Xiangdong Gao

List of Publications by Citations

83 papers	1,615 citations	23 h-index	37 g-index
91 ext. papers	2,000 ext. citations	4.1 avg, IF	5.41 L-index

#	Paper	IF	Citations
83	WPD-PCA-Based Laser Welding Process Monitoring and Defects Diagnosis by Using FNN and SVM. *IEEE Transactions on Industrial Electronics*, **2015**, 62, 628-636	8.9	167
82	Review of laser welding monitoring. *Science and Technology of Welding and Joining*, **2014**, 19, 181-201	3.7	121
81	Seam Tracking Monitoring Based on Adaptive Kalman Filter Embedded Elman Neural Network During High-Power Fiber Laser Welding. *IEEE Transactions on Industrial Electronics*, **2012**, 59, 4315-4325	8.9	114
80	Weld appearance prediction with BP neural network improved by genetic algorithm during disk laser welding. *Journal of Manufacturing Systems*, **2015**, 34, 53-59	9.1	90
79	. *IEEE Transactions on Industrial Informatics*, **2014**, 10, 1285-1295	11.9	68
78	Welding defects detection based on deep learning with multiple optical sensors during disk laser welding of thick plates. *Journal of Manufacturing Systems*, **2019**, 51, 87-94	9.1	58
77	Monitoring of high-power laser welding using high-speed photographing and image processing. *Mechanical Systems and Signal Processing*, **2014**, 49, 39-52	7.8	57
76	Infrared image recognition for seam tracking monitoring during fiber laser welding. *Mechatronics*, **2012**, 22, 370-380	3	45
75	Prediction of high power laser welding status based on PCA and SVM classification of multiple sensors. *Journal of Intelligent Manufacturing*, **2019**, 30, 821-832	6.7	37
74	Detection of weld pool width using infrared imaging during high-power fiber laser welding of type 304 austenitic stainless steel. *International Journal of Advanced Manufacturing Technology*, **2014**, 74, 1247-1254	3.2	34
73	Kalman Filtering Compensated by Radial Basis Function Neural Network for Seam Tracking of Laser Welding. *IEEE Transactions on Control Systems Technology*, **2013**, 21, 1916-1923	4.8	34
72	Analysis of characteristics of molten pool using cast shadow during high-power disk laser welding. *International Journal of Advanced Manufacturing Technology*, **2014**, 70, 1979-1988	3.2	33
71	Multiple-optics sensing of high-brightness disk laser welding process. *NDT and E International*, **2013**, 60, 32-39	4.1	33
70	Visual-based spatter detection during high-power disk laser welding. *Optics and Lasers in Engineering*, **2014**, 54, 1-7	4.6	32
69	Detection of micro-weld joint by magneto-optical imaging. *Optics and Laser Technology*, **2014**, 62, 141-154	4.2	28
68	Detection of micro gap weld using magneto-optical imaging during laser welding. *International Journal of Advanced Manufacturing Technology*, **2014**, 73, 23-33	3.2	27
67	Prediction model of weld width during high-power disk laser welding of 304 austenitic stainless steel. *International Journal of Precision Engineering and Manufacturing*, **2014**, 15, 399-405	1.7	26

66	Seam tracking based on Kalman filtering of micro-gap weld using magneto-optical image. *International Journal of Advanced Manufacturing Technology*, **2016**, 83, 21-32	3.2	26
65	Detection of imperfection formation in disk laser welding using multiple on-line measurements. *Journal of Materials Processing Technology*, **2015**, 219, 209-220	5.3	25
64	Online Monitoring of Welding Status Based on a DBN Model During Laser Welding. *Engineering*, **2019**, 5, 671-678	9.7	24
63	Analysis of high-power disk laser welding stability based on classification of plume and spatter characteristics. *Transactions of Nonferrous Metals Society of China*, **2013**, 23, 3748-3757	3.3	23
62	Detection of micro gap weld joint by using magneto-optical imaging and Kalman filtering compensated with RBF neural network. *Mechanical Systems and Signal Processing*, **2017**, 84, 570-583	7.8	23
61	Real-time monitoring of high-power disk laser welding statuses based on deep learning framework. *Journal of Intelligent Manufacturing*, **2020**, 31, 799-814	6.7	23
60	Neural network of plume and spatter for monitoring high-power disk laser welding. *International Journal of Precision Engineering and Manufacturing - Green Technology*, **2014**, 1, 293-298	3.8	21
59	Effect of joint gap on bead formation in laser butt welding of stainless steel. *Journal of Materials Processing Technology*, **2017**, 249, 274-284	5.3	20
58	Magneto-optical imaging characteristics of weld defects under alternating magnetic field excitation. *Optics Express*, **2018**, 26, 9972-9983	3.3	20
57	Monitoring of welding status by molten pool morphology during high-power disk laser welding. *Optik*, **2015**, 126, 1797-1802	2.5	19
56	Tight butt joint weld detection based on optical flow and particle filtering of magneto-optical imaging. *Mechanical Systems and Signal Processing*, **2017**, 96, 16-30	7.8	18
55	Magneto-optical imaging deviation model of micro-gap weld joint. *Journal of Manufacturing Systems*, **2017**, 42, 82-92	9.1	16
54	Multi-sensor information fusion for monitoring disk laser welding. *International Journal of Advanced Manufacturing Technology*, **2016**, 85, 1167-1175	3.2	16
53	Simulation and experiment for dynamics of laser welding keyhole and molten pool at different penetration status. *International Journal of Advanced Manufacturing Technology*, **2021**, 112, 2301-2312	3.2	16
52	Data-Driven Detection of Laser Welding Defects Based on Real-Time Spectrometer Signals. *IEEE Sensors Journal*, **2019**, 19, 9364-9373	4	15
51	Status analysis of keyhole bottom in laser-MAG hybrid welding process. *Optics Express*, **2018**, 26, 347-355	3.3	14
50	A Novel Stability Quantification for Disk Laser Welding by Using Frequency Correlation Coefficient Between Multiple-Optics Signals. *IEEE/ASME Transactions on Mechatronics*, **2015**, 20, 327-337	5.5	14
49	Monitoring of keyhole entrance and molten pool with quality analysis during adjustable ring mode laser welding. *Applied Optics*, **2020**, 59, 1576-1584	1.7	14

