

Tarasankar DebRoy

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235
papers

16,928
citations

65
h-index

125
g-index

253
ext. papers

19,990
ext. citations

5.3
avg, IF

7.2
L-index

#	Paper	IF	Citations
235	Additive manufacturing of metallic components [Process, structure and properties. <i>Progress in Materials Science</i> , 2018 , 92, 112-224	42.2	2682
234	Recent advances in friction-stir welding [Process, weldment structure and properties. <i>Progress in Materials Science</i> , 2008 , 53, 980-1023	42.2	1484
233	Review: friction stir welding tools. <i>Science and Technology of Welding and Joining</i> , 2011 , 16, 325-342	3.7	484
232	Three-dimensional heat and material flow during friction stir welding of mild steel. <i>Acta Materialia</i> , 2007 , 55, 883-895	8.4	442
231	Surface tension of binary metal-surface active solute systems under conditions relevant to welding metallurgy. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1988 , 19, 483-491		365
230	Physical processes in fusion welding. <i>Reviews of Modern Physics</i> , 1995 , 67, 85-112	40.5	364
229	An improved prediction of residual stresses and distortion in additive manufacturing. <i>Computational Materials Science</i> , 2017 , 126, 360-372	3.2	349
228	Heat transfer and fluid flow during keyhole mode laser welding of tantalum, Ti-6Al-4V, 304L stainless steel and vanadium. <i>Journal Physics D: Applied Physics</i> , 2007 , 40, 5753-5766	3	262
227	Numerical simulation of three-dimensional heat transfer and plastic flow during friction stir welding. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2006 , 37, 1247-1259	2.3	239
226	Evolution of solidification texture during additive manufacturing. <i>Scientific Reports</i> , 2015 , 5, 16446	4.9	229
225	Current issues and problems in laser welding of automotive aluminium alloys. <i>International Materials Reviews</i> , 1999 , 44, 238-266	16.1	221
224	Printability of alloys for additive manufacturing. <i>Scientific Reports</i> , 2016 , 6, 19717	4.9	210
223	Heat transfer and fluid flow during laser spot welding of 304 stainless steel. <i>Journal Physics D: Applied Physics</i> , 2003 , 36, 1388-1398	3	208
222	Friction stir welding of dissimilar alloys [a perspective. <i>Science and Technology of Welding and Joining</i> , 2010 , 15, 266-270	3.7	202
221	Current issues and problems in welding science. <i>Science</i> , 1992 , 257, 497-502	33.3	191
220	Building blocks for a digital twin of additive manufacturing. <i>Acta Materialia</i> , 2017 , 135, 390-399	8.4	182
219	Phase transformation dynamics during welding of Ti-6Al-4V. <i>Journal of Applied Physics</i> , 2004 , 95, 8327-8339	3.5	178

218	Heat transfer and material flow during laser assisted multi-layer additive manufacturing. <i>Journal of Applied Physics</i> , 2014 , 116, 124905	2.5	177
217	Toward optimum friction stir welding tool shoulder diameter. <i>Scripta Materialia</i> , 2011 , 64, 9-12	5.6	176
216	Scientific, technological and economic issues in metal printing and their solutions. <i>Nature Materials</i> , 2019 , 18, 1026-1032	27	164
215	Numerical modelling of 3D plastic flow and heat transfer during friction stir welding of stainless steel. <i>Science and Technology of Welding and Joining</i> , 2006 , 11, 526-537	3.7	160
214	Problems and issues in laser-arc hybrid welding. <i>International Materials Reviews</i> , 2009 , 54, 223-244	16.1	156
213	Spatial variation of melt pool geometry, peak temperature and solidification parameters during laser assisted additive manufacturing process. <i>Materials Science and Technology</i> , 2015 , 31, 924-930	1.5	154
212	Modeling of heat transfer and fluid flow during gas tungsten arc spot welding of low carbon steel. <i>Journal of Applied Physics</i> , 2003 , 93, 3022-3033	2.5	152
211	Weld metal composition change during conduction mode laser welding of aluminum alloy 5182. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2001 , 32, 163-172	2.5	144
210	Strains and strain rates during friction stir welding. <i>Scripta Materialia</i> , 2009 , 61, 863-866	5.6	143
209	Torque, power requirement and stir zone geometry in friction stir welding through modeling and experiments. <i>Scripta Materialia</i> , 2009 , 60, 13-16	5.6	132
208	Origin of grain orientation during solidification of an aluminum alloy. <i>Acta Materialia</i> , 2016 , 115, 123-131	8.4	122
207	Building digital twins of 3D printing machines. <i>Scripta Materialia</i> , 2017 , 135, 119-124	5.6	115
206	Modeling of temperature field and solidified surface profile during gas metal arc fillet welding. <i>Journal of Applied Physics</i> , 2003 , 94, 2667-2679	2.5	112
205	NUMERICAL PREDICTION OF FLUID FLOW AND HEAT TRANSFER IN WELDING WITH A MOVING HEAT SOURCE. <i>Numerical Heat Transfer; Part A: Applications</i> , 1996 , 29, 115-129	2.3	110
204	Mitigation of thermal distortion during additive manufacturing. <i>Scripta Materialia</i> , 2017 , 127, 79-83	5.6	108
203	Critical assessment: friction stir welding of steels. <i>Science and Technology of Welding and Joining</i> , 2009 , 14, 193-196	3.7	108
202	Heat and fluid flow in additive manufacturing [Part II: Powder bed fusion of stainless steel, and titanium, nickel and aluminum base alloys. <i>Computational Materials Science</i> , 2018 , 150, 369-380	3.2	106
201	Origin of stray grain formation in single-crystal superalloy weld pools from heat transfer and fluid flow modeling. <i>Acta Materialia</i> , 2010 , 58, 1441-1454	8.4	105

