

Simone Carmignato

List of Publications by Year in descending order

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137
papers

4,380
citations

147801

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123424

61
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141
all docs

141
docs citations

141
times ranked

3254
citing authors

#	ARTICLE	IF	CITATIONS
1	Computed tomography for dimensional metrology. CIRP Annals - Manufacturing Technology, 2011, 60, 821-842.	3.6	506
2	Industrial applications of computed tomography. CIRP Annals - Manufacturing Technology, 2014, 63, 655-677.	3.6	467
3	X-ray computed tomography. Nature Reviews Methods Primers, 2021, 1, .	21.2	305
4	Low- and high-cycle fatigue resistance of Ti-6Al-4V ELI additively manufactured via selective laser melting: Mean stress and defect sensitivity. International Journal of Fatigue, 2018, 107, 96-109.	5.7	202
5	Geometrical metrology for metal additive manufacturing. CIRP Annals - Manufacturing Technology, 2019, 68, 677-700.	3.6	193
6	Porosity testing methods for the quality assessment of selective laser melted parts. CIRP Annals - Manufacturing Technology, 2016, 65, 201-204.	3.6	134
7	Accuracy of industrial computed tomography measurements: Experimental results from an international comparison. CIRP Annals - Manufacturing Technology, 2012, 61, 491-494.	3.6	125
8	On the effect of geometrical imperfections and defects on the fatigue strength of cellular lattice structures additively manufactured via Selective Laser Melting. International Journal of Fatigue, 2019, 124, 348-360.	5.7	119
9	Towards geometrical calibration of x-ray computed tomography systems—a review. Measurement Science and Technology, 2015, 26, 092003.	2.6	97
10	Investigating the technological limits of micro-injection molding in replicating high aspect ratio micro-structured surfaces. CIRP Annals - Manufacturing Technology, 2014, 63, 521-524.	3.6	79
11	A 3D edge detection technique for surface extraction in computed tomography for dimensional metrology applications. CIRP Annals - Manufacturing Technology, 2013, 62, 531-534.	3.6	65
12	Uncertainty evaluation of volumetric wear assessment from coordinate measurements of ceramic hip joint prostheses. Wear, 2011, 270, 584-590.	3.1	57
13	Micro porosity analysis in additive manufactured NiTi parts using micro computed tomography and electron microscopy. Materials and Design, 2016, 90, 745-752.	7.0	57
14	Porosity measurements by X-ray computed tomography: Accuracy evaluation using a calibrated object. Precision Engineering, 2017, 49, 377-387.	3.4	56
15	Dimensional artefacts to achieve metrological traceability in advanced manufacturing. CIRP Annals - Manufacturing Technology, 2020, 69, 693-716.	3.6	56
16	Testing of x-ray microtomography systems using a traceable geometrical standard. Measurement Science and Technology, 2009, 20, 084021.	2.6	54
17	An hysteresis energy-based synthesis of fully reversed axial fatigue behaviour of different polypropylene composites. Composites Part B: Engineering, 2014, 65, 17-25.	12.0	42
18	Characterisation of additively manufactured metal surfaces by means of X-ray computed tomography and generalised surface texture parameters. CIRP Annals - Manufacturing Technology, 2019, 68, 515-518.	3.6	42

