

Tien T Roehling

List of Publications by Year in descending order

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Version: 2024-02-01

23
papers

2,500
citations

516710

16
h-index

677142

22
g-index

23
all docs

23
docs citations

23
times ranked

2343
citing authors

#	ARTICLE	IF	CITATIONS
1	Additively manufactured hierarchical stainless steels with high strength and ductility. <i>Nature Materials</i> , 2018, 17, 63-71.	27.5	1,517
2	Microstructural control in metal laser powder bed fusion additive manufacturing using laser beam shaping strategy. <i>Acta Materialia</i> , 2020, 184, 284-305.	7.9	192
3	Modulating laser intensity profile ellipticity for microstructural control during metal additive manufacturing. <i>Acta Materialia</i> , 2017, 128, 197-206.	7.9	189
4	Controlling grain nucleation and morphology by laser beam shaping in metal additive manufacturing. <i>Materials and Design</i> , 2020, 195, 109071.	7.0	66
5	Effects of local Joule heating during the field assisted sintering of ionic ceramics. <i>Journal of the European Ceramic Society</i> , 2012, 32, 3667-3674.	5.7	65
6	Local field strengths during early stage field assisted sintering (FAST) of dielectric materials. <i>Journal of the European Ceramic Society</i> , 2012, 32, 3659-3666.	5.7	51
7	Nondiffractive beam shaping for enhanced optothermal control in metal additive manufacturing. <i>Science Advances</i> , 2021, 7, eabg9358.	10.3	47
8	Process optimization of complex geometries using feed forward control for laser powder bed fusion additive manufacturing. <i>Additive Manufacturing</i> , 2020, 34, 101169.	3.0	46
9	Reducing residual stress by selective large-area diode surface heating during laser powder bed fusion additive manufacturing. <i>Additive Manufacturing</i> , 2019, 28, 228-235.	3.0	44
10	Detecting keyhole pore defects and monitoring process signatures during laser powder bed fusion: A correlation between in situ pyrometry and ex situ X-ray radiography. <i>Additive Manufacturing</i> , 2020, 35, 101336.	3.0	43
11	Experimental Methodologies for Assessing the Surface Energy of Highly Hygroscopic Materials: The Case of Nanocrystalline Magnesia. <i>Journal of Physical Chemistry C</i> , 2011, 115, 23929-23935.	3.1	38
12	Transparent Nanocrystalline Pure and Ca-Doped MgO by Spark Plasma Sintering of Anhydrous Nanoparticles. <i>Journal of the American Ceramic Society</i> , 2012, 95, 1185-1188.	3.8	38
13	Energetics of stepwise disordering transformation in pyrochlores, RE ₂ Ti ₂ O ₇ (RE = Y, Gd and Dy). <i>Acta Materialia</i> , 2012, 60, 4303-4310.	7.9	25
14	Cooling dynamics of two titanium alloys during laser powder bed fusion probed with in situ X-ray imaging and diffraction. <i>Materials and Design</i> , 2020, 195, 108987.	7.0	25
15	Athermal and thermal mechanisms of sintering at high heating rates in the presence and absence of an externally applied field. <i>Journal of the European Ceramic Society</i> , 2012, 32, 3675-3683.	5.7	22
16	Pressure dependence of the laser-metal interaction under laser powder bed fusion conditions probed by in situ X-ray imaging. <i>Additive Manufacturing</i> , 2020, 32, 101084.	3.0	19
17	Energetics of Dysprosia-Stabilized Bismuth Oxide Electrolytes. <i>Chemistry of Materials</i> , 2012, 24, 4185-4191.	6.7	16
18	Toward multiscale simulations of tailored microstructure formation in metal additive manufacturing. <i>Materials Today</i> , 2021, 51, 65-86.	14.2	16

#	ARTICLE	IF	CITATIONS
19	A mesoscopic digital twin that bridges length and time scales for control of additively manufactured metal microstructures. JPhys Materials, 2021, 4, 034012.	4.2	14
20	Controlling melt pool shape, microstructure and residual stress in additively manufactured metals using modified laser beam profiles. Procedia CIRP, 2020, 94, 200-204.	1.9	11
21	Energetics of disordered and ordered rare earth oxide-stabilized bismuth oxide ionic conductors. Physical Chemistry Chemical Physics, 2014, 16, 2331-2337.	2.8	10
22	Spatial modulation of laser sources for microstructural control of additively manufactured metals. Procedia CIRP, 2018, 74, 607-610.	1.9	6
23	Laser beam ellipticity and microstructural control in metal additive manufacturing. , 2017, , .		0