

# Edward W Reutzel

## List of Publications by Citations

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**Version:** 2024-04-20

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52  
papers

1,439  
citations

23  
h-index

37  
g-index

54  
ext. papers

1,811  
ext. citations

4.4  
avg, IF

5.26  
L-index

#	Paper	IF	Citations
52	Thermo-mechanical model development and validation of directed energy deposition additive manufacturing of Ti6Al4V. <i>Additive Manufacturing</i> , <b>2015</b> , 5, 9-19	6.1	245
51	Application of supervised machine learning for defect detection during metallic powder bed fusion additive manufacturing using high resolution imaging.. <i>Additive Manufacturing</i> , <b>2018</b> , 21, 517-528	6.1	144
50	(Re)Designing for Part Consolidation: Understanding the Challenges of Metal Additive Manufacturing. <i>Journal of Mechanical Design, Transactions of the ASME</i> , <b>2015</b> , 137,	3	93
49	Finite element modeling discretization requirements for the laser forming process. <i>International Journal of Mechanical Sciences</i> , <b>2004</b> , 46, 623-637	5.5	81
48	Effect of processing conditions on the microstructure, porosity, and mechanical properties of Ti-6Al-4V repair fabricated by directed energy deposition. <i>Journal of Materials Processing Technology</i> , <b>2019</b> , 264, 172-181	5.3	68
47	Flaw detection in powder bed fusion using optical imaging. <i>Additive Manufacturing</i> , <b>2017</b> , 15, 1-11	6.1	60
46	Process Mapping and In-Process Monitoring of Porosity in Laser Powder Bed Fusion Using Layerwise Optical Imaging. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , <b>2018</b> , 140,	3.3	58
45	A survey of sensing and control systems for machine and process monitoring of directed-energy, metal-based additive manufacturing. <i>Rapid Prototyping Journal</i> , <b>2015</b> , 21, 159-167	3.8	54
44	Design and evaluation of an additively manufactured aircraft heat exchanger. <i>Applied Thermal Engineering</i> , <b>2018</b> , 138, 254-263	5.8	51
43	Intra-layer closed-loop control of build plan during directed energy additive manufacturing of Ti6Al4V. <i>Additive Manufacturing</i> , <b>2015</b> , 6, 39-52	6.1	45
42	Effect of directed energy deposition processing parameters on laser deposited Inconel 718: External morphology. <i>Journal of Laser Applications</i> , <b>2017</b> , 29, 022001	2.1	39
41	Formation processes for large ejecta and interactions with melt pool formation in powder bed fusion additive manufacturing. <i>Scientific Reports</i> , <b>2019</b> , 9, 5038	4.9	38
40	Physics-Based Multivariable Modeling and Feedback Linearization Control of Melt-Pool Geometry and Temperature in Directed Energy Deposition. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , <b>2017</b> , 139,	3.3	36
39	Deep Learning of Variant Geometry in Layerwise Imaging Profiles for Additive Manufacturing Quality Control. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , <b>2019</b> , 141,	3.3	35
38	Predicting Microstructure From Thermal History During Additive Manufacturing for Ti-6Al-4V. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , <b>2016</b> , 138,	3.3	33
37	Effect of directed energy deposition processing parameters on laser deposited Inconel 718: Microstructure, fusion zone morphology, and hardness. <i>Journal of Laser Applications</i> , <b>2017</b> , 29, 022005	2.1	31
36	3D spatial reconstruction of thermal characteristics in directed energy deposition through optical thermal imaging. <i>Journal of Materials Processing Technology</i> , <b>2015</b> , 221, 172-186	5.3	31