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19	Modified Stober synthesis of highly luminescent dye-doped silica nanoparticles. <i>Journal of Nanoparticle Research</i> , 2011, 13, 4349-4356.	1.9	41
20	Economic benefits of metrology in manufacturing. <i>CIRP Annals - Manufacturing Technology</i> , 2016, 65, 495-498.	3.6	40
21	Influence of surface roughness on X-ray computed tomography dimensional measurements of additive manufactured parts. <i>Case Studies in Nondestructive Testing and Evaluation</i> , 2016, 6, 104-110.	1.7	40
22	Influence of surface roughness on computed tomography dimensional measurements. <i>CIRP Annals - Manufacturing Technology</i> , 2017, 66, 499-502.	3.6	40
23	Additively manufactured Ti-6Al-4V thin struts via laser powder bed fusion: Effect of building orientation on geometrical accuracy and mechanical properties. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021, 119, 104495.	3.1	40
24	Particle based method and X-ray computed tomography for pore-scale flow characterization in VRFB electrodes. <i>Energy Storage Materials</i> , 2019, 16, 91-96.	18.0	39
25	Laser cutting of lithium iron phosphate battery electrodes: Characterization of process efficiency and quality. <i>Optics and Laser Technology</i> , 2015, 65, 164-174.	4.6	38
26	Analysis of the shrinkage of injection-molded fiber-reinforced thin-wall parts. <i>Materials and Design</i> , 2017, 132, 496-504.	7.0	38
27	Traceable volume measurements using coordinate measuring systems. <i>CIRP Annals - Manufacturing Technology</i> , 2011, 60, 519-522.	3.6	37
28	Metrological performance of optical coordinate measuring machines under industrial conditions. <i>CIRP Annals - Manufacturing Technology</i> , 2010, 59, 497-500.	3.6	36
29	Dimensional measurement of micro-moulded parts by computed tomography. <i>Measurement Science and Technology</i> , 2012, 23, 125401.	2.6	36
30	Two-spheres method for evaluating the metrological structural resolution in dimensional computed tomography. <i>Measurement Science and Technology</i> , 2017, 28, 114002.	2.6	36
31	Effect of the geometrical defectiveness on the mechanical properties of SLM biomedical Ti6Al4V lattices. <i>Procedia Structural Integrity</i> , 2018, 13, 161-167.	0.8	36
32	Thermal drift study on different commercial scanning probe microscopes during the initial warming-up phase. <i>Measurement Science and Technology</i> , 2011, 22, 094016.	2.6	34
33	Ceramic-on-Metal for Total Hip Replacement: Mixing and Matching Can Lead to High Wear. <i>Artificial Organs</i> , 2010, 34, 319-323.	1.9	31
34	Reference object for evaluating the accuracy of porosity measurements by X-ray computed tomography. <i>Case Studies in Nondestructive Testing and Evaluation</i> , 2016, 6, 122-127.	1.7	30
35	Geometrical modelling of scanning probe microscopes and characterization of errors. <i>Measurement Science and Technology</i> , 2009, 20, 084013.	2.6	29
36	Alumina-on-alumina hip implants. <i>Journal of Bone and Joint Surgery: British Volume</i> , 2012, 94-B, 37-42.	3.4	29

