

Tarasankar DebRoy

List of Publications by Year in Descending Order

Source: <https://exaly.com/author-pdf/8038415/tarasankar-debroy-publications-by-year.pdf>

Version: 2024-04-23

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

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	Crack free metal printing using physics informed machine learning. <i>Acta Materialia</i> , 2022 , 226, 117612	8.4	2
234	Solidification cracking of a nickel alloy during high-power keyhole mode laser welding. <i>Journal of Materials Processing Technology</i> , 2022 , 117576	5.3	0
233	An improved heat transfer and fluid flow model of wire-arc additive manufacturing. <i>International Journal of Heat and Mass Transfer</i> , 2021 , 167, 120835	4.9	11
232	Spatial and temporal variation of hardness of a printed steel part. <i>Acta Materialia</i> , 2021 , 209, 116775	8.4	6
231	The case for digital twins in metal additive manufacturing. <i>JPhys Materials</i> , 2021 , 4, 040401	4.2	7
230	Mechanistic models for additive manufacturing of metallic components. <i>Progress in Materials Science</i> , 2021 , 116, 100703	42.2	92
229	Metallurgy, mechanistic models and machine learning in metal printing. <i>Nature Reviews Materials</i> , 2021 , 6, 48-68	73.3	84
228	Deposit geometry and oxygen concentration spatial variations due to composition change in printed functionally graded components. <i>International Journal of Heat and Mass Transfer</i> , 2021 , 164, 120526	4.9	1
227	Stirring Solid Metals to Form Sound Welds 2021 , 21-34		0
226	Picture to Parts, One Thin Metal Layer at a Time 2021 , 35-49		
225	Dazzling Diamonds Grown from Gases 2021 , 9-19		
224	Physics-informed machine learning and mechanistic modeling of additive manufacturing to reduce defects. <i>Applied Materials Today</i> , 2021 , 24, 101123	6.6	8
223	Analytical estimation of fusion zone dimensions and cooling rates in part scale laser powder bed fusion. <i>Additive Manufacturing</i> , 2021 , 46, 102222	6.1	3
222	Towards developing multiscale-multiphysics models and their surrogates for digital twins of metal additive manufacturing. <i>Additive Manufacturing</i> , 2021 , 46, 102089	6.1	12
221	Welding: The Digital Experience 2021 , 51-63		
220	Residual stresses in wire-arc additive manufacturing [Hierarchy of influential variables. <i>Additive Manufacturing</i> , 2020 , 35, 101355	6.1	17
219	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

218	Control of asymmetric track geometry in printed parts of stainless steels, nickel, titanium and aluminum alloys. <i>Computational Materials Science</i> , 2020 , 182, 109791	3.2	1
217	Harnessing the scientific synergy of welding and additive manufacturing. <i>Science and Technology of Welding and Joining</i> , 2019 , 24, 361-366	3.7	12
216	Printability of 316 stainless steel. <i>Science and Technology of Welding and Joining</i> , 2019 , 24, 412-419	3.7	17
215	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
214	Residual stresses and distortion in the patterned printing of titanium and nickel alloys. <i>Additive Manufacturing</i> , 2019 , 29, 100808	6.1	23
213	Conditions for void formation in friction stir welding from machine learning. <i>Npj Computational Materials</i> , 2019 , 5,	10.9	24
212	Scientific, technological and economic issues in metal printing and their solutions. <i>Nature Materials</i> , 2019 , 18, 1026-1032	27	164
211	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
210	A digital twin for rapid qualification of 3D printed metallic components. <i>Applied Materials Today</i> , 2019 , 14, 59-65	6.6	97
209	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
208	Laser weld geometry and microstructure of cast Uranium-6 wt% niobium alloy. <i>Journal of Nuclear Materials</i> , 2019 , 514, 224-237	3.3	5
207	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
206	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
205	Additive manufacturing of metallic components [Process, structure and properties. <i>Progress in Materials Science</i> , 2018 , 92, 112-224	42.2	2682
204	Special features of double pulsed gas metal arc welding. <i>Journal of Materials Processing Technology</i> , 2018 , 251, 369-375	5.3	22
203	Residual stresses and distortion in additively manufactured compositionally graded and dissimilar joints. <i>Computational Materials Science</i> , 2018 , 143, 325-337	3.2	68
202	Mitigation of lack of fusion defects in powder bed fusion additive manufacturing. <i>Journal of Manufacturing Processes</i> , 2018 , 36, 442-449	5	79
201	The Hardness of Additively Manufactured Alloys. <i>Materials</i> , 2018 , 11,	3.5	56