200	Free surface flow and heat transfer in conduction mode laser welding. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1988 , 19, 851-858		105
199	Three dimensional Monte Carlo simulation of grain growth during GTA welding of titanium. <i>Acta Materialia</i> , 2000 , 48, 4813-4825	8.4	100
198	A digital twin for rapid qualification of 3D printed metallic components. <i>Applied Materials Today</i> , 2019 , 14, 59-65	6.6	97
197	Macroporosity free aluminum alloy weldments through numerical simulation of keyhole mode laser welding. <i>Journal of Applied Physics</i> , 2003 , 93, 10089-10096	2.5	95
196	Heat transfer and fluid flow in laser microwelding. <i>Journal of Applied Physics</i> , 2005 , 97, 084909	2.5	92
195	Mechanistic models for additive manufacturing of metallic components. <i>Progress in Materials Science</i> , 2021 , 116, 100703	42.2	92
194	Three-dimensional modeling of grain structure evolution during welding of an aluminum alloy. <i>Acta Materialia</i> , 2017 , 126, 413-425	8.4	90
193	A smart model to estimate effective thermal conductivity and viscosity in the weld pool. <i>Journal of Applied Physics</i> , 2004 , 95, 5230-5240	2.5	89
192	Heat transfer and fluid flow during electron beam welding of 21CrNi9Mn steel and TiAlV alloy. <i>Journal Physics D: Applied Physics</i> , 2009 , 42, 025503	3	87
191	Effect of temperature and composition on surface tension in Fe-Ni-Cr alloys containing sulfur. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1991 , 22, 557-560		87
190	Heat transfer and fluid flow in additive manufacturing. <i>Journal of Laser Applications</i> , 2013 , 25, 052006	2.1	86
189	Heat and fluid flow in complex joints during gas metal arc welding Part I: Numerical model of fillet welding. <i>Journal of Applied Physics</i> , 2004 , 95, 5210-5219	2.5	86
188	Kinetic modeling of phase transformations occurring in the HAZ of C-Mn steel welds based on direct observations. <i>Acta Materialia</i> , 2003 , 51, 3333-3349	8.4	85
187	Heat and fluid flow in additive manufacturing Part I: Modeling of powder bed fusion. <i>Computational Materials Science</i> , 2018 , 150, 304-313	3.2	84
186	Heat transfer during Nd: Yag pulsed laser welding and its effect on solidification structure of austenitic stainless steels. <i>Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science</i> , 1989 , 20, 957-967		84
185	Metallurgy, mechanistic models and machine learning in metal printing. <i>Nature Reviews Materials</i> , 2021 , 6, 48-68	73.3	84
184	Numerical simulation of heat transfer and fluid flow in GTA/Laser hybrid welding. <i>Science and Technology of Welding and Joining</i> , 2008 , 13, 683-693	3.7	83
183	Mechanism of alloying element vaporization during laser welding. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1987 , 18, 733-740		82