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37	CMM-based procedure for polyethylene non-congruous unicompartamental knee prosthesis wear assessment. <i>Wear</i> , 2009, 267, 753-756.	3.1	27
38	Error Sources in Atomic Force Microscopy for Dimensional Measurements: Taxonomy and Modeling. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2010, 132, .	2.2	27
39	Atomic force acoustic microscopy for quantitative nanomechanical characterization. <i>Wear</i> , 2011, 271, 534-538.	3.1	27
40	Evaluating the effects of detector angular misalignments on simulated computed tomography data. <i>Precision Engineering</i> , 2016, 45, 230-241.	3.4	27
41	A New Method for Thread Calibration on Coordinate Measuring Machines. <i>CIRP Annals - Manufacturing Technology</i> , 2003, 52, 447-450.	3.6	26
42	Calibration artefact for the microscale with high aspect ratio: The fiber gauge. <i>CIRP Annals - Manufacturing Technology</i> , 2008, 57, 497-500.	3.6	26
43	Micro-drilling and Threading of the Ti6Al4V Titanium Alloy Produced through Additive Manufacturing. <i>Procedia CIRP</i> , 2016, 46, 583-586.	1.9	26
44	Effects of powder reuse on the microstructure and mechanical behaviour of Al-Mg-Sc-Zr alloy processed by laser powder bed fusion (LPBF). <i>Additive Manufacturing</i> , 2020, 36, 101625.	3.0	24
45	High speed pulsed laser cutting of LiCoO ₂ Li-ion battery electrodes. <i>Optics and Laser Technology</i> , 2017, 94, 90-96.	4.6	23
46	Traceable Porosity Measurements in Industrial Components Using X-Ray Computed Tomography. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2019, 141, .	2.2	23
47	Simulating the influence of scatter and beam hardening in dimensional computed tomography. <i>Measurement Science and Technology</i> , 2017, 28, 104001.	2.6	22
48	X-ray computed tomography for metal additive manufacturing: challenges and solutions for accuracy enhancement. <i>Procedia CIRP</i> , 2018, 75, 114-118.	1.9	22
49	Effect of heat treatment temperature and turning residual stresses on the plain and notch fatigue strength of Ti-6Al-4V additively manufactured via laser powder bed fusion. <i>International Journal of Fatigue</i> , 2022, 162, 107009.	5.7	22
50	Unicompartamental knee prostheses: <i>in vitro</i> wear assessment of the menisci tibial insert after two different fixation methods. <i>Physics in Medicine and Biology</i> , 2008, 53, 5357-5369.	3.0	21
51	Fatigue properties of Ti6Al4V cellular specimens fabricated via SLM: CAD vs real geometry. <i>Procedia Structural Integrity</i> , 2017, 7, 116-123.	0.8	21
52	Enhancing the accuracy of high-speed laser triangulation measurement of freeform parts at elevated temperature. <i>CIRP Annals - Manufacturing Technology</i> , 2015, 64, 499-502.	3.6	20
53	Experimental analysis of mechanical properties and microstructure of long glass fiber reinforced polypropylene processed by rapid heat cycle injection molding. <i>Composites Part A: Applied Science and Manufacturing</i> , 2018, 107, 366-373.	7.6	20
54	Benchmarking of Laser Powder Bed Fusion Machines. <i>Journal of Manufacturing and Materials Processing</i> , 2019, 3, 85.	2.2	20

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55	New Approach for Verifying the Accuracy of X-ray Computed Tomography Measurements of Surface Topographies in Additively Manufactured Metal Parts. <i>Journal of Nondestructive Evaluation</i> , 2019, 38, 1.	2.4	20
56	Precision Metal Additive Manufacturing. , 0, , .		20
57	Multiaxial plain and notch fatigue strength of thick-walled ductile cast iron EN-GJS-600-3: Combining multiaxial fatigue criteria, theory of critical distances, and defect sensitivity. <i>International Journal of Fatigue</i> , 2022, 156, 106703.	5.7	20
58	Enhanced dimensional measurement by fast determination and compensation of geometrical misalignments of X-ray computed tomography instruments. <i>CIRP Annals - Manufacturing Technology</i> , 2018, 67, 523-526.	3.6	19
59	Measurement of the X-ray computed tomography instrument geometry by minimization of reprojection errorsâ€™ implementation on simulated data. <i>Precision Engineering</i> , 2018, 54, 7-20.	3.4	19
60	The use of Raman spectroscopy in the analysis of UHMWPE uni-condylar bearing systems after run on a force and displacement control knee simulators. <i>Wear</i> , 2013, 297, 781-790.	3.1	18
61	Principles of X-ray Computed Tomography. , 2018, , 25-67.		18
62	The effect of strut size on microstructure and compressive strength of porous Ti6Al4V lattices printed via Direct Ink Writing. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 787, 139484.	5.6	18
63	Coordinate metrology using scanning probe microscopes. <i>Measurement Science and Technology</i> , 2009, 20, 084002.	2.6	17
64	Precision additive manufacturing of NiTi parts using micro direct metal deposition. <i>International Journal of Advanced Manufacturing Technology</i> , 2018, 96, 3729-3736.	3.0	17
65	Feature-Oriented Measurement Strategy in Atomic Force Microscopy. <i>CIRP Annals - Manufacturing Technology</i> , 2007, 56, 557-560.	3.6	16
66	Fundamental correction strategies for accuracy improvement of dimensional measurements obtained from a conventional micro-CT cone beam machine. <i>CIRP Journal of Manufacturing Science and Technology</i> , 2013, 6, 143-148.	4.5	16
67	Solute transport and reaction in porous electrodes at high Schmidt numbers. <i>Journal of Fluid Mechanics</i> , 2020, 896, .	3.4	16
68	Computed Tomography as a Tool for Examining Surface Integrity in Drilled Holes in CFRP Composites. <i>Procedia CIRP</i> , 2014, 13, 43-48.	1.9	15
69	Experimental and computational evaluation of tensile properties of additively manufactured hexa- and tetrachiral auxetic cellular structures. <i>Additive Manufacturing</i> , 2021, 45, 102022.	3.0	15
70	Plain and notch fatigue strength of thick-walled ductile cast iron EN-GJS-600-3: A double-notch critical distance approach to defect sensitivity. <i>International Journal of Fatigue</i> , 2021, 152, 106414.	5.7	15
71	Severe damage of alumina-on-alumina hip implants: Wear assessments at a microscopic level. <i>Journal of the European Ceramic Society</i> , 2012, 32, 3647-3657.	5.7	14
72	Uncertainty determination for X-ray computed tomography wear assessment of polyethylene hip joint prostheses. <i>Precision Engineering</i> , 2018, 52, 477-483.	3.4	14