35	Multi-sensor investigations of optical emissions and their relations to directed energy deposition processes and quality. <i>Additive Manufacturing</i> , <b>2018</b> , 21, 333-339	6.1	30
34	Effect of Substrate Thickness and Preheating on the Distortion of Laser Deposited Ti6Al4V. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , <b>2018</b> , 140,	3.3	26
33	Toward in-situ flaw detection in laser powder bed fusion additive manufacturing through layerwise imagery and machine learning. <i>Journal of Manufacturing Systems</i> , <b>2021</b> , 59, 12-26	9.1	26
32	Additive Manufacturing of Ti-6Al-4V Using a Pulsed Laser Beam. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , <b>2015</b> , 46, 2781-2789	2.3	24
31	Invited Review Article: Review of the formation and impact of flaws in powder bed fusion additive manufacturing. <i>Additive Manufacturing</i> , <b>2020</b> , 36, 101457	6.1	24
30	Compliant articulation structure using superelastic NiTiNOL. <i>Smart Materials and Structures</i> , <b>2013</b> , 22, 094018	3.4	23
29	Layerwise In-Process Quality Monitoring in Laser Powder Bed Fusion <b>2018</b> ,		21
28	An Extended Lumped-Parameter Model of MeltPool Geometry to Predict Part Height for Directed Energy Deposition. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , <b>2017</b> , 139,	3.3	16
27	A differential geometry approach to analysis of thermal forming. <i>International Journal of Mechanical Sciences</i> , <b>2006</b> , 48, 1046-1062	5.5	13
26	Six-Sigma Quality Management of Additive Manufacturing. <i>Proceedings of the IEEE</i> , <b>2021</b> , 109,	14.3	11
25	A brief survey of sensing for metal-based powder bed fusion additive manufacturing <b>2015</b> ,		10
24	Laser-silicon interaction for selective emitter formation in photovoltaics. II. Model applications. <i>Journal of Applied Physics</i> , <b>2012</b> , 112, 114907	2.5	9
23	Design Rules and In-Situ Quality Monitoring of Thin-Wall Features Made Using Laser Powder Bed Fusion <b>2019</b> ,		8
22	Reduced-order multivariable modeling and nonlinear control of melt-pool geometry and temperature in directed energy deposition <b>2016</b> ,		6
21	Simulation-based design of laser-based free forming process control. <i>Journal of Laser Applications</i> , <b>2001</b> , 13, 47-59	2.1	6
20	In Situ Monitoring of Thin-Wall Build Quality in Laser Powder Bed Fusion Using Deep Learning. <i>Smart and Sustainable Manufacturing Systems</i> , <b>2019</b> , 3, 20190027	0.8	6
19	Sensing for directed energy deposition and powder bed fusion additive manufacturing at Penn State University <b>2016</b> ,		5
18	From Design Complexity to Build Quality in Additive Manufacturing: A Sensor-Based Perspective <b>2019</b> , 3, 1-4		5

17	Model-Based Feedforward Control of Part Height in Directed Energy Deposition. <i>Materials</i> , <b>2021</b> , 14,	3.5	4
16	Employing microsecond pulses to form laser-fired contacts in photovoltaic devices. <i>Progress in Photovoltaics: Research and Applications</i> , <b>2015</b> , 23, 1025-1036	6.8	3
15	Multi-Modal SeNSor Fusion with Machine Learning for Data-Driven Process Monitoring for Additive Manufacturing. <i>Additive Manufacturing</i> , <b>2021</b> , 48, 102364	6.1	3
14	Flaw Identification in Additively Manufactured Parts Using X-ray Computed Tomography and Destructive Serial Sectioning. <i>Journal of Materials Engineering and Performance</i> , <b>2021</b> , 30, 4958-4964	1.6	3
13	Laser glazing of cold sprayed coatings for the mitigation of stress corrosion cracking in light water reactor (LWR) applications. <i>Surface and Coatings Technology</i> , <b>2020</b> , 386, 125429	4.4	2
12	Correlating in-situ sensor data to defect locations and part quality for additively manufactured parts using machine learning. <i>Journal of Materials Processing Technology</i> , <b>2022</b> , 302, 117476	5.3	2
11	A Thermo-Mechanical Analysis of Laser Hot Wire Additive Manufacturing of NAB. <i>Metals</i> , <b>2021</b> , 11, 10232.3		2
10	Build Height Control in Directed Energy Deposition Using a Model-Based Feed-Forward Controller <b>2018</b> ,		2
9	Model prediction for deposition height during a direct metal deposition process <b>2017</b> ,		1
8	Compliant Articulation Structure Using Superelastic NiTiNOL <b>2012</b> ,		1
7	Tailoring alloy 718 laser directed energy deposition process strategies for repair applications. <i>Journal of Laser Applications</i> , <b>2022</b> , 34, 012018	2.1	1
6	Beam delivery techniques for laser fired contacts <b>2010</b> ,		1
5	Recurrence network analysis of design-quality interactions in additive manufacturing.. <i>Additive Manufacturing</i> , <b>2021</b> , 39, 101861-101861	6.1	1
4	<b>2018</b> ,		1
3	Nonlinear resonance ultrasonic spectroscopy (NRUS) for the quality control of additively manufactured samples. <i>NDT and E International</i> , <b>2021</b> , 123, 102495	4.1	1
2	Heterogeneous quality characterization and modeling of thin wall structure in additive manufacturing. <i>Additive Manufacturing Letters</i> , <b>2022</b> , 3, 100042		0
1	Design, Manufacturing, and Testing of an Improved Watertight Door for Surface Ships. <i>Naval Engineers Journal</i> , <b>2010</b> , 122, 93-103		