182	Development of macro- and microstructures of carbon-manganese low alloy steel welds: inclusion formation. <i>Materials Science and Technology</i> , 1995 , 11, 186-199	1.5	79
181	Mitigation of lack of fusion defects in powder bed fusion additive manufacturing. <i>Journal of Manufacturing Processes</i> , 2018 , 36, 442-449	5	79
180	Calculation of three-dimensional electromagnetic force field during arc welding. <i>Journal of Applied Physics</i> , 2003 , 94, 1267-1277	2.5	78
179	Modeling macro-and microstructures of Gas-Metal-Arc Welded HSLA-100 steel. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 1999 , 30, 483-493	2.5	78
178	Load bearing capacity of tool pin during friction stir welding. <i>International Journal of Advanced Manufacturing Technology</i> , 2012 , 61, 911-920	3.2	76
177	A Convective Heat-Transfer Model for Partial and Full Penetration Keyhole Mode Laser Welding of a Structural Steel. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2008 , 39, 98-112	2.3	74
176	Tool Geometry for Friction Stir Welding Optimum Shoulder Diameter. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2011 , 42, 2716-2722	2.3	73
175	Fusion zone geometries, cooling rates and solidification parameters during wire arc additive manufacturing. <i>International Journal of Heat and Mass Transfer</i> , 2018 , 127, 1084-1094	4.9	69
174	Residual stresses and distortion in additively manufactured compositionally graded and dissimilar joints. <i>Computational Materials Science</i> , 2018 , 143, 325-337	3.2	68
173	Heat and fluid flow in complex joints during gas metal arc welding Part II: Application to fillet welding of mild steel. <i>Journal of Applied Physics</i> , 2004 , 95, 5220-5229	2.5	67
172	Alloying element vaporization during laser spot welding of stainless steel. <i>Journal Physics D: Applied Physics</i> , 2003 , 36, 3079-3088	3	66
171	Dimensionless numbers in additive manufacturing. <i>Journal of Applied Physics</i> , 2017 , 121, 064904	2.5	65
170	Crystal growth during keyhole mode laser welding. <i>Acta Materialia</i> , 2017 , 133, 10-20	8.4	65
169	Modeling and real time mapping of phases during GTA welding of 1005 steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2002 , 333, 320-335	5.3	64
168	Role of heat transfer and fluid flow in the chemical vapor deposition of diamond. <i>Journal of Applied Physics</i> , 1990 , 68, 2424-2432	2.5	64
167	Back-of-the-envelope calculations in friction stir welding Velocities, peak temperature, torque, and hardness. <i>Acta Materialia</i> , 2011 , 59, 2020-2028	8.4	61
166	Energy absorption by metal-vapor-dominated plasma during carbon dioxide laser welding of steels. <i>Journal of Applied Physics</i> , 1990 , 68, 2045-2050	2.5	61
165	An experimental and theoretical study of gas tungsten arc welding of stainless steel plates with different sulfur concentrations. <i>Acta Materialia</i> , 2008 , 56, 2133-2146	8.4	60