200	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
199	Three-dimensional modeling of grain structure evolution during welding of an aluminum alloy. <i>Acta Materialia</i> , 2017 , 126, 413-425	8.4	90
198	Dimensionless numbers in additive manufacturing. <i>Journal of Applied Physics</i> , 2017 , 121, 064904	2.5	65
197	Crystal growth during keyhole mode laser welding. <i>Acta Materialia</i> , 2017 , 133, 10-20	8.4	65
196	Building blocks for a digital twin of additive manufacturing. <i>Acta Materialia</i> , 2017 , 135, 390-399	8.4	182
195	A pathway to microstructural refinement through double pulsed gas metal arc welding. <i>Scripta Materialia</i> , 2017 , 134, 61-65	5.6	34
194	Building digital twins of 3D printing machines. <i>Scripta Materialia</i> , 2017 , 135, 119-124	5.6	115
193	An improved prediction of residual stresses and distortion in additive manufacturing. <i>Computational Materials Science</i> , 2017 , 126, 360-372	3.2	349
192	Mitigation of thermal distortion during additive manufacturing. <i>Scripta Materialia</i> , 2017 , 127, 79-83	5.6	108
191	Grain Growth Modeling for Additive Manufacturing of Nickel Based Superalloys 2016 , 265-269		7
190	Printability of alloys for additive manufacturing. <i>Scientific Reports</i> , 2016 , 6, 19717	4.9	210
189	Origin of grain orientation during solidification of an aluminum alloy. <i>Acta Materialia</i> , 2016 , 115, 123-131	8.4	122
188	Heat and Fluid Flow Modeling to Examine 3D-Printability of Alloys 2016 , 471-478		4
187	Heat and Fluid Flow Modeling to Examine 3Dprintability of Alloys 2016 , 469-478		
186	Asymmetry in steel welds with dissimilar amounts of sulfur. <i>Scripta Materialia</i> , 2015 , 108, 88-91	5.6	14
185	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
184	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
183	Towards a Map of Solidification Cracking Risk in Laser Welding of Austenitic Stainless Steels. <i>Physics Procedia</i> , 2015 , 78, 230-239		5

182	Evolution of solidification texture during additive manufacturing. <i>Scientific Reports</i> , 2015 , 5, 16446	4.9	229
181	Employing microsecond pulses to form laser-fired contacts in photovoltaic devices. <i>Progress in Photovoltaics: Research and Applications</i> , 2015 , 23, 1025-1036	6.8	3
180	Weld bead center line shift during laser welding of austenitic stainless steels with different sulfur content. <i>Scripta Materialia</i> , 2014 , 71, 37-40	5.6	11
179	Passivation layer breakdown during laser-fired contact formation for photovoltaic devices. <i>Applied Physics Letters</i> , 2014 , 105, 024105	3.4	1
178	Friction stir welding of mild steel: tool durability and steel microstructure. <i>Materials Science and Technology</i> , 2014 , 30, 1050-1056	1.5	31
177	Heat transfer and material flow during laser assisted multi-layer additive manufacturing. <i>Journal of Applied Physics</i> , 2014 , 116, 124905	2.5	177
176	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
175	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
174	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
173	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
172	Heat transfer and fluid flow in additive manufacturing. <i>Journal of Laser Applications</i> , 2013 , 25, 052006	2.1	86
171	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
170	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
169	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
168	Laser-silicon interaction for selective emitter formation in photovoltaics. I. Numerical model and validation. <i>Journal of Applied Physics</i> , 2012 , 112, 114906	2.5	12
167	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, 460-468	3.7	34
166	Scaling Weld or Melt Pool Shape Affected by Thermocapillary Convection With High Prandtl Numbers. <i>Journal of Heat Transfer</i> , 2012 , 134,	1.8	2
165	Evolution of laser-fired aluminum-silicon contact geometry in photovoltaic devices. <i>Journal of Applied Physics</i> , 2012 , 111, 024903	2.5	6

