Mathias Wallin

List of Publications by Year in descending order

57 papers	1,473 citations	279798 23 h-index	345221 36 g-index
57 all docs	57 docs citations	57 times ranked	1401 citing authors

#	Article	IF	Citations
1	Strain mapping in free-standing heterostructured wurtzite InAs/InP nanowires. Nanotechnology, 2007, 18, 015504.	2.6	179
2	Simulation of discontinuous dynamic recrystallization in pure Cu using a probabilistic cellular automaton. Computational Materials Science, 2010, 49, 25-34.	3.0	117
3	Modeling of continuous dynamic recrystallization in commercial-purity aluminum. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2010, 527, 1126-1134.	5.6	85
4	Comparison of isotropic hardening and kinematic hardening in thermoplasticity. International Journal of Plasticity, 2005, 21, 1435-1460.	8.8	57
5	An anisotropic in-plane and out-of-plane elasto-plastic continuum model for paperboard. Composite Structures, 2015, 126, 184-195.	5.8	54
6	Optimal topologies derived from a phase-field method. Structural and Multidisciplinary Optimization, 2012, 45, 171-183.	3.5	48
7	Thermodynamic format and heat generation of isotropic hardening plasticity. Acta Mechanica, 2007, 194, 103-121.	2.1	44
8	Kinematic hardening in large strain plasticity. European Journal of Mechanics, A/Solids, 2003, 22, 341-356.	3.7	42
9	Deformation gradient based kinematic hardening model. International Journal of Plasticity, 2005, 21, 2025-2050.	8.8	42
10	Topology optimization based on finite strain plasticity. Structural and Multidisciplinary Optimization, 2016, 54, 783-793.	3.5	41
11	Distortional hardening plasticity model for paperboard. International Journal of Solids and Structures, 2014, 51, 2411-2423.	2.7	40
12	A Newtonâ€“Schur alternative to the consistent tangent approach in computational plasticity. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 1169-1177.	6.6	38
13	Stiffness optimization of non-linear elastic structures. Computer Methods in Applied Mechanics and Engineering, 2018, 330, 292-307.	6.6	37
14	Topology optimization of finite strain viscoplastic systems under transient loads. International Journal for Numerical Methods in Engineering, 2018, 114, 1351-1367.	2.8	34
15	Multi-scale plasticity modeling: Coupled discrete dislocation and continuum crystal plasticity. Journal of the Mechanics and Physics of Solids, 2008, 56, 3167-3180.	4.8	32
16	Consistent boundary conditions for PDE filter regularization in topology optimization. Structural and Multidisciplinary Optimization, 2020, 62, 1299-1311.	3.5	31
17	Hybrid discrete dislocation models for fatigue crack growth. International Journal of Fatigue, 2010, 32, 1511-1520.	5.7	29
18	Crack propagation in cortical bone is affected by the characteristics of the cement line: a parameter study using an XFEM interface damage model. Biomechanics and Modeling in Mechanobiology, 2019, 18, 1247-1261.	2.8	29

#	Article	IF	Citations
19	An interface damage model that captures crack propagation at the microscale in cortical bone using XFEM. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 90, 556-565.	3.1	29
20	Large strain phaseâ€fieldâ€based multiâ€material topology optimization. International Journal for Numerical Methods in Engineering, 2015, 104, 887-904.	2.8	26
21	Localized Deformation in Compression and Folding of Paperboard. Packaging Technology and Science, 2016, 29, 397-414.	2.8	26
22	Accurate stress updating algorithm based on constant strain rate assumption. Computer Methods in Applied Mechanics and Engineering, 2001, 190, 5583-5601.	6.6	23
23	Prediction of stored energy in polycrystalline materials during cyclic loading. International Journal of Solids and Structures, 2008, 45, 1570-1586.	2.7	23
24	Tunable phononic bandgap materials designed via topology optimization. Journal of the Mechanics and Physics of Solids, 2022, 163, 104849.	4.8	23
25	Thermomechanical response of non-local porous material. International Journal of Plasticity, 2006, 22, 2066-2090.	8.8	21
26	Multiscale eigenfrequency optimization of multimaterial lattice structures based on the asymptotic homogenization method. Structural and Multidisciplinary Optimization, 2020, 61, 983-998.	3.5	21
27	Age-related properties at the microscale affect crack propagation in cortical bone. Journal of Biomechanics, 2019, 95, 109326.	2.1	19
28	Eigenfrequency constrained topology optimization of finite strain hyperelastic structures. Structural and Multidisciplinary Optimization, 2020, 61, 2577-2594.	3.5	19
29	Nonlinear homogenization for topology optimization. Mechanics of Materials, 2020, 145, 103324.	3.2	19
30	Structural stability and artificial buckling modes in topology optimization. Structural and Multidisciplinary Optimization, 2021, 64, 1751-1763.	3.5	16
31	Boundary effects in a phase-field approach to topology optimization. Computer Methods in Applied Mechanics and Engineering, 2014, 278, 145-159.	6.6	15
32	Howard's algorithm in a phaseâ€field topology optimization approach. International Journal for Numerical Methods in Engineering, 2013, 94, 43-59.	2.8	14
33	Multi-scale Measurement of (Amorphous) Polymer Deformation: Simultaneous X-ray Scattering, Digital Image Correlation and In-situ Loading. Experimental Mechanics, 2014, 54, 1373-1383.	2.0	14
34	Efficient and accurate simulation of the packaging forming process. Packaging Technology and Science, 2018, 31, 557-566.	2.8	14
35	Topology optimization for designing periodic microstructures based on finite strain viscoplasticity. Structural and Multidisciplinary Optimization, 2020, 61, 2501-2521.	3.5	14
36	Differences in phase transformation in laser peened and shot peened 304 austenitic steel. International Journal of Mechanical Sciences, 2020, 176, 105535.	6.7	14

