

Johan Hoefnagels

List of Publications by Year in descending order

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132
papers

2,873
citations

159525

30
h-index

197736

49
g-index

138
all docs

138
docs citations

138
times ranked

2050
citing authors

#	ARTICLE	IF	CITATIONS
1	Strain localization and damage in dual phase steels investigated by coupled in-situ deformation experiments and crystal plasticity simulations. <i>International Journal of Plasticity</i> , 2014, 63, 198-210.	4.1	412
2	Microstructural banding effects clarified through micrographic digital image correlation. <i>Scripta Materialia</i> , 2010, 62, 835-838.	2.6	158
3	Block and sub-block boundary strengthening in lath martensite. <i>Scripta Materialia</i> , 2016, 116, 117-121.	2.6	109
4	Experimental analysis of strain path dependent ductile damage mechanics and forming limits. <i>Mechanics of Materials</i> , 2009, 41, 1264-1276.	1.7	94
5	Identification of the continuum damage parameter: An experimental challenge in modeling damage evolution. <i>Acta Materialia</i> , 2012, 60, 3581-3589.	3.8	77
6	Interface debonding characterization by image correlation integrated with Double Cantilever Beam kinematics. <i>International Journal of Solids and Structures</i> , 2015, 55, 79-91.	1.3	64
7	Cavity ring down study of the densities and kinetics of Si and SiH in a remote Ar-H ₂ -SiH ₄ plasma. <i>Journal of Applied Physics</i> , 2001, 89, 2065-2073.	1.1	61
8	Ferrite slip system activation investigated by uniaxial micro-tensile tests and simulations. <i>Acta Materialia</i> , 2018, 146, 314-327.	3.8	61
9	Direct Stress-Strain Measurements from Bulged Membranes Using Topography Image Correlation. <i>Experimental Mechanics</i> , 2014, 54, 717-727.	1.1	57
10	On image gradients in digital image correlation. <i>International Journal for Numerical Methods in Engineering</i> , 2016, 105, 243-260.	1.5	57
11	Stretching-induced interconnect delamination in stretchable electronic circuits. <i>Journal Physics D: Applied Physics</i> , 2011, 44, 034008.	1.3	56
12	Plasticity of lath martensite by sliding of substructure boundaries. <i>Scripta Materialia</i> , 2016, 120, 37-40.	2.6	53
13	Time-resolved integrated digital image correlation. <i>International Journal for Numerical Methods in Engineering</i> , 2015, 103, 157-182.	1.5	52
14	Quasi-Ice Monolayer on Atomically Smooth Amorphous SiO ₂ at Room Temperature Observed with a High-Finesse Optical Resonator. <i>Physical Review Letters</i> , 2005, 95, 166104.	2.9	50
15	Cavity ring down detection of SiH ₃ in a remote SiH ₄ plasma and comparison with model calculations and mass spectrometry. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2001, 19, 467-476.	0.9	49
16	Crystal plasticity parameter identification with 3D measurements and Integrated Digital Image Correlation. <i>Acta Materialia</i> , 2016, 116, 321-331.	3.8	48
17	Retardation of plastic instability via damage-enabled microstrain delocalization. <i>Journal of Materials Science</i> , 2015, 50, 6882-6897.	1.7	45
18	Processing induced size effects in plastic yielding upon miniaturisation. <i>Journal of the Mechanics and Physics of Solids</i> , 2008, 56, 2687-2706.	2.3	44

