

Edward W Reutzel

List of Publications by Year in descending order

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54
papers

2,282
citations

257101

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h-index

276539

41
g-index

54
all docs

54
docs citations

54
times ranked

1793
citing authors

#	ARTICLE	IF	CITATIONS
1	Tailoring alloy 718 laser directed energy deposition process strategies for repair applications. Journal of Laser Applications, 2022, 34, 012018.	0.8	7
2	Correlating in-situ sensor data to defect locations and part quality for additively manufactured parts using machine learning. Journal of Materials Processing Technology, 2022, 302, 117476.	3.1	25
3	Heterogeneous quality characterization and modeling of thin wall structure in additive manufacturing. Additive Manufacturing Letters, 2022, 3, 100042.	0.9	1
4	Recurrence network analysis of design-quality interactions in additive manufacturing. Additive Manufacturing, 2021, 39, 101861.	1.7	7
5	Flaw Identification in Additively Manufactured Parts Using X-ray Computed Tomography and Destructive Serial Sectioning. Journal of Materials Engineering and Performance, 2021, 30, 4958-4964.	1.2	11
6	Toward in-situ flaw detection in laser powder bed fusion additive manufacturing through layerwise imagery and machine learning. Journal of Manufacturing Systems, 2021, 59, 12-26.	7.6	94
7	Six-Sigma Quality Management of Additive Manufacturing. Proceedings of the IEEE, 2021, 109, 347-376.	16.4	31
8	A Thermo-Mechanical Analysis of Laser Hot Wire Additive Manufacturing of NAB. Metals, 2021, 11, 1023.	1.0	8
9	Nonlinear resonance ultrasonic spectroscopy (NRUS) for the quality control of additively manufactured samples. NDT and E International, 2021, 123, 102495.	1.7	10
10	Model-Based Feedforward Control of Part Height in Directed Energy Deposition. Materials, 2021, 14, 337.	1.3	9
11	Multi-modal sensor fusion with machine learning for data-driven process monitoring for additive manufacturing. Additive Manufacturing, 2021, 48, 102364.	1.7	15
12	Invited Review Article: Review of the formation and impact of flaws in powder bed fusion additive manufacturing. Additive Manufacturing, 2020, 36, 101457.	1.7	62
13	Laser glazing of cold sprayed coatings for the mitigation of stress corrosion cracking in light water reactor (LWR) applications. Surface and Coatings Technology, 2020, 386, 125429.	2.2	5
14	Formation processes for large ejecta and interactions with melt pool formation in powder bed fusion additive manufacturing. Scientific Reports, 2019, 9, 5038.	1.6	68
15	Effect of processing conditions on the microstructure, porosity, and mechanical properties of Ti-6Al-4V repair fabricated by directed energy deposition. Journal of Materials Processing Technology, 2019, 264, 172-181.	3.1	111
16	From Design Complexity to Build Quality in Additive Manufacturing—A Sensor-Based Perspective. , 2019, 3, 1-4.		6
17	Deep Learning of Variant Geometry in Layerwise Imaging Profiles for Additive Manufacturing Quality Control. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2019, 141, .	1.3	60
18	Design Rules and In-Situ Quality Monitoring of Thin-Wall Features Made Using Laser Powder Bed Fusion. , 2019, , .		11

