List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/11084809/publications.pdf

Version: 2024-02-01

148 papers	21,402 citations	13099 68 h-index	9589 142 g-index
150 all docs	150 docs citations	150 times ranked	8837 citing authors

#	Article	IF	Citations
1	Solidification cracking of a nickel alloy during high-power keyhole mode laser welding. Journal of Materials Processing Technology, 2022, 305, 117576.	6.3	11
2	Mechanistic models for additive manufacturing of metallic components. Progress in Materials Science, 2021, 116, 100703.	32.8	246
3	Metallurgy, mechanistic models and machine learning in metal printing. Nature Reviews Materials, 2021, 6, 48-68.	48.7	220
4	Deposit geometry and oxygen concentration spatial variations due to composition change in printed functionally graded components. International Journal of Heat and Mass Transfer, 2021, 164, 120526.	4.8	2
5	Analytical estimation of fusion zone dimensions and cooling rates in part scale laser powder bed fusion. Additive Manufacturing, 2021, 46, 102222.	3.0	9
6	Residual stresses in wire-arc additive manufacturing â€“ Hierarchy of influential variables. Additive Manufacturing, 2020, 35, 101355.	3.0	40
7	Machine learning based hierarchy of causative variables for tool failure in friction stir welding. Acta Materialia, 2020, 192, 67-77.	7.9	37
8	Control of asymmetric track geometry in printed parts of stainless steels, nickel, titanium and aluminum alloys. Computational Materials Science, 2020, 182, 109791.	3.0	5
9	Scientific, technological and economic issues in metal printing and their solutions. Nature Materials, 2019, 18, 1026-1032.	27.5	336
10	Printability of 316 stainless steel. Science and Technology of Welding and Joining, 2019, 24, 412-419.	3.1	28
11	Three-dimensional grain growth during multi-layer printing of a nickel-based alloy Inconel 718. Additive Manufacturing, 2019, 25, 448-459.	3.0	64
12	Experiments and simulations on solidification microstructure for Inconel 718 in powder bed fusion electron beam additive manufacturing. Additive Manufacturing, 2019, 25, 511-521.	3.0	59
13	Laser weld geometry and microstructure of cast Uranium-6 wt% niobium alloy. Journal of Nuclear Materials, 2019, 514, 224-237.	2.7	6
14	Heat and fluid flow in additive manufacturingâ€"Part I: Modeling of powder bed fusion. Computational Materials Science, 2018, 150, 304-313.	3.0	127
15	Heat and fluid flow in additive manufacturing â€“ Part II: Powder bed fusion of stainless steel, and titanium, nickel and aluminum base alloys. Computational Materials Science, 2018, 150, 369-380.	3.0	169
16	Additive manufacturing of metallic components â€“ Process, structure and properties. Progress in Materials Science, 2018, 92, 112-224.	32.8	4,751
17	Special features of double pulsed gas metal arc welding. Journal of Materials Processing Technology, 2018, 251, 369-375.	6.3	48
18	Residual stresses and distortion in additively manufactured compositionally graded and dissimilar joints. Computational Materials Science, 2018, 143, 325-337.	3.0	91