48	Research and prospect of welding monitoring technology based on machine vision. *International Journal of Advanced Manufacturing Technology*, **2021**, 115, 3365-3391	3.2	14
47	High-power disk laser welding statuses monitoring based on analyses of multiple-sensor signals. *Journal of Manufacturing Processes*, **2019**, 41, 221-230	5	13
46	Quasi-static axial crushing behaviour and energy absorption of novel metal rope crochet-sintered mesh tubes. *Thin-Walled Structures*, **2018**, 127, 120-134	4.7	13
45	Weld cracks nondestructive testing based on magneto-optical imaging under alternating magnetic field excitation. *Sensors and Actuators A: Physical*, **2019**, 285, 289-299	3.9	12
44	Analysis of welding process stability and weld quality by droplet transfer and explosion in MAG-laser hybrid welding process. *Journal of Manufacturing Processes*, **2018**, 32, 522-529	5	12
43	Data-driven based analyzing and modeling of MIMO laser welding process by integration of six advanced sensors. *International Journal of Advanced Manufacturing Technology*, **2016**, 82, 1127-1139	3.2	12
42	Weldment Nondestructive Testing Using Magneto-optical Imaging Induced by Alternating Magnetic Field. *Journal of Nondestructive Evaluation*, **2017**, 36, 1	2.1	12
41	Modeling for detecting micro-gap weld based on magneto-optical imaging. *Journal of Manufacturing Systems*, **2015**, 37, 193-200	9.1	12
40	Quality Monitoring for Laser Welding Based on High-Speed Photography and Support Vector Machine. *Applied Sciences (Switzerland)*, **2017**, 7, 299	2.6	11
39	Process stability analysis and weld formation evaluation during disk laser-mag hybrid welding. *Optics and Lasers in Engineering*, **2020**, 124, 105835	4.6	11
38	Elucidation of high-power disk laser welding phenomena by simultaneously observing both top and bottom of weldment. *International Journal of Advanced Manufacturing Technology*, **2017**, 88, 1141-1150	3.2	10
37	Real-time Monitoring for Disk Laser Welding Based on Feature Selection and SVM. *Applied Sciences (Switzerland)*, **2017**, 7, 884	2.6	10
36	Optimization of weld strength for laser welding of steel to PMMA using Taguchi design method. *Optics and Laser Technology*, **2021**, 136, 106726	4.2	9
35	The high frequency characteristics of laser reflection and visible light during solid state disk laser welding. *Laser Physics Letters*, **2015**, 12, 076003	1.5	8
34	Automatic gap tracking during high power laser welding based on particle filtering method and BP neural network. *International Journal of Advanced Manufacturing Technology*, **2018**, 96, 685-696	3.2	8
33	A Low-Cost Welding Status Monitoring Framework for High-Power Disk Laser Welding (December 2018). *IEEE Access*, **2019**, 7, 17365-17376	3.5	8
32	Synchronized Monitoring of Droplet Transition and Keyhole Bottom in High Power Laser-MAG Hybrid Welding Process. *IEEE Sensors Journal*, **2019**, 19, 3553-3563	4	8
31	Multidirectional magneto-optical imaging system for weld defects inspection. *Optics and Lasers in Engineering*, **2020**, 124, 105812	4.6	8

