281-2292.	1.0	79
13	Physicochemical aspects of titanium slag production and solidification. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2003, 34, 581-588.	1.0	64
14	Design Aspects of Electrochemical Noise Measurements for Uncoated Metals: Electrode Size and Sampling Rate. Corrosion, 1997, 53, 273-283.	0.5	60
15	Fatigue life prediction for AlSi10Mg components produced by selective laser melting. International Journal of Fatigue, 2019, 125, 479-490.	2.8	59
16	Numerical modeling and experimental validation of thermal history and microstructure for additive manufacturing of an Inconel 718 product. Progress in Additive Manufacturing, 2018, 3, 15-32.	2.5	53
17	Effect of Silicon on the Desulfurization of Al-Killed Steels: Part I. Mathematical Model. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2013, 44, 1086-1094.	1.0	46
18	On the Eutectoid Reaction in a Quaternary Fe-C-Mn-Al Alloy: AusteniteÂ→ÂFerriteÂ+ÂKappa-CarbideÂ+ÂM23C6 Carbide. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 1199-1216.	1.1	44

#	Article	IF	Citations
19	The effect of flux chemistry on element transfer in Submerged Arc Welding: application of thermochemical modelling. Journal of Materials Research and Technology, 2021, 11, 2021-2036.	2.6	40
20	Increased Use of Natural Gas in Blast Furnace Ironmaking: Mass and Energy Balance Calculations. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2019, 50, 1290-1299.	1.0	39
21	Modeling Manganese Silicate Inclusion Composition Changes during Ladle Treatment Using FactSage Macros. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 37-45.	1.0	35
22	Specification Framework for Control of the Secondary Cooling Zone in Continuous Casting ISIJ International, 1998, 38, 447-453.	0.6	32
23	Comparison of heat treatment response of semisolid metal processed alloys A356 and F357. International Journal of Cast Metals Research, 2010, 23, 37-43.	0.5	32
24	Modelling of an ilmenite-smelting DC arc furnace process. Minerals Engineering, 2006, 19, 262-279.	1.8	31
25	Effect of Silicon on the Desulfurization of Al-Killed Steels: Part II. Experimental Results and Plant Trials. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2013, 44, 1095-1104.	1.0	31
26	Nature of MgO and Al2O3 Dissolution in Metallurgical Slags. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2015, 46, 2414-2418.	1.0	31
27	Automated Inclusion Microanalysis in Steel by Computer-Based Scanning Electron Microscopy: Accelerating Voltage, Backscattered Electron Image Quality, and Analysis Time. Microscopy and Microanalysis, 2017, 23, 1082-1090.	0.2	31
28	A Review of Steel Processing Considerations for Oxide Cleanliness. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2020, 51, 2437-2452.	1.0	29
29	The relationship between FeO and Ti2 O3 in ilmenite smelter slags. Scandinavian Journal of Metallurgy, 2002, 31, 120-125.	0.3	27
30	Oxidation of high-titanium slags in the presence of water vapour. Minerals Engineering, 2006, 19, 232-236.	1.8	27
31	High speed synchrotron X-ray diffraction experiments resolve microstructure and phase transformation in laser processed Ti-6Al-4V. Materials Research Letters, 2021, 9, 429-436.	4.1	27
32	Matrix Effects in the Energy Dispersive X-Ray Analysis of CaO-Al ₂ O ₃ -MgO Inclusions in Steel. Microscopy and Microanalysis, 2011, 17, 963-971.	0.2	25
33	Speed Disturbance Compenation in the Secondary Cooling Zone in Continuous Casting ISIJ International, 2000, 40, 469-477.	0.6	24
34	Calcium Modification of Inclusions via Slag/Metal Reactions. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2020, 51, 529-542.	1.0	23
35	Early Gaseous Oxygen Enrichment to Enhance Magnetite Pellet Oxidation. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2014, 45, 1304-1314.	1.0	22
36	Synthesis of Titanium Oxycarbide from Titanium Slag by Methane-Containing Gas. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2018, 49, 123-131.	1.0	21

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37	Magnetite Particle Size Distribution and Pellet Oxidation. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2014, 45, 1213-1220.	1.0	19
38	Study on Reduction of MoO ₂ Powders with CO to Produce Mo ₂ C. Journal of the American Ceramic Society, 2016, 99, 819-824.	1.9	19
39	Rate of MgO Pickup in Alumina Inclusions in Aluminum-Killed Steel. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2019, 50, 181-191.	1.0	18
40	MgO Refractory Attack by Transient Non-saturated EAF Slag. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2020, 51, 891-897.	1.0	18