164	Laser-silicon interaction for selective emitter formation in photovoltaics. II. Model applications. <i>Journal of Applied Physics</i> , 2012 , 112, 114907	2.5	9
163	Influence of oxygen on weld geometry in fibre laser and fibre laser-TMA hybrid welding. <i>Science and Technology of Welding and Joining</i> , 2011 , 16, 166-173	3.7	15
162	Toward optimum friction stir welding tool shoulder diameter. <i>Scripta Materialia</i> , 2011 , 64, 9-12	5.6	176
161	Synthesis of nanocomposite thin films with self-assembled structures by pulsed ion beam ablation of MoS ₂ target. <i>Materials Letters</i> , 2011 , 65, 4-6	3.3	9
160	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
159	Review: friction stir welding tools. <i>Science and Technology of Welding and Joining</i> , 2011 , 16, 325-342	3.7	484
158	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
157	Scaling of spiking and humping in keyhole welding. <i>Journal Physics D: Applied Physics</i> , 2011 , 44, 245501	3	12
156	Role of surface-active elements during keyhole-mode laser welding. <i>Journal Physics D: Applied Physics</i> , 2011 , 44, 485203	3	15
155	Optical emission spectroscopy of metal vapor dominated laser-arc hybrid welding plasma. <i>Journal of Applied Physics</i> , 2011 , 109, 083301	2.5	22
154	Friction stir welding of dissimilar alloys A perspective. <i>Science and Technology of Welding and Joining</i> , 2010 , 15, 266-270	3.7	202
153	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
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	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
150	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
149	Problems and issues in laser-arc hybrid welding. <i>International Materials Reviews</i> , 2009 , 54, 223-244	16.1	156
148	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
147	Unusual wavy weld pool boundary from dimensional analysis. <i>Scripta Materialia</i> , 2009 , 60, 68-71	5.6	36

146	Strains and strain rates during friction stir welding. <i>Scripta Materialia</i> , 2009 , 61, 863-866	5.6	143
145	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
144	Origin of wavy weld boundary. <i>Journal of Applied Physics</i> , 2009 , 105, 053508	2.5	11
143	Heat transfer and fluid flow during electron beam welding of 21Cr β Ni β Mn steel and Ti β Al β V alloy. <i>Journal Physics D: Applied Physics</i> , 2009 , 42, 025503	3	87
142	Critical assessment: friction stir welding of steels. <i>Science and Technology of Welding and Joining</i> , 2009 , 14, 193-196	3.7	108
141	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
140	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
139	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
138	Orientation Imaging Microscopy of Stray Grain Formation in Single Crystal Weld Structures. <i>Microscopy and Microanalysis</i> , 2008 , 14, 40-41	0.5	
137	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
136	Recent advances in friction-stir welding IProcess, weldment structure and properties. <i>Progress in Materials Science</i> , 2008 , 53, 980-1023	42.2	1484
135	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
134	Heat transfer and fluid flow during keyhole mode laser welding of tantalum, Ti β Al β V, 304L stainless steel and vanadium. <i>Journal Physics D: Applied Physics</i> , 2007 , 40, 5753-5766	3	262
133	Three-dimensional heat and material flow during friction stir welding of mild steel. <i>Acta Materialia</i> , 2007 , 55, 883-895	8.4	442
132	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
131	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
130	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
129	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

128	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
127	Neural network model of heat and fluid flow in gas metal arc fillet welding based on genetic algorithm and conjugate gradient optimisation. <i>Science and Technology of Welding and Joining</i> , 2006 , 11, 106-119	3.7	13
126	Liquid metal expulsion during laser spot welding of 304 stainless steel. <i>Journal Physics D: Applied Physics</i> , 2006 , 39, 525-534	3	39
125	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
124	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
123	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
122	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
121	Non-isothermal grain growth in metals and alloys. <i>Materials Science and Technology</i> , 2006 , 22, 253-278	1.5	38
120	Experimental and computational investigation of fusion zone geometries during autogenous keyhole mode laser welds 2006 ,		1
119	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
118	Heat transfer and fluid flow in laser microwelding. <i>Journal of Applied Physics</i> , 2005 , 97, 084909	2.5	92
117	A Smart Bi-Directional Model of Heat Transfer and Free Surface Flow in Gas-Metal-Arc Fillet Welding for Practising Engineers. <i>Welding in the World, Le Soudage Dans Le Monde</i> , 2005 , 49, 32-48	1.9	4
116	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
115	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
114	Tailoring complex weld geometry through reliable heat-transfer and fluid-flow calculations and a genetic algorithm. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2005 , 36, 2725-2735	2.3	11
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}	3.7	28
112	Improving reliability of modelling heat and fluid flow in complex gas metal arc fillet welds Part I: an engineering physics model. <i>Journal Physics D: Applied Physics</i> , 2005 , 38, 119-126	3	13
111	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