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19	Copper–rubber interface delamination in stretchable electronics. <i>Scripta Materialia</i> , 2010, 63, 875-878.	2.6	42
20	Time-resolved cavity ringdown study of the Si and SiH ₃ surface reaction probability during plasma deposition of a-Si:H at different substrate temperatures. <i>Journal of Applied Physics</i> , 2004, 96, 4094-4106.	1.1	41
21	Incorporation of bioactive glass in calcium phosphate cement: Material characterization and <i>in vitro</i> degradation. <i>Journal of Biomedical Materials Research - Part A</i> , 2013, 101A, 2365-2373.	2.1	41
22	A consistent full-field integrated DIC framework for HR-EBSD. <i>Ultramicroscopy</i> , 2018, 191, 44-50.	0.8	39
23	Comparison of the identification performance of conventional FEM updating and integrated DIC. <i>International Journal for Numerical Methods in Engineering</i> , 2016, 106, 298-320.	1.5	38
24	Time-resolved cavity ring-down spectroscopic study of the gas phase and surface loss rates of Si and SiH ₃ plasma radicals. <i>Chemical Physics Letters</i> , 2002, 360, 189-193.	1.2	35
25	Absolute surface coverage measurement using a vibrational overtone. <i>Journal of Chemical Physics</i> , 2004, 120, 2879-2888.	1.2	35
26	One-step deposition of nano-scale, high-quality digital image correlation patterns for high-strain <i>in situ</i> multi-microscopy testing. <i>Strain</i> , 2019, 55, e12330.	1.4	34
27	Temperature dependence of the surface reactivity of SiH ₃ radicals and the surface silicon hydride composition during amorphous silicon growth. <i>Surface Science</i> , 2003, 547, L865-L870.	0.8	33
28	Correction of Scanning Electron Microscope Imaging Artifacts in a Novel Digital Image Correlation Framework. <i>Experimental Mechanics</i> , 2019, 59, 489-516.	1.1	33
29	Improvement of hydrogenated amorphous silicon properties with increasing contribution of SiH ₃ to film growth. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2001, 19, 1027-1029.	0.9	32
30	A critical assessment of indentation-based ductile damage quantification. <i>Acta Materialia</i> , 2009, 57, 4957-4966.	3.8	32
31	Demonstrating the potential of accurate absolute cross-grain stress and orientation correlation using electron backscatter diffraction. <i>Scripta Materialia</i> , 2019, 162, 266-271.	2.6	32
32	Correction of scan line shift artifacts in scanning electron microscopy: An extended digital image correlation framework. <i>Ultramicroscopy</i> , 2018, 187, 144-163.	0.8	29
33	Multi-Axial Deformation Setup for Microscopic Testing of Sheet Metal to Fracture. <i>Experimental Mechanics</i> , 2012, 52, 669-678.	1.1	28
34	Quantification of Three-Dimensional Surface Deformation using Global Digital Image Correlation. <i>Experimental Mechanics</i> , 2014, 54, 557-570.	1.1	28
35	Indentation-based damage quantification revisited. <i>Scripta Materialia</i> , 2010, 63, 316-319.	2.6	24
36	In-situ characterization of interface delamination by a new miniature mixed mode bending setup. <i>International Journal of Fracture</i> , 2009, 158, 183-195.	1.1	23

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37	Measuring time-dependent deformations in metallic MEMS. <i>Microelectronics Reliability</i> , 2011, 51, 1054-1059.	0.9	23
38	Microstructural study of the mechanical response of compacted graphite iron: An experimental and numerical approach. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 658, 439-449.	2.6	22
39	Martensite crystallography and chemistry in dual phase and fully martensitic steels. <i>Materials Characterization</i> , 2018, 139, 411-420.	1.9	22
40	Lath martensite plasticity enabled by apparent sliding of substructure boundaries. <i>Materials and Design</i> , 2019, 172, 107646.	3.3	22
41	Plasticity, localization, and damage in ferritic-pearlitic steel studied by nanoscale digital image correlation. <i>Scripta Materialia</i> , 2022, 208, 114327.	2.6	22
42	Low temperature inorganic chemical vapor deposition of Ti-Si-N diffusion barrier liners for gigascale copper interconnect applications. <i>Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 2000, 18, 2011.	1.6	21
43	A Global Digital Image Correlation Enhanced Full-Field Bulge Test Method. <i>Procedia IUTAM</i> , 2012, 4, 73-81.	1.2	21
44	An improved miniature mixed-mode delamination setup for in situ microscopic interface failure analyses. <i>Journal Physics D: Applied Physics</i> , 2011, 44, 034005.	1.3	20
45	Revisiting the martensite/ferrite interface damage initiation mechanism: The key role of substructure boundary sliding. <i>Acta Materialia</i> , 2021, 205, 116533.	3.8	20
46	Irreversible mixed mode interface delamination using a combined damage-plasticity cohesive zone enabling unloading. <i>International Journal of Fracture</i> , 2014, 185, 77-95.	1.1	19
47	Characterization of time-dependent anelastic microbeam bending mechanics. <i>Journal Physics D: Applied Physics</i> , 2014, 47, 355306.	1.3	18
48	Ultra-Stretchable Interconnects for High-Density Stretchable Electronics. <i>Micromachines</i> , 2017, 8, 277.	1.4	18
49	On-wafer time-dependent high reproducibility nano-force tensile testing. <i>Journal Physics D: Applied Physics</i> , 2014, 47, 495306.	1.3	17
50	Potential-based constitutive models for cohesive interfaces: Theory, implementation and examples. <i>Composites Part B: Engineering</i> , 2015, 68, 38-50.	5.9	16
51	Adaptive Isogeometric Digital Height Correlation: Application to Stretchable Electronics. <i>Strain</i> , 2016, 52, 336-354.	1.4	16
52	Substrate temperature dependence of the roughness evolution of HWCVD a-Si:H studied by real-time spectroscopic ellipsometry. <i>Thin Solid Films</i> , 2006, 501, 88-91.	0.8	15
53	On the use of adaptive refinement in isogeometric digital image correlation. <i>International Journal for Numerical Methods in Engineering</i> , 2015, 104, 944-962.	1.5	15
54	Multi-scale experimental analysis of rate dependent metal-elastomer interface mechanics. <i>Journal of the Mechanics and Physics of Solids</i> , 2015, 80, 26-36.	2.3	15