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73	Measurement of the X-ray computed tomography instrument geometry by minimization of reprojection errors – Implementation on experimental data. Precision Engineering, 2018, 54, 107-117.	3.4	14
74	Advances in the metrological traceability and performance of X-ray computed tomography. CIRP Annals - Manufacturing Technology, 2022, 71, 693-716.	3.6	14
75	Quantification of Wear and Deformation in Different Configurations of Polyethylene Acetabular Cups Using Micro X-ray Computed Tomography. Materials, 2017, 10, 259.	2.9	13
76	Metrological validation for 3D modeling of dental plaster casts. Medical Engineering and Physics, 2007, 29, 954-966.	1.7	12
77	Critical factors in quantitative Atomic Force Acoustic Microscopy. CIRP Journal of Manufacturing Science and Technology, 2010, 3, 49-54.	4.5	12
78	Metrological performance verification of coordinate measuring systems with optical distance sensors. International Journal of Precision Technology, 2011, 2, 153.	0.2	12
79	Applications of CT for Dimensional Metrology. , 2018, , 333-369.		12
80	Analysis of an as-built metal additively manufactured tool cavity insert performance and advantages for plastic injection moulding. Journal of Manufacturing Processes, 2021, 61, 369-382.	5.9	12
81	High-Speed Measurement of Complex Shaped Parts at Elevated Temperature by Laser Triangulation. International Journal of Automation Technology, 2015, 9, 558-566.	1.0	12
82	Effect of long-term irrigation and tillage practices on X-ray CT and gas transport derived pore-network characteristics. Soil Research, 2019, 57, 657.	1.1	11
83	Quality and Productivity Considerations for Laser Cutting of LiFePO4 and LiNiMnCoO2 Battery Electrodes. Procedia CIRP, 2016, 42, 433-438.	1.9	10
84	Uniaxial static mechanical properties of regular, irregular and random additively manufactured cellular materials: Nominal vs. real geometry. Forces in Mechanics, 2021, 2, 100007.	2.8	10
85	Micro X-Ray Computed Tomography Mass Loss Assessment of Different UHMWPE: A Hip Joint Simulator Study on Standard vs. Cross-Linked Polyethylene. PLoS ONE, 2017, 12, e0170263.	2.5	10
86	Quantification of Wear Rates and Plastic Deformation on Mobile Unicompartmental UHMWPE Tibial Knee Inserts. Tribology Letters, 2013, 52, 57-65.	2.6	8
87	Critical Factors in Cantilever Near-Field Scanning Optical Microscopy. IEEE Sensors Journal, 2014, 14, 3236-3244.	4.7	8
88	Pulsed Laser Profiling of Grinding Wheels at Normal and Quasi-Tangential Incidence. Lasers in Manufacturing and Materials Processing, 2016, 3, 158-173.	2.2	8
89	Fusion of photogrammetry and coherence scanning interferometry data for all-optical coordinate measurement. CIRP Annals - Manufacturing Technology, 2018, 67, 599-602.	3.6	8
90	Quality enhancement of microstructure and surface topography of NiTi parts produced by laser powder bed fusion. CIRP Journal of Manufacturing Science and Technology, 2020, 31, 575-582.	4.5	8