#	Article	IF	Citations
19	Mitigation of lack of fusion defects in powder bed fusion additive manufacturing. Journal of Manufacturing Processes, 2018, 36, 442-449.	5.9	141
20	The Hardness of Additively Manufactured Alloys. Materials, 2018, 11, 2070.	2.9	94
21	Fusion zone geometries, cooling rates and solidification parameters during wire arc additive manufacturing. International Journal of Heat and Mass Transfer, 2018, 127, 1084-1094.	4.8	130
22	Three-dimensional modeling of grain structure evolution during welding of an aluminum alloy. Acta Materialia, 2017, 126, 413-425.	7.9	132
23	Dimensionless numbers in additive manufacturing. Journal of Applied Physics, 2017, 121, .	2.5	115
24	Crystal growth during keyhole mode laser welding. Acta Materialia, 2017, 133, 10-20.	7.9	86
25	Building blocks for a digital twin of additive manufacturing. Acta Materialia, 2017, 135, 390-399.	7.9	258
26	A pathway to microstructural refinement through double pulsed gas metal arc welding. Scripta Materialia, 2017, 134, 61-65.	5.2	48
27	Building digital twins of 3D printing machines. Scripta Materialia, 2017, 135, 119-124.	5.2	170
28	An improved prediction of residual stresses and distortion in additive manufacturing. Computational Materials Science, 2017, 126, 360-372.	3.0	543
29	Mitigation of thermal distortion during additive manufacturing. Scripta Materialia, 2017, 127, 79-83.	5.2	151
30	Heat and Fluid Flow Modeling to Examine 3D-Printability of Alloys. , 2016, , 471-478.		4
31	Grain Growth Modeling for Additive Manufacturing of Nickel Based Superalloys. , 2016, , 265-269.		9
32	Printability of alloys for additive manufacturing. Scientific Reports, 2016, 6, 19717.	3.3	319
33	Origin of grain orientation during solidification of an aluminum alloy. Acta Materialia, 2016, 115, 123-131.	7.9	189
34	Evolution of solidification texture during additive manufacturing. Scientific Reports, 2015, 5, 16446.	3.3	337
35	Asymmetry in steel welds with dissimilar amounts of sulfur. Scripta Materialia, 2015, 108, 88-91.	5.2	19
36	Spatial variation of melt pool geometry, peak temperature and solidification parameters during laser assisted additive manufacturing process. Materials Science and Technology, 2015, 31, 924-930.	1.6	202

#	Article	IF	Citations
37	Cooling rates and peak temperatures during friction stir welding of a high-carbon steel. Scripta Materialia, 2015, 94, 36-39.	5.2	48
38	Real time monitoring of laser beam welding keyhole depth by laser interferometry. Science and Technology of Welding and Joining, 2014, 19, 560-564.	3.1	42
39	Solidification Map of a Nickel-Base Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 2142-2151.	2.2	68
40	Friction stir welding of mild steel: Tool durability and steel microstructure. Materials Science and Technology, 2014, 30, 1050-1056.	1.6	40
41	Heat transfer and material flow during laser assisted multi-layer additive manufacturing. Journal of Applied Physics, 2014, 116, .	2.5	249
42	Material adhesion and stresses on friction stir welding tool pins. Science and Technology of Welding and Joining, 2014, 19, 534-540.	3.1	36
43	Heat transfer and fluid flow in additive manufacturing. Journal of Laser Applications, 2013, 25, .	1.7	117
44	Neural network models of peak temperature, torque, traverse force, bending stress and maximum shear stress during friction stir welding. Science and Technology of Welding and Joining, 2012, 17, 460-466.	3.1	42
45	Evolution of laser-fired aluminum-silicon contact geometry in photovoltaic devices. Journal of Applied Physics, 2012, 111, 024903.	2.5	6
46	Laser-silicon interaction for selective emitter formation in photovoltaics. II. Model applications. Journal of Applied Physics, 2012, 112, .	2.5	10
47	Load bearing capacity of tool pin during friction stir welding. International Journal of Advanced Manufacturing Technology, 2012, 61, 911-920.	3.0	93
48	Tool durability maps for friction stir welding of an aluminium alloy. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 3552-3570.	2.1	32
49	Review: Friction stir welding tools. Science and Technology of Welding and Joining, 2011, 16, 325-342.	3.1	623
50	Influence of oxygen on weld geometry in fibre laser and fibre laserâ€“GMA hybrid welding. Science and Technology of Welding and Joining, 2011, 16, 166-173.	3.1	20
51	Toward optimum friction stir welding tool shoulder diameter. Scripta Materialia, 2011, 64, 9-12.	5.2	219
52	Tool Geometry for Friction Stir Weldingâ€"Optimum Shoulder Diameter. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 2716-2722.	2.2	94
53	Back-of-the-envelope calculations in friction stir welding â€" Velocities, peak temperature, torque, and hardness. Acta Materialia, 2011, 59, 2020-2028.	7.9	70
54	Role of surface-active elements during keyhole-mode laser welding. Journal Physics D: Applied Physics, 2011, 44, 485203.	2.8	24