41	Evaluation of a process that uses phosphate additions to upgrade titania slag. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 1999, 30, 823-829.	1.0	17
42	Modelling of the Off-gas Exit Temperature and Slag Foam Depth of an Electric Arc Furnace ISIJ International, 2001, 41, 399-401.	0.6	17
43	Heat transfer through mould flux with titanium oxide additions. Ironmaking and Steelmaking, 2007, 34, 513-520.	1.1	17
44	Ferrosilicon-Based Calcium Treatment of Aluminum-Killed and Silicomanganese-Killed Steels. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 6-16.	1.0	17
45	Localized Corrosion of Carbon Steel Weldments. Corrosion, 2000, 56, 1272-1279.	0.5	16
46	Modeling of Manganese Ferroalloy Slag Properties and Flow During Tapping. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2015, 46, 2639-2651.	1.0	16
47	Reduction Mechanisms in Manganese Ore Reduction. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2015, 46, 2534-2552.	1.0	16
48	Synthesis of Titanium Oxycarbide from Concentrates of Natural Ilmenite (Weathered and) Tj ETQq0 0 0 rgBT /Ov Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 2440-2446.	verlock 10 1.0	Tf 50 307 Td 16
49	Natural Gas Utilization in Blast Furnace Ironmaking: TuyÃ"re Injection, Shaft Injection and Prereduction. Minerals, Metals and Materials Series, 2017, , 283-292.	0.3	16
50	Development of a Reliable Kinetic Model for Ladle Refining. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2019, 50, 2163-2174.	1.0	15
51	Chemical Composition Modification of Inclusions in Steels by Controlled Ca Treatment. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 2837-2841.	1.0	14
52	Structure of Solidified Films of Mold Flux for Peritectic Steel. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 1652-1658.	1.0	13
53	Polydopamine Nanomembranes as Adhesion Layers for Improved Corrosion Resistance in Low Carbon Steel. Advanced Engineering Materials, 2018, 20, 1800621.	1.6	13
54	Build Rate Optimization for Powder Bed Fusion. Journal of Materials Engineering and Performance, 2019, 28, 641-647.	1.2	12

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55	Non-metallic Inclusion Evolution in a Liquid Third-Generation Advanced High-Strength Steel in Contact with Double-Saturated Slag. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 580-585.	1.0	12
56	Interface-Resolved Simulation of Bubbles–Metal–Slag Multiphase System in a Gas-Stirred Ladle. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 1532-1549.	1.0	12
57	Equilibrium slag losses in ferrovanadium production. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2000, 31, 1091-1097.	1.0	11
58	Role of silicate phases during comminution of titania slag. Minerals Engineering, 2009, 22, 182-189.	1.8	10
59	Wear Mechanisms of Carbon-Based Refractory Materials in Silicomanganese Tap Holesâ€"Part I: Equilibrium Calculations and Slag and Refractory Characterization. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2015, 46, 653-667.	1.0	10
60	Laboratory Carburization of Direct-Reduced Iron in CH4-H2-N2 Gas Mixtures, and Comparison with Industrial Samples. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2016, 47, 1538-1541.	1.0	10
61	Structure Evolution of Slag Films of Ultrahigh-Basicity Mold Flux During Solidification. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 1938-1942.	1.0	10
62	Improved cold-finger measurement of heat flux through solidified mould flux. Ironmaking and Steelmaking, 2018, 45, 502-508.	1.1	10
63	Isotope Exchange Measurements of the Interfacial Reaction Rate Constant of Nitrogen on Fe-Mn alloys and an Advanced High-Strength Steel. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 51-58.	1.0	10
64	Control of open slag bath furnaces at Highveld Steel and Vanadium Ltd: development of operator guidance tables. Ironmaking and Steelmaking, 2009, 36, 500-504.	1.1	9
65	Real time and in situ observation of graphene growth on liquid metal surfaces via a carbon segregation method using high-temperature confocal laser scanning microscopy. RSC Advances, 2016, 6, 101235-101241.	1.7	9
66	The Scrap Collection per Industry Sector and the Circulation Times of Steel in the U.S. between 1900 and 2016, Calculated Based on the Volume Correlation Model. Metals, 2018, 8, 338.	1.0	7
67	Carbon Bonding State Has a Small Effect on Melting of Direct-Reduced Iron. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2019, 50, 2508-2516.	1.0	7
68	Toward Multiscale Model Development for Multiphase Flow: Direct Numerical Simulation of Dispersed Phases and Multiscale Interfaces in a Gas-Stirred Ladle. Jom, 2021, 73, 2888-2899.	0.9	7