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91	Pore-Scale Transport and Two-Phase Fluid Structures in Fibrous Porous Layers: Application to Fuel Cells and Beyond. <i>Transport in Porous Media</i> , 2021, 136, 245-270.	2.6	8
92	Nanosecond and sub-nanosecond pulsed laser ablation of thin single and multi-layer packaging films. <i>Applied Surface Science</i> , 2013, 285, 300-308.	6.1	7
93	A Testpart for Interdisciplinary Analyses in Micro Production Engineering. <i>Procedia CIRP</i> , 2015, 28, 106-112.	1.9	7
94	Qualification and Testing of CT Systems. , 2018, , 185-228.		7
95	Integrated friction measurements in hip wear simulations: Short-term results. <i>Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine</i> , 2010, 224, 865-876.	1.8	6
96	Lithium iron phosphate battery electrode integrity following high speed pulsed laser cutting. <i>Applied Physics A: Materials Science and Processing</i> , 2015, 119, 431-435.	2.3	6
97	Dimensional verification of metal additively manufactured lattice structures by X-ray computed tomography: Use of a newly developed calibrated artefact to achieve metrological traceability. <i>Additive Manufacturing</i> , 2021, 47, 102229.	3.0	6
98	Long term thermal drift study on SPM scanners. <i>Mechatronics</i> , 2011, 21, 1272-1278.	3.3	5
99	Correction Strategies for the Use of a Conventional Micro-CT Cone Beam Machine for Metrology Applications. <i>Procedia CIRP</i> , 2012, 2, 34-37.	1.9	5
100	May the surface roughness of the retrieved femoral head influence the wear behavior of the polyethylene liner?. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2016, 104, 1374-1385.	3.4	5
101	An In Vivo Study in Rat Femurs of Bioactive Silicate Coatings on Titanium Dental Implants. <i>Journal of Clinical Medicine</i> , 2020, 9, 1290.	2.4	5
102	Establishment of metrological traceability in porosity measurements by x-ray computed tomography. , 2017, , .		5
103	Estimating angle-dependent systematic error and measurement uncertainty for a conoscopic holography measurement system. <i>Proceedings of SPIE</i> , 2009, , .	0.8	4
104	Elastic-properties measurement at high temperatures through contact resonance atomic force microscopy. <i>AIP Conference Proceedings</i> , 2015, , .	0.4	4
105	Enhancing multisensor data fusion on light sectioning coordinate measuring systems for the in-process inspection of freeform shaped parts. <i>Precision Engineering</i> , 2016, 45, 209-215.	3.4	4
106	Multi-material gap measurements using dual-energy computed tomography. <i>Precision Engineering</i> , 2018, 54, 420-426.	3.4	4
107	Towards Optimization of $\hat{1}/4$ -Injection Molding Process for a New V-shaped Geometrical Component Using X-Ray CT-Based Quality Characterization. <i>Journal of Manufacturing and Materials Processing</i> , 2019, 3, 13.	2.2	4
108	A novel tomographic characterisation approach for sag and dross defects in metal additively manufactured channels. <i>Additive Manufacturing</i> , 2021, 39, 101892.	3.0	4