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55	A brittle-fracture methodology for three-dimensional visualization of ductile deformation micromechanisms. <i>Scripta Materialia</i> , 2009, 61, 20-23.	2.6	14
56	Bridging network properties to the effective hygro-expansivity of paper: experiments and modelling. <i>Philosophical Magazine</i> , 2015, 95, 3385-3401.	0.7	14
57	Recrystallization-mediated crack initiation in tungsten under simultaneous high-flux hydrogen plasma loads and high-cycle transient heating. <i>Nuclear Fusion</i> , 2021, 61, 046018.	1.6	14
58	Analysis of the dissipative mechanisms in metal-elastomer interfaces. <i>Engineering Fracture Mechanics</i> , 2015, 149, 412-424.	2.0	13
59	Mixed-mode cohesive zone parameters from integrated digital image correlation on micrographs only. <i>International Journal of Solids and Structures</i> , 2019, 156-157, 179-193.	1.3	13
60	Anisotropic hygro-expansion in hydrogel fibers owing to uniting 3D electrowriting and supramolecular polymer assembly. <i>European Polymer Journal</i> , 2020, 141, 110099.	2.6	13
61	Fracture behavior of tungsten-based composites exposed to steady-state/transient hydrogen plasma. <i>Nuclear Fusion</i> , 2020, 60, 046029.	1.6	13
62	Interlaboratory Study of Digital Volume Correlation Error Due to X-Ray Computed Tomography Equipment and Scan Parameters: an Update from the DVC Challenge. <i>Experimental Mechanics</i> , 2021, 61, 395-410.	1.1	13
63	On micromechanical parameter identification with integrated DIC and the role of accuracy in kinematic boundary conditions. <i>International Journal of Solids and Structures</i> , 2018, 146, 241-259.	1.3	12
64	Three mechanisms of hydrogen-induced dislocation pinning in tungsten. <i>Nuclear Fusion</i> , 2020, 60, 086015.	1.6	12
65	On the validity regime of the bulge equations. <i>Journal of Materials Research</i> , 2012, 27, 1245-1250.	1.2	11
66	A Uni-Axial Nano-Displacement Micro-Tensile Test of Individual Constituents from Bulk Material. <i>Experimental Mechanics</i> , 2017, 57, 1249-1263.	1.1	11
67	A bulge test based methodology for characterizing ultra-thin buckled membranes. <i>Thin Solid Films</i> , 2018, 660, 88-100.	0.8	11
68	Robust and precise identification of the hygro-expansion of single fibers: a full-field fiber topography correlation approach. <i>Cellulose</i> , 2020, 27, 6777-6792.	2.4	11
69	On a Proper Account of First- and Second-Order Size Effects in Crystal Plasticity. <i>Advanced Engineering Materials</i> , 2009, 11, 143-147.	1.6	10
70	Cool, Dry, Nano-scale DIC Patterning of Delicate, Heterogeneous, Non-planar Specimens by Micro-mist Nebulization. <i>Experimental Mechanics</i> , 2021, 61, 917-937.	1.1	10
71	Micron-scale experimental-numerical characterization of metal-polymer interface delamination in stretchable electronics interconnects. <i>International Journal of Solids and Structures</i> , 2020, 204-205, 52-64.	1.3	9
72	Experimental full-field analysis of size effects in miniaturized cellular elastomeric metamaterials. <i>Materials and Design</i> , 2020, 193, 108684.	3.3	9