110	Improving reliability of modelling heat and fluid flow in complex gas metal arc fillet weldsPart II: application to welding of steel. <i>Journal Physics D: Applied Physics</i> , 2005 , 38, 127-134	3	10
109	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
108	Grain topology in TiBAlV weldsMonte Carlo simulation and experiments. <i>Journal Physics D: Applied Physics</i> , 2004 , 37, 2191-2196	3	19
107	Composition change of stainless steel during microjoining with short laser pulse. <i>Journal of Applied Physics</i> , 2004 , 96, 4547-4555	2.5	40
106	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
105	Heat and fluid flow in complex joints during gas metal arc weldingPart II: Application to fillet welding of mild steel. <i>Journal of Applied Physics</i> , 2004 , 95, 5220-5229	2.5	67
104	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
103	Heat and fluid flow in complex joints during gas metal arc weldingPart I: Numerical model of fillet welding. <i>Journal of Applied Physics</i> , 2004 , 95, 5210-5219	2.5	86
102	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
101	Phase transformation dynamics during welding of TiBAlV. <i>Journal of Applied Physics</i> , 2004 , 95, 8327-8339	2.5	178
100	Numerical Simulation of Electromagnetically Driven Flow in the Weld Pool During Arc Welding 2003 , 833		
99	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
98	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
97	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
96	Calculation of three-dimensional electromagnetic force field during arc welding. <i>Journal of Applied Physics</i> , 2003 , 94, 1267-1277	2.5	78
95	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
94	Probing temperature during laser spot welding from vapor composition and modeling. <i>Journal of Applied Physics</i> , 2003 , 94, 6949-6958	2.5	58
93	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

92	Alloying element vaporization during laser spot welding of stainless steel. <i>Journal Physics D: Applied Physics</i> , 2003 , 36, 3079-3088	3	66
91	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
90	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
89	Computational Modeling:A Path to Expand the Knowledge Base in Fusion Welding. <i>Indian Welding Journal</i> , 2003 , 36, 59	1	2
88	Kinetics of ferrite to austenite transformation during welding of 1005 steel. <i>Scripta Materialia</i> , 2002 , 46, 753-757	5.6	29
87	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
86	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
85	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
84	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
83	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
82	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
81	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
80	Three dimensional Monte Carlo simulation of grain growth during GTA welding of titanium. <i>Acta Materialia</i> , 2000 , 48, 4813-4825	8.4	100
79	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
78	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
77	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
76	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
75	Formaci3n de porosidad durante la soldadura l3ser de Nd: YAG de onda continua en aleaciones de aluminio para aplicaciones automotrices. <i>Revista De Metalurgia</i> , 2000 , 36, 108-117	0.4	10

74	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
73	Current issues and problems in laser welding of automotive aluminium alloys. <i>International Materials Reviews</i> , 1999 , 44, 238-266	16.1	221
72	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
71	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
70	Weld metal microstructure prediction from fundamentals of transport phenomena and phase transformation theory. <i>Science and Technology of Welding and Joining</i> , 1997 , 2, 53-58	3.7	9
69	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
68	Kinetics of directed oxidation of Al-Mg alloys into Al ₂ O ₃ preforms. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1997 , 232, 39-46	5.3	5
67	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
66	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
65	Probing the initial stage of synthesis of Al ₂ O ₃ /Al composites by directed oxidation of Al-Mg alloys. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 1996 , 27, 43-50	2.5	11
64	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
63	Growth stage kinetics in the synthesis of Al ₂ O ₃ /Al composites by directed oxidation of Al-Mg and Al-Mg-Si alloys. <i>Journal of the European Ceramic Society</i> , 1996 , 16, 1351-1363	6	11
62	Metal distribution in alumina/aluminium composites synthesized by directed metal oxidation. <i>Journal of Materials Science</i> , 1996 , 31, 5101-5108	4.3	2
61	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
60	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
59	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
58	Physical processes in fusion welding. <i>Reviews of Modern Physics</i> , 1995 , 67, 85-112	40.5	364
57	Phenomenological Modeling of Fusion Welding Processes. <i>MRS Bulletin</i> , 1994 , 19, 29-35	3.2	49