164	Calculation of weld metal composition change in high-power conduction mode carbon dioxide laser-welded stainless steels. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1993 , 24, 145-155		60
163	A computationally efficient model of convective heat transfer and solidification characteristics during keyhole mode laser welding. <i>Journal of Applied Physics</i> , 2007 , 101, 054909	2.5	59
162	Alloying element vaporization and weld pool temperature during laser welding of AISI 202 stainless steel. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1984 , 15, 641-644		59
161	Probing temperature during laser spot welding from vapor composition and modeling. <i>Journal of Applied Physics</i> , 2003 , 94, 6949-6958	2.5	58
160	A heat-transfer and fluid-flow-based model to obtain a specific weld geometry using various combinations of welding variables. <i>Journal of Applied Physics</i> , 2005 , 98, 044902	2.5	56
159	The Hardness of Additively Manufactured Alloys. <i>Materials</i> , 2018 , 11,	3.5	56
158	Toward an integrated computational system for describing the additive manufacturing process for metallic materials. <i>Additive Manufacturing</i> , 2014 , 1-4, 52-63	6.1	54
157	Additive manufacturing of functionally graded transition joints between ferritic and austenitic alloys. <i>Journal of Alloys and Compounds</i> , 2019 , 770, 995-1003	5.7	52
156	Heat Transfer and Fluid Flow during Gas-Metal-Arc Fillet Welding for Various Joint Configurations and Welding Positions. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2007 , 38, 506-519	2.3	51
155	Probing unknown welding parameters from convective heat transfer calculation and multivariable optimization. <i>Journal Physics D: Applied Physics</i> , 2004 , 37, 140-150	3	51
154	Solidification Map of a Nickel-Base Alloy. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014 , 45, 2142-2151	2.3	50
153	Continuous wave-Nd: yttrium-aluminum-garnet laser welding of AM60B magnesium alloy. <i>Journal of Laser Applications</i> , 2000 , 12, 91-100	2.1	50
152	Stray Grain Formation in Welds of Single-Crystal Ni-Base Superalloy CMSX-4. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2010 , 41, 181-193	2.3	49
151	Toward reliable calculations of heat and plastic flow during friction stir welding of Ti-6Al-4V alloy. <i>International Journal of Materials Research</i> , 2008 , 99, 434-444	0.5	49
150	Phenomenological Modeling of Fusion Welding Processes. <i>MRS Bulletin</i> , 1994 , 19, 29-35	3.2	49
149	Three-dimensional grain growth during multi-layer printing of a nickel-based alloy Inconel 718. <i>Additive Manufacturing</i> , 2019 , 25, 448-459	6.1	49
148	Liquid metal expulsion during laser irradiation. <i>Journal of Applied Physics</i> , 1992 , 72, 3317-3322	2.5	47
147	Experiments and simulations on solidification microstructure for Inconel 718 in powder bed fusion electron beam additive manufacturing. <i>Additive Manufacturing</i> , 2019 , 25, 511-521	6.1	47

146	Oxidation of diamond films synthesized by hot filament assisted chemical vapor deposition. <i>Journal of Materials Research</i> , 1990 , 5, 2483-2489	2.5	45
145	Emission spectroscopy of plasma during laser welding of AISI 201 stainless steel. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 1989 , 20, 277-286	2.5	44
144	Probing laser induced metal vaporization by gas dynamics and liquid pool transport phenomena. <i>Journal of Applied Physics</i> , 1991 , 70, 1313-1319	2.5	42
143	Cooling rates and peak temperatures during friction stir welding of a high-carbon steel. <i>Scripta Materialia</i> , 2015 , 94, 36-39	5.6	40
142	Composition change of stainless steel during microjoining with short laser pulse. <i>Journal of Applied Physics</i> , 2004 , 96, 4547-4555	2.5	40
141	Three-dimensional monte carlo simulation of grain growth in the heat-affected zone of a 2.25Cr-1Mo steel weld. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2000 , 31, 529-536	2.5	40
140	Liquid metal expulsion during laser spot welding of 304 stainless steel. <i>Journal Physics D: Applied Physics</i> , 2006 , 39, 525-534	3	39
139	Mathematical modeling of heat transfer, fluid flow, and solidification during linear welding with a pulsed laser beam. <i>Journal of Applied Physics</i> , 2006 , 100, 034903	2.5	38
138	Non-isothermal grain growth in metals and alloys. <i>Materials Science and Technology</i> , 2006 , 22, 253-278	1.5	38
137	In situ observations of weld pool solidification using transparent metal-analog systems. <i>Journal of Applied Physics</i> , 2003 , 93, 4885-4895	2.5	38
136	Effects of oxygen and sulfur on alloying element vaporization rates during laser welding. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1988 , 19, 967-972		38
135	Improving reliability of heat and fluid flow calculation during conduction mode laser spot welding by multivariable optimisation. <i>Science and Technology of Welding and Joining</i> , 2006 , 11, 143-153	3.7	37
134	Dimensionless correlation to estimate peak temperature during friction stir welding. <i>Science and Technology of Welding and Joining</i> , 2006 , 11, 606-608	3.7	37
133	Geometry of laser spot welds from dimensionless numbers. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2001 , 32, 941-947	2.5	37
132	Unusual wavy weld pool boundary from dimensional analysis. <i>Scripta Materialia</i> , 2009 , 60, 68-71	5.6	36
131	Modeling of the role of atomic hydrogen in heat transfer during hot filament assisted deposition of diamond. <i>Journal of Applied Physics</i> , 1992 , 72, 712-718	2.5	36
130	Hydrogen assisted heat transfer during diamond growth using carbon and tantalum filaments. <i>Applied Physics Letters</i> , 1992 , 60, 2068-2070	3.4	36
129	Modeling of ferrite formation in a duplex stainless steel weld considering non-uniform starting microstructure. <i>Acta Materialia</i> , 2005 , 53, 4441-4453	8.4	35