#	Article	IF	Citations
37	An alternative method for the integration of continuum damage evolution laws. Computational Mechanics, 2007, 41, 347-359.	4.0	12
38	Topology optimization utilizing inverse motion based form finding. Computer Methods in Applied Mechanics and Engineering, 2015, 289, 316-331.	6.6	12
39	The influence of microstructure on crack propagation in cortical bone at the mesoscale. Journal of Biomechanics, 2020, 112, 110020.	2.1	12
40	Modelling multi-scale deformation of amorphous glassy polymers with experimentally motivated evolution of the microstructure. Journal of the Mechanics and Physics of Solids, 2016, 96, 497-510.	4.8	11
41	Finite strain topology optimization based on phase-field regularization. Structural and Multidisciplinary Optimization, 2015, 51, 305-317.	3.5	10
42	Framework for deformation induced anisotropy in glassy polymers. Acta Mechanica, 2010, 211, 195-213.	2.1	9
43	Numerical integration of elasto-plasticity coupled to damage using a diagonal implicit Rungeâ€“Kutta integration scheme. International Journal of Damage Mechanics, 2013, 22, 68-94.	4.2	9
44	Modeling of the Long-Term Behavior of Glassy Polymers. Journal of Engineering Materials and Technology, Transactions of the ASME, 2013, 135, .	1.4	8
45	A rate-dependent continuum model for rapid converting of paperboard. Applied Mathematical Modelling, 2021, 99, 497-513.	4.2	8
46	Modeling of the Degradation of Elastic Properties due to the Evolution of Ductile Damage. International Journal of Damage Mechanics, 2008, 17, 149-172.	4.2	7
47	Modelling and experiments of glassy polymers using biaxial loading and digital image correlation. International Journal of Solids and Structures, 2016, 102-103, 100-111.	2.7	7
48	Measurement of multi-scale deformation of polycarbonate using X-ray scattering with in-situ loading and digital image correlation. Polymer, 2016, 82, 190-197.	3.8	7
49	Topology optimization of compliant mechanisms considering strain variance. Structural and Multidisciplinary Optimization, 2020, 62, 1457-1471.	3.5	7
50	Modelling of the Mechanical Response in 304 Austenitic Steel during Laser Shock Peening and Conventional Shot Peening. Procedia Manufacturing, 2020, 47, 450-457.	1.9	6
51	Topology optimization of bistable elastic structures â€" An application to logic gates. Computer Methods in Applied Mechanics and Engineering, 2021, 383, 113912.	6.6	5
52	Diagonally implicit Rungeâ€“Kutta (DIRK) integration applied to finite strain crystal plasticity modeling. Computational Mechanics, 2018, 62, 1429-1441.	4.0	4
53	Plastic work constrained elastoplastic topology optimization. International Journal for Numerical Methods in Engineering, 2021, 122, 4354-4377.	2.8	4
54	Cohesive zone modeling of crack propagation influenced by martensitic phase transformation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2018, 712, 564-573.	5.6	3

#	Article	IF	Citations
55	Nonlinear stiffness optimization with prescribed deformed geometry and loads. Structural and Multidisciplinary Optimization, 2022, 65, 1.	3.5	2
56	Topology optimization of thermo-hyperelastic structures utilizing inverse motion based form finding. Engineering Optimization, 2023, 55, 110-124.	2.6	1
57	A Constitutive Model for Ductile Damage Evolution. Key Engineering Materials, 0, 452-453, 621-624.	0.4	0