69	The Possibility of Using Elemental Analysis to Identify Debris from the Cutting of Mild Steel. Journal of Forensic Sciences, 1996, 41, 998-1004.	0.9	7
70	Kinetics of Nitrogen Removal from Liquid Third Generation Advanced High-Strength Steel by Tank Degassing. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2022, 53, 1383-1395.	1.0	7
71	Shielding Gas Oxygen Additions as a Means of Curbing Nitrogen Degassing During the Autogenous Arc Welding of Nitrogen-Alloyed Stainless Steel. Welding in the World, Le Soudage Dans Le Monde, 2009, 53, 38-47.	1.3	6
72	Bubbles in Process Metallurgy. , 2014, , 179-196.		6

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73	Use of slag (CaO-Al2O3-SiO2-MgO) droplet as a catalyst to grow MgO whiskers through VLS mechanism. Ceramics International, 2017, 43, 15478-15485.	2.3	6
74	Phase Characterization of High Basicity Manganese Slags. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 1463-1485.	1.0	6
75	Formation of Hematite Whiskers during Magnetite Concentrate Oxidation. ISIJ International, 2019, 59, 1765-1769.	0.6	6
76	Strength of Direct Reduced Iron Following Gas-Based Reduction and Carburization. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2020, 51, 2628-2641.	1.0	6
77	Nitrogen in SL/RN direct reduced iron: origin and effect on nitrogen control in EAF steelmaking. Ironmaking and Steelmaking, 2012, 39, 336-341.	1.1	5
78	Examples of How Fundamental Knowledge can Improve Steelmaking: Desulphurisation Kinetics Calcium and Modification. Transactions of the Indian Institute of Metals, 2013, 66, 519-523.	0.7	5
79	Calcium Transfer to Oxide Inclusions in Al-Killed Steel Without Calcium Treatment. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 163-177.	1.0	5
80	Effect of Ladle Furnace Slag Composition in Si-Mn Killed Steel Transient Inclusion Changes. , 2016, , 117-125.		5
81	A Study on Calcium Transfer from Slag to Steel and its Effect on Modification of Alumina and Spinel Inclusions. , 2016, , 145-153.		5
82	Modelling for Control of a Steckel Hot Rolling Mill ISIJ International, 2000, 40, 1003-1012.	0.6	4
83	Disintegration of Northern Cape iron ores under reducing conditions. Ironmaking and Steelmaking, 2009, 36, 354-362.	1.1	4
84	Effects of Thiocyanate on Anodic Dissolution of Iron, Chromium, Nickel and Type 304 Stainless Steel. Journal of the Electrochemical Society, 2012, 159, C513-C518.	1.3	4
85	Effects of Thiocyanate on Anodic Dissolution of Iron, Chromium and Type 430 Stainless Steel. Journal of the Electrochemical Society, 2012, 159, C114-C122.	1.3	4
86	Formation of Copper Sulfide Artifacts During Electrolytic Dissolution of Steel. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2013, 44, 483-486.	1.0	4
87	Wear Mechanisms of Carbon-Based Refractory Materials in SiMn Tap-Holesâ€"Part II: In Situ Observation of Chemical Reactions. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2015, 46, 668-679.	1.0	4
88	Recycling of Chromium-Containing Waste Oxide as Alloying Addition in Ladle Metallurgy. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 2612-2618.	1.0	4
89	Investigation into the Temperature of Metallic High-Temperature Confocal Scanning Laser Microscope Samples. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2022, 53, 2153-2165.	1.0	4
90	Kinetics of carbothermic reduction reactions under heat transfer control: modelling results. Scandinavian Journal of Metallurgy, 2005, 34, 122-130.	0.3	3

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91	Nickel, copper and cobalt distribution and equilibria in Anglo Platinum furnace slags. Institutions of Mining and Metallurgy Transactions Section C: Mineral Processing and Extractive Metallurgy, 2010, 119, 52-59.	0.6	3
92	Filler selection for weldments in type 316L stainless steel, for hot organic acid service. Corrosion Engineering Science and Technology, 2011, 46, 24-31.	0.7	3
93	Impurity Removal from Titanium Oxycarbide. Minerals, Metals and Materials Series, 2017, , 629-636.	0.3	3
94	Comparison of Methods for Electrochemical Iron Removal from Titanium Ores. Journal of Sustainable Metallurgy, 2017, 3, 711-719.	1.1	3
95	Mass Transfer in High-Temperature Laser Confocal Microscopy. Minerals, Metals and Materials Series, 2018, , 193-200.	0.3	3
96	Quantitative and Qualitative Aspects of Gas–Metal–Oxide Mass Transfer in High-Temperature Confocal Scanning Laser Microscopy. Jom, 2018, 70, 1193-1198.	0.9	3