30	Detection of weld imperfection in high-power disk laser welding based on association analysis of multi-sensing features. *Optics and Laser Technology*, **2019**, 115, 306-315	4.2	7
29	Magneto-optical imaging characteristics of weld defects under alternating and rotating magnetic field excitation. *Optics and Laser Technology*, **2019**, 112, 188-197	4.2	7
28	Adjustable Ring Mode (ARM) laser welding of stainless steels. *Optics and Lasers in Engineering*, **2021** , 137, 106360	4.6	7
27	Modeling for detecting weld defects based on magneto-optical imaging. *Applied Optics*, **2018**, 57, 6110-6119	1.7	5
26	Detection model of invisible weld defects by magneto-optical imaging at rotating magnetic field directions. *Optics and Laser Technology*, **2020**, 121, 105772	4.2	5
25	Skin depth and detection ability of magneto-optical imaging for weld defects in alternating magnetic field. *Journal of Manufacturing Systems*, **2020**, 55, 44-55	9.1	4
24	Influence of Hysteresis Effect on Contrast of Welding Defects Profile in Magneto-Optical Image. *IEEE Sensors Journal*, **2020**, 20, 15034-15042	4	4
23	Influence of Sampling Frequency on Magneto-Optical Imaging Under Alternating Magnetic Field Excitation. *IEEE Sensors Journal*, **2019**, 19, 11591-11600	4	3
22	Elucidation of Metallic Plume and Spatter Characteristics Based on SVM During High-Power Disk Laser Welding. *Plasma Science and Technology*, **2015**, 17, 32-36	1.5	3
21	Identification of weld defects using magneto-optical imaging. *International Journal of Advanced Manufacturing Technology*, **2019**, 105, 1713-1722	3.2	3
20	Magneto-optical imaging characteristics of weld defects under alternating magnetic field excitation **2017**,		3
19	Monitoring of high-power disk laser welding of type 304 austenitic stainless steel based on keyhole dynamic characteristics. *Insight: Non-Destructive Testing and Condition Monitoring*, **2014**, 56, 312-317	1.3	3
18	Weld pool image centroid algorithm for seam tracking in arc welding process **2009**,		3
17	Modeling for Tracking Micro Gap Weld Based on Magneto-Optical Sensing and Kalman Filtering. *IEEE Sensors Journal*, **2021**, 21, 11598-11614	4	3
16	Magneto-optical imaging feature extraction of micro-gap weld joint under nonuniform magnetic field excitation. *Applied Optics*, **2019**, 58, 291-301	1.7	3
15	Laser-induced infrared characteristic analysis for evaluating joint deviation during austenitic stainless steel laser welding. *International Journal of Advanced Manufacturing Technology*, **2017**, 88, 1877-1888	2.9	2
14	Research on laser welding process and molding effect under energy deviation. *International Journal of Advanced Manufacturing Technology*, **2020**, 108, 1863-1874	3.2	2
13	Numerical modeling of thermal behavior of melt pool in laser additive manufacturing of Ni-based diamond tools. *Ceramics International*, **2022**,	5.1	2

12	Research on Microstructure Characteristics of Welded Joint by Magneto-Optical Imaging Method. *Metals*, **2022**, 12, 258	2.3	1
11	Multi-angle excited MOI and image processing strategies specified for detection of orthogonal weld defects.. *Optics Express*, **2022**, 30, 1280-1292	3.3	1
10	Monitoring of 304 austenitic stainless-steel laser-MIG hybrid welding process based on EMD-SVM. *Journal of Manufacturing Processes*, **2022**, 73, 736-747	5	1
9	Detection of Weld Cracks Using Magneto-optical Imaging **2018**,		1
8	Keyhole dynamic status and spatter behavior during welding of stainless steel with adjustable-ring mode laser beam. *Journal of Manufacturing Processes*, **2022**, 74, 201-219	5	0
7	Optimization of Magneto-Optical Imaging Visualization of Micro-Defects Under Combined Magnetic Field Based on Dynamic Permeability. *IEEE Transactions on Instrumentation and Measurement*, **2021**, 70, 1-9	5.2	0
6	Investigation of Laser Butt Welding of AISI 304L and Q235 Steels Based on Numerical and Experimental Analyses. *Metals*, **2022**, 12, 803	2.3	0
5	Simulation and Experiments for Magneto-Optical Imaging Detection of Complex Welding Cracks. *IEEE Sensors Journal*, **2022**, 1-1	4	0
4	Laser joining technology of polymer-metal hybrid structures - A review. *Journal of Manufacturing Processes*, **2022**, 79, 934-961	5	0
3	Effect of current stability on surface formation of GMAW-based multi-layer single-pass additive deposition. *Journal of Mechanical Science and Technology*, **2021**, 35, 2449-2458	1.6	
2	Prohibited Items Detection in X-ray Images Based on Attention Mechanism. *Journal of Physics: Conference Series*, **2021**, 1986, 012087	0.3	
1	Magneto-Optical Imaging Detection and Reconstruction of Complex-Shaped Weld Defects. *Journal of Physics: Conference Series*, **2021**, 1986, 012050	0.3	