128	A pathway to microstructural refinement through double pulsed gas metal arc welding. <i>Scripta Materialia</i> , 2017 , 134, 61-65	5.6	34
127	Neural network models of peak temperature, torque, traverse force, bending stress and maximum shear stress during friction stir welding. <i>Science and Technology of Welding and Joining</i> , 2012 , 17, 460-466	3.7	34
126	Interdiffusion in the MgO-Al ₂ O ₃ spinel with or without some dopants. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 1996 , 27, 2105-2114	2.3	33
125	Modeling of inclusion growth and dissolution in the weld pool. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2000 , 31, 161-169	2.5	32
124	Friction stir welding of mild steel: tool durability and steel microstructure. <i>Materials Science and Technology</i> , 2014 , 30, 1050-1056	1.5	31
123	Real time monitoring of laser beam welding keyhole depth by laser interferometry. <i>Science and Technology of Welding and Joining</i> , 2014 , 19, 560-564	3.7	30
122	Modeling of interfacial phenomena in welding. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1990 , 21, 600-603		30
121	Material adhesion and stresses on friction stir welding tool pins. <i>Science and Technology of Welding and Joining</i> , 2014 , 19, 534-540	3.7	29
120	Tool durability maps for friction stir welding of an aluminium alloy. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2012 , 468, 3552-3570	2.4	29
119	Guaranteed fillet weld geometry from heat transfer model and multivariable optimization. <i>International Journal of Heat and Mass Transfer</i> , 2004 , 47, 5793-5806	4.9	29
118	Kinetics of ferrite to austenite transformation during welding of 1005 steel. <i>Scripta Materialia</i> , 2002 , 46, 753-757	5.6	29
117	Diamond formation in air by the Fedoseev-Derjaguin laser process. <i>Carbon</i> , 1989 , 27, 289-294	10.4	29
116	Mechanisms of Spiking and Humping in Keyhole Welding. <i>IEEE Transactions on Components, Packaging and Manufacturing Technology</i> , 2012 , 2, 383-394	1.7	28
115	Tailoring weld geometry during keyhole mode laser welding using a genetic algorithm and a heat transfer model. <i>Journal Physics D: Applied Physics</i> , 2006 , 39, 1257-1266	3	28
114	Optimization of the johnson-mehl-avrami equation parameters for Ferrite to Austenite transformation in steel welds using a genetic algorithm. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2005 , 36, 15-22	2.3	28
113	Integrated modelling of thermal cycles, austenite formation, grain growth and decomposition in the heat affected zone of carbon steel. <i>Science and Technology of Welding and Joining</i> , 2005 , 10, 574-582	3.7	28
112	Numerical modeling of enhanced nitrogen dissolution during gas tungsten Arc welding. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2000 , 31, 1371-1385	2.5	27
111	A Genetic Algorithm-Assisted Inverse Convective Heat Transfer Model for Tailoring Weld Geometry. <i>Materials and Manufacturing Processes</i> , 2009 , 24, 384-397	4.1	26

