Thomas Connolley

List of Publications by Year
in descending order

102	3,589	147801	144013
papers	citations	31 h-index	57 g-index

107	107	107	3188
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	The effect of cell geometry and trigger method on the risks associated with thermal runaway of lithium-ion batteries. Journal of Power Sources, 2022, 524, 230645.	7.8	28
2	Mechanisms controlling ductility loss from abrupt Strain Path Changes in a low carbon steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 843, 143091.	5.6	3
3	Implementing and evaluating far-field 3D X-ray diffraction at the I12 JEEP beamline, Diamond Light Source. Journal of Synchrotron Radiation, 2022, 29, 1043-1053.	2.4	2
4	Mechanistic insights into the initial explosion in the deflagration-to-detonation transition. Combustion and Flame, 2022, 242, 112175.	5.2	4
5	Mechanical characterisation of V-4Cr-4Ti alloy: Tensile tests under high energy synchrotron diffraction. Journal of Nuclear Materials, 2022, 569, 153911.	2.7	3
6	Direct observation of the dynamic evolution of precipitates in aluminium alloy 7021 at high strain rates via high energy synchrotron X-rays. Acta Materialia, 2021, 205, 116532.	7.9	7
7	In situ X-ray quantification of melt pool behaviour during directed energy deposition additive manufacturing of stainless steel. Materials Letters, 2021, 286, 129205.	2.6	28
8	Preliminary paleohistological observations of the StW 573 (â€˜Little Footâ€™) skull. ELife, 2021, 10, .	6.0	2
9	Estimating single-crystal elastic constants of polycrystalline Î² metastable titanium alloy: A Bayesian inference analysis based on high energy X-ray diffraction and micromechanical modeling. Acta Materialia, 2021, 208, 116762.	7.9	5
10	Synchrotron X-ray imaging and ultrafast tomography in situ study of the fragmentation and growth dynamics of dendritic microstructures in solidification under ultrasound. Acta Materialia, 2021, 209, 116796.	7.9	36
11	Data processing methods and data acquisition for samples larger than the field of view in parallel-beam tomography. Optics Express, 2021, 29, 17849.	3.4	21
12	Correlative Synchrotron X-ray Imaging and Diffraction of Directed Energy Deposition Additive Manufacturing. Acta Materialia, 2021, 209, 116777.	7.9	47
13	Nonuniqueness of hydrodynamic dispersion revealed using fast 4D synchrotron x-ray imaging. Science Advances, 2021, 7, eabj0960.	10.3	14
14	The transit to detonation in high explosives. AIP Conference Proceedings, 2020, , .	0.4	1
15	Quantifying Microstructural Evolution in Moving Magma. Frontiers in Earth Science, 2020, 8, .	1.8	11
16	Correlative acoustic time-of-flight spectroscopy and X-ray imaging to investigate gas-induced delamination in lithium-ion pouch cells during thermal runaway. Journal of Power Sources, 2020, 470, 228039.	7.8	30
17	A novel electromagnetic apparatus for in-situ synchrotron X-ray imaging study of the separation of phases in metal solidification. HardwareX, 2020, 7, e00104.	2.2	4
18	In situ measurement of elastic and total strains during ambient and high temperature deformation of a polygranular graphite. Carbon, 2020, 163, 308-323.	10.3	15