#	ARTICLE	IF	CITATIONS
19	In Situ Monitoring of Thin-Wall Build Quality in Laser Powder Bed Fusion Using Deep Learning. Smart and Sustainable Manufacturing Systems, 2019, 3, 20190027.	0.3	14
20	Image-Guided Variant Geometry Analysis of Layerwise Build Quality in Additive Manufacturing. , 2019, , .		0
21	Application of supervised machine learning for defect detection during metallic powder bed fusion additive manufacturing using high resolution imaging. Additive Manufacturing, 2018, 21, 517-528.	1.7	228
22	Design and evaluation of an additively manufactured aircraft heat exchanger. Applied Thermal Engineering, 2018, 138, 254-263.	3.0	101
23	Effect of Substrate Thickness and Preheating on the Distortion of Laser Deposited Ti-6Al-4V. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2018, 140, .	1.3	47
24	Multi-sensor investigations of optical emissions and their relations to directed energy deposition processes and quality. Additive Manufacturing, 2018, 21, 333-339.	1.7	45
25	Build Height Control in Directed Energy Deposition Using a Model-Based Feed-Forward Controller. , 2018, , .		3
26	Layerwise In-Process Quality Monitoring in Laser Powder Bed Fusion. , 2018, , .		27
27	Reliability centered additive manufacturing computational design framework. , 2018, , .		2
28	Process Mapping and In-Process Monitoring of Porosity in Laser Powder Bed Fusion Using Layerwise Optical Imaging. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2018, 140, .	1.3	92
29	Flaw detection in powder bed fusion using optical imaging. Additive Manufacturing, 2017, 15, 1-11.	1.7	93
30	Effect of directed energy deposition processing parameters on laser deposited Inconel® 718: External morphology. Journal of Laser Applications, 2017, 29, .	0.8	56
31	Effect of directed energy deposition processing parameters on laser deposited Inconel® 718: Microstructure, fusion zone morphology, and hardness. Journal of Laser Applications, 2017, 29, .	0.8	48
32	Physics-Based Multivariable Modeling and Feedback Linearization Control of Melt-Pool Geometry and Temperature in Directed Energy Deposition. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2017, 139, .	1.3	52
33	An Extended Lumped-Parameter Model of Melt-Pool Geometry to Predict Part Height for Directed Energy Deposition. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2017, 139, .	1.3	22
34	Model prediction for deposition height during a direct metal deposition process. , 2017, , .		4
35	Predicting Microstructure From Thermal History During Additive Manufacturing for Ti-6Al-4V. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2016, 138, .	1.3	49
36	Sensing for directed energy deposition and powder bed fusion additive manufacturing at Penn State University. Proceedings of SPIE, 2016, , .	0.8	12

#	ARTICLE	IF	CITATIONS
37	Reduced-order multivariable modeling and nonlinear control of melt-pool geometry and temperature in directed energy deposition. , 2016, , .		10
38	Employing microsecond pulses to form laser-fired contacts in photovoltaic devices. Progress in Photovoltaics: Research and Applications, 2015, 23, 1025-1036.	4.4	4
39	3D spatial reconstruction of thermal characteristics in directed energy deposition through optical thermal imaging. Journal of Materials Processing Technology, 2015, 221, 172-186.	3.1	55
40	A survey of sensing and control systems for machine and process monitoring of directed-energy, metal-based additive manufacturing. Rapid Prototyping Journal, 2015, 21, 159-167.	1.6	75
41	(Re)Designing for Part Consolidation: Understanding the Challenges of Metal Additive Manufacturing. Journal of Mechanical Design, Transactions of the ASME, 2015, 137, .	1.7	140
42	A brief survey of sensing for metal-based powder bed fusion additive manufacturing. , 2015, , .		14
43	Intra-layer closed-loop control of build plan during directed energy additive manufacturing of Ti-6Al-4V. Additive Manufacturing, 2015, 6, 39-52.	1.7	62
44	Additive Manufacturing of Ti-6Al-4V Using a Pulsed Laser Beam. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 2781-2789.	1.1	30
45	Thermo-mechanical model development and validation of directed energy deposition additive manufacturing of Ti-6Al-4V. Additive Manufacturing, 2015, 5, 9-19.	1.7	301
46	Compliant articulation structure using superelastic NiTiNOL. Smart Materials and Structures, 2013, 22, 094018.	1.8	27
47	Parameter optimization of laser-doped selective emitters for applications in silicon solar cells. Proceedings of SPIE, 2012, , .	0.8	0
48	Laser-silicon interaction for selective emitter formation in photovoltaics. II. Model applications. Journal of Applied Physics, 2012, 112, .	1.1	10
49	Compliant Articulation Structure Using Superelastic NiTiNOL. , 2012, , .		1
50	Design, Manufacturing, and Testing of an Improved Watertight Door for Surface Ships. Naval Engineers Journal, 2010, 122, 93-103.	0.1	0
51	Beam delivery techniques for laser fired contacts. , 2010, , .		1
52	A differential geometry approach to analysis of thermal forming. International Journal of Mechanical Sciences, 2006, 48, 1046-1062.	3.6	13
53	Finite element modeling discretization requirements for the laser forming process. International Journal of Mechanical Sciences, 2004, 46, 623-637.	3.6	94
54	Simulation-based design of laser-based free forming process control. Journal of Laser Applications, 2001, 13, 47-59.	0.8	9