Cang Zhao

List of Publications by Year
in descending order

49 papers	3,429 citations	279701 23 h-index	206029 48 g-index
53 all docs	53 docs citations	53 times ranked	1895 citing authors

#	Article	IF	Citations
1	Keyhole threshold and morphology in laser melting revealed by ultrahigh-speed x-ray imaging. Science, 2019, 363, 849-852.	6.0	592
2	Real-time monitoring of laser powder bed fusion process using high-speed X-ray imaging and diffraction. Scientific Reports, 2017, 7, 3602.	1.6	389
3	Critical instability at moving keyhole tip generates porosity in laser melting. Science, 2020, 370, 1080-1086.	6.0	316
4	Transient dynamics of powder spattering in laser powder bed fusion additive manufacturing process revealed by in-situ high-speed high-energy x-ray imaging. Acta Materialia, 2018, 151, 169-180.	3.8	276
5	Pore elimination mechanisms during 3D printing of metals. Nature Communications, 2019, 10, 3088.	5.8	158
6	Defects and anomalies in powder bed fusion metal additive manufacturing. Current Opinion in Solid State and Materials Science, 2022, 26, 100974.	5.6	157
7	Direct observation of pore formation mechanisms during LPBF additive manufacturing process and high energy density laser welding. International Journal of Machine Tools and Manufacture, 2020, 153, 103555.	6.2	143
8	Ultrafast X-ray imaging of laserâ€“metal additive manufacturing processes. Journal of Synchrotron Radiation, 2018, 25, 1467-1477.	1.0	142
9	Effect of Laser-Matter Interaction on Molten Pool Flow and Keyhole Dynamics. Physical Review Applied, 2019, 11, .	1.5	107
10	Universal scaling laws of keyhole stability and porosity in 3D printing of metals. Nature Communications, 2021, 12, 2379.	5.8	105
11	In-situ characterization and quantification of melt pool variation under constant input energy density in laser powder bed fusion additive manufacturing process. Additive Manufacturing, 2019, 28, 600-609.	1.7	103
12	In-situ high-speed X-ray imaging of piezo-driven directed energy deposition additive manufacturing. Scientific Reports, 2019, 9, 962.	1.6	96
13	Real time observation of binder jetting printing process using high-speed X-ray imaging. Scientific Reports, 2019, 9, 2499.	1.6	88
14	Revealing particle-scale powder spreading dynamics in powder-bed-based additive manufacturing process by high-speed x-ray imaging. Scientific Reports, 2018, 8, 15079.	1.6	85
15	In-situ full-field mapping of melt flow dynamics in laser metal additive manufacturing. Additive Manufacturing, 2020, 31, 100939.	1.7	69
16	In situ X-ray imaging of pore formation mechanisms and dynamics in laser powder-blown directed energy deposition additive manufacturing. International Journal of Machine Tools and Manufacture, 2021, 166, 103743.	6.2	58
17	In situ synchrotron X-ray imaging of 4140 steel laser powder bed fusion. Materialia, 2019, 6, 100306.	1.3	52
18	In Situ Analysis of Laser Powder Bed Fusion Using Simultaneous High-Speed Infrared and X-ray Imaging. Jom, 2021, 73, 201-211.	0.9	51