97	Dissolution behavior of TiN in liquid cobalt. International Journal of Refractory Metals and Hard Materials, 2020, 92, 105271.	1.7	3
98	In Situ Observation of Reaction Fronts During the Initial Stages of Iron Surface Oxidation at 1150°C. Oxidation of Metals, 2020, 93, 449-463.	1.0	3
99	Catalytic graphitization of Glassy Carbon by Molten Fe-Csat. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 1-5.	1.0	3
100	Thermodynamic calculations for the chemical vapor deposition of hexagonal boron nitride using triethylboron, ammonia, and hydrogen. Journal of Crystal Growth, 2021, 572, 126283.	0.7	3
101	Production of Titanium Oxycarbide from Titania-Rich Mineral Sands. , 2015, , 297-304.		3
102	Gauge and Tension Control during the Acceleration Phase of a Steckel Hot Rolling Mill. ISIJ International, 2003, 43, 1562-1571.	0.6	3
103	Mould flux residues aid descaling of reheated austenitic stainless steel. Ironmaking and Steelmaking, 2010, 37, 57-62.	1.1	2
104	Partial slag solidification within ilmenite smelter. Institutions of Mining and Metallurgy Transactions Section C: Mineral Processing and Extractive Metallurgy, 2011, 120, 211-217.	0.6	2
105	Effects of Thiocyanate on Anodic Dissolution of Iron, Chromium, Nickel and Type 304 Stainless Steel. Journal of the Electrochemical Society, 2012, 159, C519-C524.	1.3	2
106	Application of Plasma FIB to Analyze a Single Oxide Inclusion in Steel. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2019, 50, 1124-1127.	1.0	2
107	Interfacial Reaction Rate Constant of Nitrogen with Liquid Cobalt Measured by Nitrogen Isotope Exchange. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 594-597.	1.0	2
108	Aluminum-Free Steelmaking: Desulfurization and Nonmetallic Inclusion Evolution of Si-Killed Steel in Contact with CaO-SiO2-CaF2-MgO Slag. Processes, 2021, 9, 1258.	1.3	2

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109	Liquid Inclusion Collision and Agglomeration in Calcium-Treated Aluminum-Killed Steel. Frontiers in Materials, $2021,8,\ldots$	1.2	2
110	Origin of Oxides and Oxide-Related Pores in Laser Powder Bed Fusion Parts., 2020,, 45-60.		2
111	Melting point determinations of -rich slag. Measurement Science and Technology, 1998, 9, 1728-1736.	1.4	1
112	Reduction in packed bed of iron ore and coal under one-dimensional heating: experimental results and modelling. Ironmaking and Steelmaking, 2009, 36, 363-370.	1.1	1
113	Effect of Mass Transfer Conditions on Double-Loop EPR Sensitization Testing of Austenitic Stainless Steel. ECS Electrochemistry Letters, 2015, 4, C27-C29.	1.9	1
114	Liquid Inclusion Distortion by Lens Shape Effect: In Situ Observation and Quantification on LCAK Steels Using HT-CSLM. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2019, 50, 2498-2501.	1.0	1
115	Use of improved cold-finger technique to assess effects of basicity on heat transfer through solidified mold flux. Journal of Iron and Steel Research International, 2019, 26, 393-402.	1.4	1
116	Fluxâ€Mediated Wetting of Alumina by Liquid Fe–Ti–C sat. Steel Research International, 0, , 2100068.	1.0	1
117	Ladle Metallurgy Kinetics: Inclusion-Inclusion Reactions. , 2014, , 341-346.		1
118	Prediction of Non-Isothermal Oxidation of Magnetite Pellets. , 2015, , 203-208.		1
119	Investigation into the dephosphorization of ferromanganese alloys for the production of advanced high-strength steel. Journal of the Southern African Institute of Mining and Metallurgy, 2021, 121, 1-9.	0.1	1
120	Measurement of reduction in packed bed of iron ore and carbon under one-dimensional heating. Ironmaking and Steelmaking, 2009, 36, 402-408.	1.1	0
121	Ladle Metallurgy Kinetics: Inclusion-Inclusion Reactions. , 0, , 341-346.		0
122	Comment on "Stable phase domains of the TiO ₂ 0 ₃ –TiO–Ti(C _{x<system 2014,="" <b="" a,="" and="" calculations―by="" chem.="" examined="" experimentally="" first="" j.="" kang,="" kim="" mater.="" principles="" s.="" via="">2, 2641. Journal of Materials Chemistry A, 2015, 3, 912-913.</system>}	:/syb>0<:	sub}y)
123	Significance of Pressure, Temperature and Reaction Rate Events in a Blast Furnace Simulation Test ISIJ International, 2000, 40, 1067-1072.	0.6	O
124	Upgrading of Iron-Rich Titanium Minerals Using a Molten Salt Process. , 2016, , 19-26.		0
125	Steelmaking Decarbonization Options with Current Technology. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, $0, 1$.	1.0	0
126	Build Surface Roughness and Internal Oxide Concentration for Laser Powder Bed Fusion of IN718. Journal of Manufacturing and Materials Processing, 2022, 6, 25.	1.0	0