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19	In-situ X-ray radiography of primary Fe-rich intermetallic compound formation. Acta Materialia, 2020, 196, 759-769.	7.9	32
20	Characterization of Ultrasonic Bubble Clouds in A Liquid Metal by Synchrotron X-ray High Speed Imaging and Statistical Analysis. Materials, 2020, 13, 44.	2.9	8
21	Measurement of strain evolution in overloaded roller bearings using time-of-flight neutron diffraction. Materials and Design, 2020, 190, 108571.	7.0	7
22	Unifying the effects of in and out-of-plane constraint on the fracture of ductile materials. Journal of the Mechanics and Physics of Solids, 2020, 141, 103956.	4.8	21
23	An operando spatially resolved study of alkaline battery discharge using a novel hyperspectral detector and X-ray tomography. Journal of Applied Crystallography, 2020, 53, 1434-1443.	4.5	2
24	High-Energy Adventures at Diamond Light Source. Synchrotron Radiation News, 2020, 33, 31-36.	0.8	5
25	Measurement of strain evolution in overloaded roller bearings using energy dispersive X-ray diffraction. Tribology International, 2019, 140, 105893.	5.9	8
26	Validating 3D two-parameter fracture mechanics models for structural integrity assessments. Theoretical and Applied Fracture Mechanics, 2019, 103, 102281.	4.7	3
27	In situ characterization of work hardening and springback in grade 2 Î±-titanium under tensile load. Acta Materialia, 2019, 181, 87-98.	7.9	26
28	Application of neutron imaging to detect and quantify fatigue cracking. International Journal of Mechanical Sciences, 2019, 159, 182-194.	6.7	19
29	Understanding the Highly Dynamic Phenomena in Ultrasonic Melt Processing by Ultrafast Synchrotron X-ray Imaging. Minerals, Metals and Materials Series, 2019, , 1539-1544.	0.4	0
30	Localised prior strain-hardening increases the tearing resistance of ductile steel. International Journal of Mechanical Sciences, 2019, 150, 103-111.	6.7	4
31	3D characterisation of the Fe-rich intermetallic phases in recycled Al alloys by synchrotron X-ray microtomography and skeletonisation. Scripta Materialia, 2018, 146, 321-326.	5.2	52
32	Data and videos for ultrafast synchrotron X-ray imaging studies of metal solidification under ultrasound. Data in Brief, 2018, 17, 837-841.	1.0	5
33	In-situ synchrotron X-ray radiography observation of primary Al2Cu intermetallic growth on fragments of aluminium oxide film. Materials Letters, 2018, 213, 303-305.	2.6	19
34	Ultrafast synchrotron X-ray imaging studies of microstructure fragmentation in solidification under ultrasound. Acta Materialia, 2018, 144, 505-515.	7.9	112
35	Revealing internal flow behaviour in arc welding and additive manufacturing of metals. Nature Communications, 2018, 9, 5414.	12.8	158
36	Mapping of axial plastic zone for roller bearing overloads using neutron transmission imaging. Materials and Design, 2018, 156, 103-112.	7.0	10

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37	Development of an X-ray imaging system to preventÂscintillator degradation for white synchrotron radiation. Journal of Synchrotron Radiation, 2018, 25, 801-807.	2.4	20
38	In situ mapping of normal strains in the field of a growing fatigue crack in a steel weld using digital image correlation and energy dispersive synchrotron X-ray diffraction. International Journal of Fatigue, 2018, 115, 11-19.	5.7	6
39	Dynamic contact strain measurement by timeâ€resolved stroboscopic energy dispersive synchrotron Xâ€ray diffraction. Strain, 2017, 53, e12221.	2.4	18
40	In Situ Observation of Fragmentation of Primary Crystals by Ultrasonic Cavitation in Water. Minerals, Metals and Materials Series, 2017, , 213-219.	0.4	0
41	On the occurrence of a eutectic-type structure in solidification of Al-Zr alloys. Scripta Materialia, 2017, 133, 75-78.	5.2	20
42	In situ observation of ultrasonic cavitation-induced fragmentation of the primary crystals formed in Al alloys. Ultrasonics Sonochemistry, 2017, 39, 66-76.	8.2	86
43	Influence of ultrasonic treatment on formation of primary Al 3 Zr in Alâ€“0.4Zr alloy. Transactions of Nonferrous Metals Society of China, 2017, 27, 977-985.	4.2	30
44	A synchrotron X-radiography study of the fragmentation and refinement of primary intermetallic particles in an Al-35 Cu alloy induced by ultrasonic melt processing. Acta Materialia, 2017, 141, 142-153.	7.9	131
45	Experimental investigation into the size effect on the microscale fatigue behaviour of 316L stainless steel. International Journal of Fatigue, 2017, 95, 1-7.	5.7	11
46	A synchrotron X-ray diffraction study of non-proportional strain-path effects. Acta Materialia, 2017, 124, 290-304.	7.9	30
47	GigaFRoST: the gigabit fast readout system for tomography. Journal of Synchrotron Radiation, 2017, 24, 1250-1259.	2.4	139
48	Direct Observation of Elastic and Plastic Strain Fields During Ductile Tearing of a Ferritic Steel. , 2016, , .		1
49	The spatial and temporal distribution of dendrite fragmentation in solidifying Al-Cu alloys under different conditions. Acta Materialia, 2016, 121, 384-395.	7.9	69
50	A refining mechanism of primary Al3Ti intermetallic particles byÂultrasonic treatment in the liquid state. Acta Materialia, 2016, 116, 354-363.	7.9	109
51	Energy dispersive detector for white beam synchrotron x-ray fluorescence imaging. AIP Conference Proceedings, 2016, , .	0.4	3
52	On the possibility of using X-ray Compton scattering to study magnetoelectrical properties of crystals. Acta Crystallographica Section A: Foundations and Advances, 2016, 72, 197-205.	0.1	7
53	Time-resolved synchrotron tomographic quantification of deformation during indentation of an equiaxed semi-solid granular alloy. Acta Materialia, 2016, 105, 338-346.	7.9	40
54	Effect of ultrasonic melt treatment on the refinement of primary Al3Ti intermetallic in an Alâ€“0.4Ti alloy. Journal of Crystal Growth, 2016, 435, 24-30.	1.5	53