110	A computational procedure for finding multiple solutions of convective heat transfer equations. <i>Journal Physics D: Applied Physics</i> , 2005 , 38, 2977-2985	3	26
109	Conditions for void formation in friction stir welding from machine learning. <i>Npj Computational Materials</i> , 2019 , 5,	10.9	24
108	Diamond growth with locally supplied methane and acetylene. <i>Journal of Materials Research</i> , 1992 , 7, 379-383	2.5	24
107	Numerical calculation of fluid flow in a continuous casting tundish. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1985 , 16, 497-504		24
106	Residual stresses and distortion in the patterned printing of titanium and nickel alloys. <i>Additive Manufacturing</i> , 2019 , 29, 100808	6.1	23
105	The effects of Prandtl number on wavy weld boundary. <i>International Journal of Heat and Mass Transfer</i> , 2009 , 52, 3790-3798	4.9	23
104	Time resolved X-ray diffraction observations of phase transformations in transient arc welds. <i>Science and Technology of Welding and Joining</i> , 2008 , 13, 265-277	3.7	23
103	Probing liquation cracking and solidification through modeling of momentum, heat, and solute transport during welding of aluminum alloys. <i>Journal of Applied Physics</i> , 2005 , 97, 094912	2.5	23
102	Kinetics of directed oxidation of Al-Mg alloys in the initial and final stages of synthesis of Al ₂ O ₃ /Al composites. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1996 , 210, 64-75	5.3	23
101	Special features of double pulsed gas metal arc welding. <i>Journal of Materials Processing Technology</i> , 2018 , 251, 369-375	5.3	22
100	Optical emission spectroscopy of metal vapor dominated laser-arc hybrid welding plasma. <i>Journal of Applied Physics</i> , 2011 , 109, 083301	2.5	22
99	Tailoring gas tungsten arc weld geometry using a genetic algorithm and a neural network trained with convective heat flow calculations. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007 , 454-455, 477-486	5.3	22
98	Pore formation during continuous wave Nd:YAG laser welding of aluminium for automotive applications. <i>Welding International</i> , 2001 , 15, 275-281	0.1	22
97	Oxide Matrix Composite by Directional Oxidation of a Commercial Aluminum-Magnesium Alloy. <i>Journal of the American Ceramic Society</i> , 1994 , 77, 1296-1300	3.8	22
96	Nitrogen activity determination in plasmas. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1992 , 23, 207-214		22
95	Absorption and transport of hydrogen during gas metal arc welding of low alloy steel. <i>Science and Technology of Welding and Joining</i> , 1997 , 2, 174-184	3.7	21
94	Nonisothermal growth and dissolution of inclusions in liquid steels. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2003 , 34, 267-269	2.5	21
93	A general model for partitioning of gases between a metal and its plasma environment. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 1995 , 26, 149-157	2.5	21

92	Interfacial tension between low pressure argon plasma and molten copper and iron. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1987 , 18, 597-601		20
91	Grain topology in TiB ₂ /Al ₂ O ₃ welds Monte Carlo simulation and experiments. <i>Journal Physics D: Applied Physics</i> , 2004 , 37, 2191-2196	3	19
90	Quantitative modelling of motion, temperature gyrations, and growth of inclusions in weld pool. <i>Science and Technology of Welding and Joining</i> , 1998 , 3, 33-41	3.7	19
89	Three-dimensional monte carlo simulation of grain growth in zone-refined iron. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2001 , 32, 1195-1201	2.5	18
88	Time-temperature-transformation diagrams for the growth and dissolution of inclusions in liquid steels. <i>Scripta Materialia</i> , 2001 , 44, 847-852	5.6	18
87	Printability of 316 stainless steel. <i>Science and Technology of Welding and Joining</i> , 2019 , 24, 412-419	3.7	17
86	Residual stresses in wire-arc additive manufacturing [Hierarchy of influential variables. <i>Additive Manufacturing</i> , 2020 , 35, 101355	6.1	17
85	Enhanced dissolution of nitrogen during gas tungsten arc welding of steels. <i>Science and Technology of Welding and Joining</i> , 1998 , 3, 190-203	3.7	16
84	Coarsening of oxide inclusions in low alloy steel welds. <i>Science and Technology of Welding and Joining</i> , 1996 , 1, 17-27	3.7	16
83	Absorption of CO ₂ laser beam by AISI 4340 steel. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1985 , 16, 853-856		16
82	Machine learning based hierarchy of causative variables for tool failure in friction stir welding. <i>Acta Materialia</i> , 2020 , 192, 67-77	8.4	15
81	Influence of oxygen on weld geometry in fibre laser and fibre laser/MA hybrid welding. <i>Science and Technology of Welding and Joining</i> , 2011 , 16, 166-173	3.7	15
80	Role of surface-active elements during keyhole-mode laser welding. <i>Journal Physics D: Applied Physics</i> , 2011 , 44, 485203	3	15
79	Asymmetry in steel welds with dissimilar amounts of sulfur. <i>Scripta Materialia</i> , 2015 , 108, 88-91	5.6	14
78	Effects of time, temperature, and steel composition on growth and dissolution of inclusions in liquid steels. <i>Ironmaking and Steelmaking</i> , 2001 , 28, 450-454	1.3	14
77	High-pressure phases of SiO ₂ made in air by Fedoseev/Dejaguin laser process. <i>Applied Physics Letters</i> , 1988 , 53, 1687-1689	3.4	14
76	Cooling rate in 800 to 500°C range from dimensional analysis. <i>Science and Technology of Welding and Joining</i> , 2010 , 15, 423-427	3.7	13
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