#	Article	IF	Citations
55	1000 gems: Celebration of <i>STWJ</i>. Science and Technology of Welding and Joining, 2011, 16, 285-287.	3.1	0
56	A perspective on residual stresses in welding. Science and Technology of Welding and Joining, 2011, 16, 204-208.	3.1	72
57	Optical emission spectroscopy of metal vapor dominated laser-arc hybrid welding plasma. Journal of Applied Physics, 2011, 109, .	2.5	27
58	Friction stir welding of dissimilar alloys â€“ a perspective. Science and Technology of Welding and Joining, 2010, 15, 266-270.	3.1	243
59	Cooling rate in 800 to 500Â°C range from dimensional analysis. Science and Technology of Welding and Joining, 2010, 15, 423-427.	3.1	15
60	A Genetic Algorithm-Assisted Inverse Convective Heat Transfer Model for Tailoring Weld Geometry. Materials and Manufacturing Processes, 2009, 24, 384-397.	4.7	28
61	Problems and issues in laser-arc hybrid welding. International Materials Reviews, 2009, 54, 223-244.	19.3	193
62	Torque, power requirement and stir zone geometry in friction stir welding through modeling and experiments. Scripta Materialia, 2009, 60, 13-16.	5.2	154
63	Unusual wavy weld pool boundary from dimensional analysis. Scripta Materialia, 2009, 60, 68-71.	5.2	46
64	Strains and strain rates during friction stir welding. Scripta Materialia, 2009, 61, 863-866.	5.2	171
65	The effects of Prandtl number on wavy weld boundary. International Journal of Heat and Mass Transfer, 2009, 52, 3790-3798.	4.8	28
66	Origin of wavy weld boundary. Journal of Applied Physics, 2009, 105, .	2.5	15
67	Heat transfer and fluid flow during electron beam welding of 21Crâ€“6Niâ€“9Mn steel and Tiâ€“6Alâ€“4V alloy. Journal Physics D: Applied Physics, 2009, 42, 025503.	2.8	113
68	Critical assessment: Friction stir welding of steels. Science and Technology of Welding and Joining, 2009, 14, 193-196.	3.1	121
69	A Convective Heat-Transfer Model for Partial and Full Penetration Keyhole Mode Laser Welding of a Structural Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2008, 39, 98-112.	2.2	97
70	Recent advances in friction-stir welding â€“ Process, weldment structure and properties. Progress in Materials Science, 2008, 53, 980-1023.	32.8	1,729
71	An experimental and theoretical study of gas tungsten arc welding of stainless steel plates with different sulfur concentrations. Acta Materialia, 2008, 56, 2133-2146.	7.9	70
72	Toward reliable calculations of heat and plastic flow during friction stir welding of Ti-6Al-4V alloy. International Journal of Materials Research, 2008, 99, 434-444.	0.3	60