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55	Mapping of multi-elements during melting and solidification using synchrotron X-rays and pixel-based spectroscopy. Scientific Reports, 2015, 5, 15988.	3.3	17
56	High speed synchrotron X-ray imaging of ultrasonic bubble cloud in liquid metal. Journal of Physics: Conference Series, 2015, 656, 012178.	0.4	0
57	Synchrotron X-ray Tomographic Quantification of Deformation Induced Strain Localisation in Semi-solid Al- 15wt.%Cu. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012079.	0.6	4
58	Time-resolved synchrotron diffractometry of phase transformations in high strength nickel-based superalloys. Acta Materialia, 2015, 94, 244-256.	7.9	33
59	Time-resolved synchrotron tomographic quantification of deformation-induced flow in a semi-solid equiaxed dendritic Alâ€“Cu alloy. Scripta Materialia, 2015, 103, 69-72.	5.2	23
60	I12: the Joint Engineering, Environment and Processing (JEEP) beamline at Diamond Light Source. Journal of Synchrotron Radiation, 2015, 22, 828-838.	2.4	219
61	High-Speed Synchrotron X-ray Imaging Studies of the Ultrasound Shockwave and Enhanced Flow during Metal Solidification Processes. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 2851-2861.	2.2	53
62	Mapping the Inhomogeneous Electrochemical Reaction Through Porous LiFePO4-Electrodes in a Standard Coin Cell Battery. Chemistry of Materials, 2015, 27, 2374-2386.	6.7	93
63	A synchrotron X-ray diffraction study of in situ biaxial deformation. Acta Materialia, 2015, 90, 46-58.	7.9	48
64	Characterisation of short fatigue cracks in titanium alloy IMI 834 using X-ray microtomography. Acta Materialia, 2015, 99, 49-62.	7.9	44
65	Transgranular liquation cracking of grains in the semi-solid state. Nature Communications, 2015, 6, 8300.	12.8	72
66	Residual stresses and microstructure in Powder Bed Direct Laser Deposition (PB DLD) samples. International Journal of Material Forming, 2015, 8, 245-254.	2.0	33
67	Development of EMâ€CCDâ€based Xâ€ray detector for synchrotron applications. Electronics Letters, 2014, 50, 1224-1226.	1.0	2
68	A synchrotron X-ray radiography study of dendrite fragmentation induced by a pulsed electromagnetic field in an Alâ€“15Cu alloy. Acta Materialia, 2014, 70, 228-239.	7.9	174
69	Understanding the deformation mechanism of individual phases of a ZrTi-based bulk metallic glass matrix composite using in situ diffraction and imaging methods. Applied Physics Letters, 2014, 104, 031912.	3.3	18
70	Influence of Fe-rich intermetallics on solidification defects in Alâ€“Siâ€“Cu alloys. Acta Materialia, 2014, 68, 42-51.	7.9	127
71	Dark-field hyperspectral X-ray imaging. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20130629.	2.1	19
72	Revealing the micromechanisms behind semi-solid metal deformation with time-resolved X-ray tomography. Nature Communications, 2014, 5, 4464.	12.8	94