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73	Full-field hygro-expansion characterization of single softwood and hardwood pulp fibers. <i>Nordic Pulp and Paper Research Journal</i> , 2021, 36, 61-74.	0.3	9
74	A practical approach for the separation of interfacial toughness and structural plasticity in a delamination growth experiment. <i>International Journal of Fracture</i> , 2013, 183, 1-18.	1.1	8
75	On the role of fibril mechanics in the work of separation of fibrillating interfaces. <i>Mechanics of Materials</i> , 2015, 88, 1-11.	1.7	8
76	Mechanical Shape Correlation: A novel integrated digital image correlation approach. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019, 345, 983-1006.	3.4	8
77	Material properties and growth process of microcrystalline silicon with growth rates in excess of 1 nm/s. <i>Materials Research Society Symposia Proceedings</i> , 2001, 664, 421.	0.1	7
78	An In Situ Experimental-Numerical Approach for Characterization and Prediction of Interface Delamination: Application to Cu/Fa-MCE Systems. <i>Advanced Engineering Materials</i> , 2012, 14, 1034-1041.	1.6	7
79	On the underlying micromechanisms in time-dependent anelasticity in Al-(1wt%)Cu thin films. <i>Acta Materialia</i> , 2017, 124, 47-58.	3.8	7
80	Image-based interface characterization with a restricted microscopic field of view. <i>International Journal of Solids and Structures</i> , 2018, 132-133, 218-231.	1.3	7
81	Simulation of interlaminar damage in mixed-mode bending tests using large deformation self-adaptive cohesive zones. <i>Engineering Fracture Mechanics</i> , 2013, 109, 387-402.	2.0	6
82	Anomalous precipitation hardening in Al-(1wt%)Cu thin films. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 722, 37-46.	2.6	6
83	Laser-induced toughening inhibits cut-edge failure in multi-phase steel. <i>Scripta Materialia</i> , 2020, 177, 79-85.	2.6	6
84	Enhanced Global Digital Image Correlation for Accurate Measurement of Microbeam Bending. <i>Advanced Structured Materials</i> , 2013, , 43-51.	0.3	6
85	Plasma-surface interaction and surface diffusion during silicon-based thin-film growth. <i>IEEE Transactions on Plasma Science</i> , 2005, 33, 234-235.	0.6	5
86	A Small-Scale, Contactless, Pure Bending Device for In-situ Testing. <i>Experimental Mechanics</i> , 2015, 55, 1511-1524.	1.1	5
87	Systematic and objective identification of the microstructure around damage directly from images. <i>Scripta Materialia</i> , 2016, 113, 101-105.	2.6	5
88	From Fibrils to Toughness: Multi-Scale Mechanics of Fibrillating Interfaces in Stretchable Electronics. <i>Materials</i> , 2018, 11, 231.	1.3	5
89	A Multi-loading, Climate-Controlled, Stationary ROI Device for In-Situ X-ray CT Hygro-Thermo-Mechanical Testing. <i>Experimental Mechanics</i> , 2019, 59, 295-308.	1.1	5
90	A discrete slip plane model for simulating heterogeneous plastic deformation in single crystals. <i>International Journal of Solids and Structures</i> , 2021, 228, 111094.	1.3	5

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91	Accurate Strain Field Measurement During Strip Rolling by Exploiting Recurring Material Motion with Time-Integrated Digital Image Correlation. <i>Experimental Mechanics</i> , 2022, 62, 603-625.	1.1	5
92	New ultrahigh vacuum setup and advanced diagnostic techniques for studying a-Si:H film growth by radical beams. <i>Materials Research Society Symposia Proceedings</i> , 2004, 808, 491.	0.1	4
93	Brittle Fracture-Based Experimental Methodology for Microstructure Analysis. <i>Applied Mechanics and Materials</i> , 0, 13-14, 133-139.	0.2	4
94	Mechanical Shape Correlation: A Novel Integrated Digital Image Correlation Approach. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2018, , 47-54.	0.3	4
95	Power deposition behavior of high-density transient hydrogen plasma on tungsten in Magnum-PSI. <i>Plasma Physics and Controlled Fusion</i> , 2021, 63, 085016.	0.9	4
96	The a-Si:H Growth Mechanism: Temperature Study of the SiH ₃ Surface Reactivity and the Surface Silicon Hydride Composition During Film Growth. <i>Materials Research Society Symposia Proceedings</i> , 2003, 762, 931.	0.1	3
97	First-Order Size Effects in the Mechanics of Miniaturized Components. <i>Applied Mechanics and Materials</i> , 0, 13-14, 183-192.	0.2	3
98	Experimental-Numerical Analysis of the Indentation-Based Damage Characterization Methodology. <i>Applied Mechanics and Materials</i> , 2008, 13-14, 151-160.	0.2	3
99	A Micropillar Compression Methodology for Ductile Damage Quantification. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2012, 43, 796-801.	1.1	3
100	A Platform for Mechano(-Electrical) Characterization of Free-Standing Micron-Sized Structures and Interconnects. <i>Micromachines</i> , 2018, 9, 39.	1.4	3
101	Influence of porosity and blistering on the thermal fatigue behavior of tungsten. <i>Nuclear Fusion</i> , 2022, 62, 076039.	1.6	3
102	An in-situ experimental-numerical approach for interface delamination characterization. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2011, , 569-576.	0.3	2
103	Electron Micrographic Digital Image Correlation: Method Optimization and Microstructural banding Case Study. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2013, , 71-77.	0.3	2
104	An In-Situ, Micro-Mechanical Setup with Accurate, Tri-Axial, Piezoelectric Force Sensing and Positioning. <i>Experimental Mechanics</i> , 2020, 60, 713-725.	1.1	2
105	Full-field identification of mixed-mode adhesion properties in a flexible, multi-layer microelectronic material system. <i>Engineering Fracture Mechanics</i> , 2020, 226, 106879.	2.0	2
106	A continuum consistent discrete particle method for continuum–discontinuum transitions and complex fracture problems. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022, 390, 114460.	3.4	2
107	Analysis of the three-dimensional delamination behavior of stretchable electronics applications. , 2009, , .		1
108	Studies into the Growth Mechanism of a-Si:H Using in situ Cavity Ring-Down Techniques. , 0, , 237-271.		1