#	Article	IF	Citations
19	Types of spatter and their features and formation mechanisms in laser powder bed fusion additive manufacturing process. Additive Manufacturing, 2020, 36, 101438.	1.7	48
20	New Jamming Scenario: From Marginal Jamming to Deep Jamming. Physical Review Letters, 2011, 106, 125503.	2.9	44
21	Bulk-Explosion-Induced Metal Spattering During Laser Processing. Physical Review X, 2019, 9, .	2.8	34
22	The interplay between vapour, liquid, and solid phases in laser powder bed fusion. Nature Communications, 2022, 13, .	5.8	30
23	The causal relationship between melt pool geometry and energy absorption measured in real time during laser-based manufacturing. Applied Materials Today, 2021, 23, 101049.	2.3	28
24	Effect of annealing temperature and time on microstructure evolution of 0Â·2Câ€“5Mn steel during intercritical annealing process. Materials Science and Technology, 2014, 30, 791-799.	0.8	23
25	Non-dissipative energy capture of confined liquid in nanopores. Applied Physics Letters, 2014, 104, 203107.	1.5	21
26	Revealing transient powder-gas interaction in laser powder bed fusion process through multi-physics modeling and high-speed synchrotron x-ray imaging. Additive Manufacturing, 2020, 35, 101362.	1.7	20
27	Characterization of nanoporous structures: from three dimensions to two dimensions. Nanoscale, 2016, 8, 17658-17664.	2.8	18
28	Performance of thermally-chargeable supercapacitors in different solvents. Physical Chemistry Chemical Physics, 2014, 16, 12728-12730.	1.3	17
29	High-speed Synchrotron X-ray Imaging of Laser Powder Bed Fusion Process. Synchrotron Radiation News, 2019, 32, 4-8.	0.2	17
30	Investigating Powder Spreading Dynamics in Additive Manufacturing Processes by <i>In-situ</i> High-speed X-ray Imaging. Synchrotron Radiation News, 2019, 32, 9-13.	0.2	16
31	<i>In situ</i> characterization of laser-generated melt pools using synchronized ultrasound and high-speed X-ray imaging. Journal of the Acoustical Society of America, 2021, 150, 2409-2420.	0.5	16
32	Simultaneous high-speed x-ray transmission imaging and absolute dynamic absorptance measurements during high-power laser-metal processing. Procedia CIRP, 2020, 94, 775-779.	1.0	15
33	Inorganicâ€“Organic Hybrid of Lunar Soil Simulant and Polyethylene. Journal of Materials in Civil Engineering, 2016, 28, .	1.3	13
34	Crushing of circular steel tubes filled with nanoporous-materials-functionalized liquid. International Journal of Damage Mechanics, 2018, 27, 439-450.	2.4	12
35	Solidification crack propagation and morphology dependence on processing parameters in AA6061 from ultra-high-speed x-ray visualization. Additive Manufacturing, 2021, 42, 101959.	1.7	12
36	Laser powder bed fusion of Inconel 718 on 316 stainless steel. Additive Manufacturing, 2020, 36, 101500.	1.7	9

#	ARTICLE	IF	CITATIONS
37	High-temperature post-processing treatment of silica nanofoams of controlled pore sizes and porosities. Materials and Design, 2016, 90, 815-819.	3.3	8
38	Modified infiltration of solvated ions and ionic liquid in a nanoporous carbon. Applied Physics A: Materials Science and Processing, 2013, 112, 885-889.	1.1	7
39	In Situ Characterization of Hot Cracking Using Dynamic X-Ray Radiography. Minerals, Metals and Materials Series, 2019, , 77-85.	0.3	6
40	Preliminary Study on the Influence of an External Magnetic Field on Melt Pool Behavior in Laser Melting of 4140 Steel Using In-Situ X-Ray Imaging. Journal of Micro and Nano-Manufacturing, 2020, 8, .	0.8	6
41	Variation of microstructure and mechanical properties of medium Mn steels with multiphase microstructure. Materials Science and Technology, 2016, 32, 63-70.	0.8	4
42	Fast-condensing nanofoams: Suppressing localization of intense stress waves. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 676, 450-462.	2.6	4
43	Time-Resolved Geometric Feature Tracking Elucidates Laser-Induced Keyhole Dynamics. Integrating Materials and Manufacturing Innovation, 2021, 10, 677-688.	1.2	4
44	High-speed synchrotron X-ray imaging of directed energy deposition of titanium: effects of processing parameters on the formation of entrapped-gas pores. Procedia Manufacturing, 2021, 53, 148-154.	1.9	3
45	Effects of molecular polarity on nanofluidic behavior in a silicalite. International Journal of Materials Research, 2013, 104, 594-597.	0.1	2
46	In situ Characterization of Laser Powder Bed Fusion Using High-Speed Synchrotron X-ray Imaging Technique. Microscopy and Microanalysis, 2019, 25, 2566-2567.	0.2	2
47	Effects of porosity on dynamic indentation resistance of silica nanofoam. Scientific Reports, 2017, 7, 1060.	1.6	0
48	Enhanced resistance of nanocellular silica to dynamic indentation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 693, 121-128.	2.6	0
49	Appropriate Osmotic Balance Duration for Different Volumes of Ovarian Tissue in Vitrification Solution: a Study of Ovary Tissue Vitrification and Transplantation in Sheep. Cryo-Letters, 2016, 37, 365-378.	0.1	0