#	Article	IF	Citations
73	Time resolved X-ray diffraction observations of phase transformations in transient arc welds. Science and Technology of Welding and Joining, 2008, 13, 265-277.	3.1	24
74	Numerical simulation of heat transfer and fluid flow in GTA/Laser hybrid welding. Science and Technology of Welding and Joining, 2008, 13, 683-693.	3.1	96
75	A computationally efficient model of convective heat transfer and solidification characteristics during keyhole mode laser welding. Journal of Applied Physics, 2007, 101, 054909.	2.5	75
76	Heat transfer and fluid flow during keyhole mode laser welding of tantalum, Tiâ€“6Alâ€“4V, 304L stainless steel and vanadium. Journal Physics D: Applied Physics, 2007, 40, 5753-5766.	2.8	333
77	Three-dimensional heat and material flow during friction stir welding of mild steel. Acta Materialia, 2007, 55, 883-895.	7.9	528
78	Heat Transfer and Fluid Flow during Gas-Metal-Arc Fillet Welding for Various Joint Configurations and Welding Positions. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2007, 38, 506-519.	2.2	63
79	Numerical modelling of 3D plastic flow and heat transfer during friction stir welding of stainless steel. Science and Technology of Welding and Joining, 2006, 11, 526-537.	3.1	206
80	Non-isothermal grain growth in metals and alloys. Materials Science and Technology, 2006, 22, 253-278.	1.6	50
81	Numerical simulation of three-dimensional heat transfer and plastic flow during friction stir welding. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2006, 37, 1247-1259.	2.2	288
82	Improving reliability of heat and fluid flow calculation during conduction mode laser spot welding by multivariable optimisation. Science and Technology of Welding and Joining, 2006, 11, 143-153.	3.1	49
83	Liquid metal expulsion during laser spot welding of 304 stainless steel. Journal Physics D: Applied Physics, 2006, 39, 525-534.	2.8	47
84	Dimensionless correlation to estimate peak temperature during friction stir welding. Science and Technology of Welding and Joining, 2006, 11, 606-608.	3.1	44
85	Tailoring weld geometry during keyhole mode laser welding using a genetic algorithm and a heat transfer model. Journal Physics D: Applied Physics, 2006, 39, 1257-1266.	2.8	34
86	Mathematical modeling of heat transfer, fluid flow, and solidification during linear welding with a pulsed laser beam. Journal of Applied Physics, 2006, 100, 034903.	2.5	46
87	Modeling of ferrite formation in a duplex stainless steel weld considering non-uniform starting microstructure. Acta Materialia, 2005, 53, 4441-4453.	7.9	43
88	Optimization of the johnson-mehl-avarami equation parameters for Î±-ferrite to Î³-austenite transformation in steel welds using a genetic algorithm. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 15-22.	2.2	31
89	Tailoring complex weld geometry through reliable heat-transfer and fluid-flow calculations and a genetic algorithm. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 2725-2735.	2.2	14
90	Integrated modelling of thermal cycles, austenite formation, grain growth and decomposition in the heat affected zone of carbon steel. Science and Technology of Welding and Joining, 2005, 10, 574-582.	3.1	33