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109	Investigation on Tomographic-Based Nondestructive Characterization of Short Glass Fiber-Reinforced Composites as Obtained From Micro Injection Molding. Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, 2020, 3, .	0.9	4
110	The influence of geometric defects and microstructure in the simulation of the mechanical behaviour of laser powder-bed fusion components: Application to endoprosthesis. Journal of Manufacturing Processes, 2021, 71, 541-549.	5.9	4
111	Reference object for traceability establishment in X-ray computed tomography measurements of fiber length in fiber-reinforced polymeric materials. Precision Engineering, 2022, 77, 33-39.	3.4	4
112	Study and integration of microtechnologies for smart assembly of hybrid micro-products. International Journal of Mechatronics and Manufacturing Systems, 2009, 2, 265.	0.1	3
113	Experimental study on performance verification tests for coordinate measuring systems with optical distance sensors. Proceedings of SPIE, 2009, , .	0.8	3
114	Wear analysis through surface relocation. Journal of Physics: Conference Series, 2011, 311, 012020.	0.4	3
115	Assessment of Gradient-Based Algorithm for Surface Determination in Multi-Material Gap Measurements by X ray Computed Tomography. Materials, 2020, 13, 5650.	2.9	3
116	Characterization of Geometry and Surface Texture of AlSi10Mg Laser Powder Bed Fusion Channels Using X-ray Computed Tomography. Applied Sciences (Switzerland), 2021, 11, 4304.	2.5	3
117	Benefit quantification of interoperability in coordinate metrology. CIRP Annals - Manufacturing Technology, 2014, 63, 477-480.	3.6	2
118	Pulsed Laser Ablation of Lithium Ion Battery Electrodes. , 2014, , .		2
119	Generalization of profile texture parameters for additively manufactured surfaces. Journal of Physics: Conference Series, 2018, 1065, 212019.	0.4	2
120	Assessment and verification of mean effective diameter of internal channels fabricated by laser powder bed fusion. Procedia CIRP, 2020, 94, 414-418.	1.9	2
121	Conformation and mechanics of the polymeric cuff of artificial urinary sphincter. Mathematical Biosciences and Engineering, 2020, 17, 3894-3908.	1.9	2
122	Contrast based method for the automated analysis of transfer functions and spatial resolution limits of micro- and nano-focus computed tomography systems: Evaluation with simulated data. Optics and Lasers in Engineering, 2022, 157, 107113.	3.8	2
123	Validation of the measurement performance of a three-dimensional vision sensor by means of a coordinate measuring machine. , 0, , .		1
124	Metrological analysis of a procedure for the automatic 3d modeling of dental plaster casts. , 0, , .		1
125	An industrial comparison of coordinate measuring systems equipped with optical sensors: the VideoAUDIT Project. , 2009, , .		1
126	Surface measurements of radio antenna panels with white-light interferometry. Proceedings of SPIE, 2010, , .	0.8	1

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127	Picosecond and Nanosecond Pulsed Laser Ablation of Aluminium Foil. , 2013, , .		1
128	Laser Profiling of Aluminum Oxide Grinding Wheels. , 2015, , .		1
129	A methodology for 3D geometrical characterisation of microfluidic channels using optical microscopy. Journal of Micromechanics and Microengineering, 2019, 29, 045011.	2.6	1
130	Analysing Machining Errors Resulting from a Micromilling Process using CT Measurement and Process Simulation. , 2015, , .		1
131	Accuracy of a 3D Vision System for Inspection of Complex Geometry. , 2002, , 569-576.		1
132	X-Ray Computed Tomography for Dimensional Metrology. Precision Manufacturing, 2019, , 537-583.	0.1	1
133	Special issue on metrology in manufacturingâ€”Editorial. Measurement Science and Technology, 2022, 33, 040101.	2.6	1
134	Comparative Metrological Characterization of Ti-6Al-4V Lattice Structures Produced by Laser-Powder Bed Fusion. , 2022, , 235-250.		1
135	Surface topography analysis for dimensional quality control of replication at the micrometre scale. Journal of Physics: Conference Series, 2011, 311, 012018.	0.4	0
136	X-Ray Computed Tomography for Dimensional Metrology. Precision Manufacturing, 2019, , 1-48.	0.1	0
137	Enhancing fiber length measurements performed by X-ray computed tomography for improving the production quality of composite materials. Procedia CIRP, 2019, 86, 151-155.	1.9	0