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73	Pore behaviour during semi-solid alloy compression: Insights into defect creation under pressure. Scripta Materialia, 2014, 89, 73-76.	5.2	16
74	In situ synchrotron tomographic quantification of granular and intragranular deformation during semi-solid compression of an equiaxed dendritic Alâ€“Cu alloy. Acta Materialia, 2014, 76, 371-380.	7.9	84
75	The onset of plasticity of a Zr-based bulk metallic glass. International Journal of Plasticity, 2014, 60, 87-100.	8.8	52
76	Comparison of EM-CCD and scientific CMOS based camera systems for high resolution X-ray imaging and tomography applications. Journal of Instrumentation, 2014, 9, P06017-P06017.	1.2	3
77	Residual stresses in Linear Friction Welding of aluminium alloys. Materials & Design, 2013, 50, 360-369.	5.1	60
78	Synchrotron Tomographic Characterization of Damage Evolution During Aluminum Alloy Solidification. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 5389-5395.	2.2	31
79	A new parameter for modelling three-dimensional damage evolution validated by synchrotron tomography. Acta Materialia, 2013, 61, 7616-7623.	7.9	19
80	In situ study of the evolution of atomic strain of bulk metallic glass and its effects on shear band formation. Scripta Materialia, 2013, 69, 207-210.	5.2	18
81	Visualization of membrane protein crystals in lipid cubic phase using X-ray imaging. Acta Crystallographica Section D: Biological Crystallography, 2013, 69, 1252-1259.	2.5	22
82	A feasibility study of dynamic stress analysis insideÂaÂrunning internal combustion engine usingÂsynchrotron X-ray beams. Journal of Synchrotron Radiation, 2013, 20, 316-323.	2.4	14
83	Complete elliptical ring geometry provides energy and instrument calibration for synchrotron-based two-dimensional X-ray diffraction. Journal of Applied Crystallography, 2013, 46, 1249-1260.	4.5	54
84	Quantifying damage accumulation during the hot deformation of free-cutting steels using ultra-fast synchrotron tomography. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012038.	0.6	7
85	Quantification of passivation layer growth in inert anodes for molten salt electrochemistry byin situenergy-dispersive diffraction. Journal of Applied Crystallography, 2012, 45, 28-37.	4.5	10
86	Inâ€Situ Observation of Cracks in Frozen Soil using Synchrotron Tomography. Permafrost and Periglacial Processes, 2012, 23, 170-176.	3.4	31
87	Region-of-interest tomography using filtered backprojection: assessing the practical limits. Journal of Microscopy, 2011, 241, 69-82.	1.8	83
88	In situ X-ray observation of semi-solid deformation and failure in Alâ€“Cu alloys. Acta Materialia, 2011, 59, 1436-1444.	7.9	72
89	A novel technique combining high-resolution synchrotron x-ray microtomography and x-ray diffraction for characterization of micro particulates. Measurement Science and Technology, 2011, 22, 115703.	2.6	7
90	Polycrystal deformation analysis by high energy synchrotron X-ray diffraction on the I12 JEEP beamline at Diamond Light Source. Materials Letters, 2010, 64, 1724-1727.	2.6	16

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91	Bonding of single crystal silicon to Cu and AlN: Trial results. Science and Technology of Welding and Joining, 2009, 14, 1-3.	3.1	4
92	Obtaining local reciprocal lattice vectors from finite-element analysis. Journal of Synchrotron Radiation, 2008, 15, 584-592.	2.4	5
93	Ray traces of an arbitrarily deformed double-crystal Laue x-ray monochromator. Proceedings of SPIE, 2008, , .	0.8	5
94	Finite element comparison of performance related characteristics of balloon expandable stents. Computer Methods in Biomechanics and Biomedical Engineering, 2007, 10, 103-110.	1.6	20
95	X-ray micro-tomography of a coronary stent deployed in a model artery. Medical Engineering and Physics, 2007, 29, 1132-1141.	1.7	14
96	A combined experimental and computational study of deformation in grains of biomedical grade 316LVM stainless steel. Acta Materialia, 2006, 54, 4825-4840.	7.9	19
97	The influence of grain size on the ductility of micro-scale stainless steel stent struts. Journal of Materials Science: Materials in Medicine, 2006, 17, 1-6.	3.6	21
98	A review of deformation and fatigue of metals at small size scales. Fatigue and Fracture of Engineering Materials and Structures, 2005, 28, 1119-1152.	3.4	87
99	Short crack initiation and growth at 600Â°C in notched specimens of Inconel718. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 340, 139-154.	5.6	98
100	Assessment of the fatigue crack closure phenomenon in damage-tolerant aluminium alloy byin-situhigh-resolution synchrotron X-ray microtomography. Philosophical Magazine, 2003, 83, 2429-2448.	1.6	108
101	A Synchrotron X-Ray Radiography Investigation of Induced Dendrite Fragmentation in Al-15wt%Cu. Materials Science Forum, 0, 765, 210-214.	0.3	5
102	An Experimental Procedure to Determine the Interaction between Applied Loads and Residual Stresses. Materials Science Forum, 0, 768-769, 733-740.	0.3	2