#	Article	IF	Citations
91	Improving reliability of modelling heat and fluid flow in complex gas metal arc fillet weldsâ€"part I: an engineering physics model. Journal Physics D: Applied Physics, 2005, 38, 119-126.	2.8	14
92	A computational procedure for finding multiple solutions of convective heat transfer equations. Journal Physics D: Applied Physics, 2005, 38, 2977-2985.	2.8	32
93	Improving reliability of modelling heat and fluid flow in complex gas metal arc fillet weldsâ€"part II: application to welding of steel. Journal Physics D: Applied Physics, 2005, 38, 127-134.	2.8	12
94	Probing liquation cracking and solidification through modeling of momentum, heat, and solute transport during welding of aluminum alloys. Journal of Applied Physics, 2005, 97, 094912.	2.5	24
95	A heat-transfer and fluid-flow-based model to obtain a specific weld geometry using various combinations of welding variables. Journal of Applied Physics, 2005, 98, 044902.	2.5	67
96	Heat transfer and fluid flow in laser microwelding. Journal of Applied Physics, 2005, 97, 084909.	2.5	117
97	A Smart Bi-Directional Model of Heat Transfer and Free Surface Flow in Gas-Metal-Arc Fillet Welding for Practising Engineers. Welding in the World, Le Soudage Dans Le Monde, 2005, 49, 32-48.	2.5	7
98	Grain topology in Tiâ€"6Alâ€"4V weldsâ€"Monte Carlo simulation and experiments. Journal Physics D: Applied Physics, 2004, 37, 2191-2196.	2.8	22
99	Composition change of stainless steel during microjoining with short laser pulse. Journal of Applied Physics, 2004, 96, 4547-4555.	2.5	48
100	Guaranteed fillet weld geometry from heat transfer model and multivariable optimization. International Journal of Heat and Mass Transfer, 2004, 47, 5793-5806.	4.8	35
101	Heat and fluid flow in complex joints during gas metal arc weldingâ€"Part II: Application to fillet welding of mild steel. Journal of Applied Physics, 2004, 95, 5220-5229.	2.5	78
102	Probing unknown welding parameters from convective heat transfer calculation and multivariable optimization. Journal Physics D: Applied Physics, 2004, 37, 140-150.	2.8	56
103	Heat and fluid flow in complex joints during gas metal arc weldingâ€"Part I: Numerical model of fillet welding. Journal of Applied Physics, 2004, 95, 5210-5219.	2.5	103
104	A smart model to estimate effective thermal conductivity and viscosity in the weld pool. Journal of Applied Physics, 2004, 95, 5230-5240.	2.5	106
105	Phase transformation dynamics during welding of Tiâ€"6Alâ€"4V. Journal of Applied Physics, 2004, 95, 8327-8339.	2.5	214
106	Kinetic modeling of phase transformations occurring in the HAZ of C-Mn steel welds based on direct observations. Acta Materialia, 2003, 51, 3333-3349.	7.9	97
107	Heat transfer and fluid flow during laser spot welding of 304 stainless steel. Journal Physics D: Applied Physics, 2003, 36, 1388-1398.	2.8	253
108	Calculation of three-dimensional electromagnetic force field during arc welding. Journal of Applied Physics, 2003, 94, 1267-1277.	2.5	95

#	Article	IF	Citations
109	Modeling of temperature field and solidified surface profile during gasâ€“metal arc fillet welding. Journal of Applied Physics, 2003, 94, 2667-2679.	2.5	126
110	Probing temperature during laser spot welding from vapor composition and modeling. Journal of Applied Physics, 2003, 94, 6949-6958.	2.5	66
111	Modeling of heat transfer and fluid flow during gas tungsten arc spot welding of low carbon steel. Journal of Applied Physics, 2003, 93, 3022-3033.	2.5	177
112	Alloying element vaporization during laser spot welding of stainless steel. Journal Physics D: Applied Physics, 2003, 36, 3079-3088.	2.8	77
113	Macroporosity free aluminum alloy weldments through numerical simulation of keyhole mode laser welding. Journal of Applied Physics, 2003, 93, 10089-10096.	2.5	104
114	Modeling and real time mapping of phases during GTA welding of 1005 steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2002, 333, 320-335.	5.6	79
115	Weld metal composition change during conduction mode laser welding of aluminum alloy 5182. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2001, 32, 163-172.	2.1	167
116	Three dimensional Monte Carlo simulation of grain growth during GTA welding of titanium. Acta Materialia, 2000, 48, 4813-4825.	7.9	112
117	Numerical modeling of enhanced nitrogen dissolution during gas tungsten Arc welding. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2000, 31, 1371-1385.	2.1	30
118	Modeling of inclusion growth and dissolution in the weld pool. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2000, 31, 161-169.	2.1	38
119	Modeling macro-and microstructures of Gas-Metal-Arc Welded HSLA-100 steel. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 1999, 30, 483-493.	2.1	91
120	Current issues and problems in laser welding of automotive aluminium alloys. International Materials Reviews, 1999, 44, 238-266.	19.3	277
121	Quantitative modelling of motion, temperature gyrations, and growth of inclusions in weld pool. Science and Technology of Welding and Joining, 1998, 3, 33-41.	3.1	23
122	Enhanced dissolution of nitrogen during gas tungsten arc welding of steels. Science and Technology of Welding and Joining, 1998, 3, 190-203.	3.1	21
123	Weld metal microstructure prediction from fundamentals of transport phenomena and phase transformation theory. Science and Technology of Welding and Joining, 1997, 2, 53-58.	3.1	11
124	Absorption and transport of hydrogen during gas metal arc welding of low alloy steel. Science and Technology of Welding and Joining, 1997, 2, 174-184.	3.1	33
125	Absorption and transport of hydrogen during gas metal arc welding of low alloy steel. Science and Technology of Welding and Joining, 1997, 2, 174-184.	3.1	6
126	NUMERICAL PREDICTION OF FLUID FLOW AND HEAT TRANSFER IN WELDING WITH A MOVING HEAT SOURCE. Numerical Heat Transfer; Part A: Applications, 1996, 29, 115-129.	2.1	127