56	Electrical Conductivity of Alumina/Aluminum Composites Synthesized by Directed Metal Oxidation. <i>Journal of the American Ceramic Society</i> , 1994 , 77, 3045-3047	3.8	8
55	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
54	Effect of Pressure on Plasma-Assisted Chemical Vapor. Deposition of Silicon Oxide(s). <i>Journal of the American Ceramic Society</i> , 1994 , 77, 1366-1368	3.8	
53	Optical emissions during plasma assisted chemical vapor deposition of diamond-like carbon films. <i>Diamond and Related Materials</i> , 1994 , 4, 69-75	3.5	10
52	Transport phenomena in the scale-up of hot filament-assisted chemical vapor deposition of diamond. <i>Surface and Coatings Technology</i> , 1993 , 62, 349-355	4.4	4
51	Experimental studies on nitrogen solubility in Nd 2 Fe 14 B alloy in the temperature range 773-1143 K. <i>Journal of Magnetism and Magnetic Materials</i> , 1993 , 127, 307-314	2.8	5
50	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
49	Diamond growth with locally supplied methane and acetylene. <i>Journal of Materials Research</i> , 1992 , 7, 379-383	2.5	24
48	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
47	Optical emission investigation of the plasma enhanced chemical vapor deposition of silicon oxide films. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1992 , 10, 3395-3400	2.9	9
46	Hydrogen assisted heat transfer during diamond growth using carbon and tantalum filaments. <i>Applied Physics Letters</i> , 1992 , 60, 2068-2070	3.4	36
45	Current issues and problems in welding science. <i>Science</i> , 1992 , 257, 497-502	33.3	191
44	Liquid metal expulsion during laser irradiation. <i>Journal of Applied Physics</i> , 1992 , 72, 3317-3322	2.5	47
43	Modeling of substrate surface temperature distribution during hot-filament assisted diamond deposition. <i>Diamond and Related Materials</i> , 1992 , 1, 1177-1184	3.5	3
42	Nitrogen activity determination in plasmas. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1992 , 23, 207-214		22
41	Thermochemistry and diffusion of nitrogen in solid molybdenum. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1991 , 22, 219-224		0
40	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
39	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

38	Laser-Induced Calcite-Aragonite Transition. <i>Journal of the American Ceramic Society</i> , 1990 , 73, 733-735	3.8	6
37	Fuming of stannous oxide from silicate melts. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1990 , 21, 449-454		6
36	Modeling of interfacial phenomena in welding. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1990 , 21, 600-603		30
35	TEM characterization of structural changes in graphite plates due to pulsed CO ₂ laser irradiation. <i>Journal of Materials Science Letters</i> , 1990 , 9, 1071-1074		2
34	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
33	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
32	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
31	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
30	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
29	Diamond formation in air by the Fedoseev-Derjaguin laser process. <i>Carbon</i> , 1989 , 27, 289-294	10.4	29
28	Separation of synthetic diamond from carbon black by oxidation. <i>Carbon</i> , 1988 , 26, 591-593	10.4	3
27	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
26	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
25	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
24	Nitrogen solubility in solid niobium. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1988 , 19, 613-616		6
23	High-pressure phases of SiO ₂ made in air by Fedoseev-Derjaguin laser process. <i>Applied Physics Letters</i> , 1988 , 53, 1687-1689	3.4	14
22	Effect of low-pressure argon plasma on metal vaporization rates. <i>Materials Letters</i> , 1988 , 6, 406-408	3.3	3
21	A comparative study of the roles of KCN and NaCN as catalytic precursors in the Boudouard reaction. <i>Fuel</i> , 1987 , 66, 103-112	7.1	4

20	Reaction between CO ₂ and coke doped with NaCN. <i>Carbon</i> , 1987 , 25, 279-288	10.4	8
19	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
18	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
17	Structural effects in the reaction between carbon dioxide and coke doped with various potassium bearing catalytic precursors. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1986 , 17, 565-574		6
16	Oxygen Pressure Dependence of Lead Ion Transport in PbO-SiO ₂ Melts. <i>Journal of the American Ceramic Society</i> , 1985 , 68, C-104-C-105	3.8	1
15	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
14	Electronic and ionic transport in liquid PbO-SiO ₂ systems. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1985 , 16, 77-82		12
13	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
12	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
11	The effects of CO and CO ₂ on the rate of Na ₂ CO ₃ catalyzed boudouard reaction. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1984 , 15, 400-403		13
10	Electrical Conductivity of PbO-SiO ₂ Liquids Containing Pb Precipitates. <i>Canadian Metallurgical Quarterly</i> , 1984 , 23, 295-302	0.9	1
9	Temperature profiles, the size of the heat-affected zone and dilution in electrosag welding. <i>Materials Science and Engineering</i> , 1982 , 56, 181-193		9
8	Heat generation patterns and temperature profiles in electrosag welding. <i>Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science</i> , 1980 , 11, 593-605		9
7	Effects of time, temperature, and steel composition on growth and dissolution of inclusions in liquid steels		10
6	Coarsening of oxide inclusions in low alloy steel welds		1
5	Weld metal microstructure prediction from fundamentals of transport phenomena and phase transformation theory		2
4	Absorption and transport of hydrogen during gas metal arc welding of low alloy steel		6
3	Enhanced dissolution of nitrogen during gas tungsten arc welding of steels		5

2	Quantitative modelling of motion, temperature gyrations, and growth of inclusions in weld pool	4
1	Grain Growth Modeling for Additive Manufacturing of Nickel Based Superalloys265-269	2