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109	Miniature Marciniak Setup for in-situ SEM Observation of Damage Micro-mechanisms. EPJ Web of Conferences, 2010, 6, 16009.	0.1	1
110	Boundary Mechanics in Lath Martensite, Studied by Uni-Axial Micro-Tensile Tests. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 21-25.	0.3	1
111	Self-adaptive Isogeometric Global Digital Image Correlation and Digital Height Correlation. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 165-172.	0.3	1
112	Multi-axial electro-mechanical testing methodology for highly stretchable freestanding micron-sized structures. Journal of Micromechanics and Microengineering, 2020, 30, 055002.	1.5	1
113	Parameter identification of micron-sized freestanding stretchable electronic interconnects using integrated digital height correlation. Measurement Science and Technology, 2021, 32, 064001.	1.4	1
114	High-rate a-Si:H and $\text{Si}^{1/4}\text{C-Si:H}$ Film Growth Studied by Advanced Plasma and in situ Film Diagnostics. Materials Research Society Symposia Proceedings, 2002, 715, 2561.	0.1	0
115	Recent advances in evanescent-wave cavity ring-down spectroscopy. , 2005, , .		0
116	Novel in situ and real-time optical probes to detect (surface) defect states of a-Si:H. Materials Research Society Symposia Proceedings, 2005, 862, 1431.	0.1	0
117	An advanced experimental approach for detailed in-situ characterization of interface delamination. EPJ Web of Conferences, 2010, 6, 42011.	0.1	0
118	Applicability of the Bulge Equations in plane strain bulge experiments. EPJ Web of Conferences, 2010, 6, 40004.	0.1	0
119	Copper-Rubber Interface Delamination in Stretchable Electronics. EPJ Web of Conferences, 2010, 6, 42019.	0.1	0
120	Size-effects in time-dependent mechanics in metallic MEMS. EPJ Web of Conferences, 2010, 6, 06003.	0.1	0
121	Characterizing time-dependent mechanics in metallic MEMS. EPJ Web of Conferences, 2010, 6, 40002.	0.1	0
122	Full-Field Identification Methods: Comparison of FEM Updating and Integrated DIC. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 191-197.	0.3	0
123	Crystal Plasticity Parameter Identification by Integrated DIC on Microscopic Topographies. Conference Proceedings of the Society for Experimental Mechanics, 2018, , 47-49.	0.3	0
124	On the Boundary Conditions and Optimization Methods in Integrated Digital Image Correlation. Conference Proceedings of the Society for Experimental Mechanics, 2018, , 55-61.	0.3	0
125	Omnidirectional stretchability of freestanding interconnects for stretchable electronics. Smart Materials and Structures, 2020, 29, 045019.	1.8	0
126	Creep measurements in free-standing thin metal film micro-cantilever bending. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 167-171.	0.3	0

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127	A miniaturized contactless pure-bending device for in-situ SEM failure analysis. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 587-596.	0.3	0
128	Micromechanical Characterization of Ductile Damage in DP Steel. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 29-35.	0.3	0
129	A Statistical/Computational/Experimental Approach to Study the Microstructural Morphology of Damage. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 61-65.	0.3	0
130	Full-Field Identification of Interfaces in Microelectronic Devices. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 9-13.	0.3	0
131	Novel Image Correlation Based Techniques for Mechanical Analysis of MEMS. Conference Proceedings of the Society for Experimental Mechanics, 2018, , 19-28.	0.3	0
132	Advances in Delamination Modeling of Metal/Polymer Systems: Continuum Aspects. , 2018, , 83-128.		0