#	Article	IF	Citations
127	Coarsening of oxide inclusions in low alloy steel welds. Science and Technology of Welding and Joining, 1996, 1, 17-27.	3.1	26
128	Development of macro- and microstructures of carbonâ€“manganese low alloy steel welds: inclusion formation. Materials Science and Technology, 1995, 11, 186-199.	1.6	104
129	Physical processes in fusion welding. Reviews of Modern Physics, 1995, 67, 85-112.	45.6	443
130	Phenomenological Modeling of Fusion Welding Processes. MRS Bulletin, 1994, 19, 29-35.	3.5	52
131	Calculation of weld metal composition change in high-power conduction mode carbon dioxide laser-welded stainless steels. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1993, 24, 145-155.	0.4	65
132	Current Issues and Problems in Welding Science. Science, 1992, 257, 497-502.	12.6	224
133	Liquid metal expulsion during laser irradiation. Journal of Applied Physics, 1992, 72, 3317-3322.	2.5	57
134	Nitrogen activity determination in plasmas. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1992, 23, 207-214.	0.4	27
135	Effect of temperature and composition on surface tension in Fe-Ni-Cr alloys containing sulfur. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1991, 22, 557-560.	0.4	98
136	Probing laser induced metal vaporization by gas dynamics and liquid pool transport phenomena. Journal of Applied Physics, 1991, 70, 1313-1319.	2.5	52
137	Modeling of interfacial phenomena in welding. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1990, 21, 600-603.	0.4	31
138	Energy absorption by metalâ€vaporâ€dominated plasma during carbon dioxide laser welding of steels. Journal of Applied Physics, 1990, 68, 2045-2050.	2.5	74
139	Heat transfer during Nd: Yag pulsed laser welding and its effect on solidification structure of austenitic stainless steels. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1989, 20, 957-967.	1.4	101
140	Emission spectroscopy of plasma during laser welding of AISI 201 stainless steel. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 1989, 20, 277-286.	2.1	51
141	Free surface flow and heat transfer in conduction mode laser welding. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1988, 19, 851-858.	0.4	119
142	Effects of oxygen and sulfur on alloying element vaporization rates during laser welding. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1988, 19, 967-972.	0.4	39
143	Surface tension of binary metalâ€"surface active solute systems under conditions relevant to welding metallurgy. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1988, 19, 483-491.	0.4	461
144	Interfacial tension between low pressure argon plasma and molten copper and iron. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1987, 18, 597-601.	0.4	21

#	Article	IF	Citations
145	Mechanism of alloying element vaporization during laser welding. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1987, 18, 733-740.	0.4	102
146	Absorption of CO2 laser beam by AISI 4340 steel. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1985, 16, 853-856.	0.4	19
147	Alloying element vaporization and weld pool temperature during laser welding of AISI 202 stainless steel. Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science, 1984, 15, 641-644.	0.4	66
148	Grain Growth Modeling for Additive Manufacturing of Nickel Based Superalloys. , 0, , 265-269.		4