Matti Ristinmaa

List of Publications by Year
in descending order

118	2,793	159585	233421
papers	citations	30 h-index	45 g-index

123	123	123	1986
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	FE-formulation of a nonlocal plasticity theory. Computer Methods in Applied Mechanics and Engineering, 1996, 136, 127-144.	6.6	144
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	A constitutive model for the formation of martensite in austenitic steels under large strain plasticity. International Journal of Plasticity, 2007, 23, 1213-1239.	8.8	100
4	Behaviour of the extensible elastica solution. International Journal of Solids and Structures, 2001, 38, 8441-8457.	2.7	85
5	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
6	Continuum approach to high-cycle fatigue modeling. International Journal of Fatigue, 2008, 30, 996-1006.	5.7	77
7	Electrostriction in electro-viscoelastic polymers. Mechanics of Materials, 2012, 50, 9-21.	3.2	73
8	Phenomenological modeling of viscous electrostrictive polymers. International Journal of Non-Linear Mechanics, 2012, 47, 156-165.	2.6	68
9	Large strain elasto-plastic model of paper and corrugated board. International Journal of Solids and Structures, 2008, 45, 3334-3352.	2.7	58
10	Comparison of isotropic hardening and kinematic hardening in thermoplasticity. International Journal of Plasticity, 2005, 21, 1435-1460.	8.8	57
11	An anisotropic in-plane and out-of-plane elasto-plastic continuum model for paperboard. Composite Structures, 2015, 126, 184-195.	5.8	54
12	How accurately can subject-specific finite element models predict strains and strength of human femora? Investigation using full-field measurements. Journal of Biomechanics, 2016, 49, 802-806.	2.1	51
13	Optimal topologies derived from a phase-field method. Structural and Multidisciplinary Optimization, 2012, 45, 171-183.	3.5	48
14	Thermodynamic format and heat generation of isotropic hardening plasticity. Acta Mechanica, 2007, 194, 103-121.	2.1	44
15	Fundamental physical principles and cohesive zone models at finite displacements â€“ Limitations and possibilities. International Journal of Solids and Structures, 2015, 53, 70-79.	2.7	43
16	Rayleigh waves obtained by the indeterminate couple-stress theory. European Journal of Mechanics, A/Solids, 2000, 19, 929-947.	3.7	42
17	Kinematic hardening in large strain plasticity. European Journal of Mechanics, A/Solids, 2003, 22, 341-356.	3.7	42
18	Deformation gradient based kinematic hardening model. International Journal of Plasticity, 2005, 21, 2025-2050.	8.8	42

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19	Distortional hardening plasticity model for paperboard. International Journal of Solids and Structures, 2014, 51, 2411-2423.	2.7	40
20	Use of couple-stress theory in elasto-plasticity. Computer Methods in Applied Mechanics and Engineering, 1996, 136, 205-224.	6.6	38
21	Scanning 3DXRD Measurement of Grain Growth, Stress, and Formation of Cu6Sn5 around a Tin Whisker during Heat Treatment. Materials, 2019, 12, 446.	2.9	38
22	Consequences of dynamic yield surface in viscoplasticity. International Journal of Solids and Structures, 2000, 37, 4601-4622.	2.7	37
23	Full-Field Strain Measurement During Mechanical Testing of the Human Femur at Physiologically Relevant Strain Rates. Journal of Biomechanical Engineering, 2014, 136, .	1.3	37
24	Void growth in cyclic loaded porous plastic solid. Mechanics of Materials, 1997, 26, 227-245.	3.2	36
25	Exact integration of constitutive equations in elasto-plasticity. International Journal for Numerical Methods in Engineering, 1993, 36, 2525-2544.	2.8	34
26	Description of evolving anisotropy at large strains. Mechanics of Materials, 2007, 39, 267-282.	3.2	33
27	Microstructure evolution during dynamic discontinuous recrystallization in particle-containing Cu. Computational Materials Science, 2014, 84, 327-338.	3.0	33
28	Prediction of femoral strength using 3D finite element models reconstructed from DXA images: validation against experiments. Biomechanics and Modeling in Mechanobiology, 2017, 16, 989-1000.	2.8	33
29	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
30	Towards an orientation-distribution-based multi-scale approach for remodelling biological tissues. Computer Methods in Biomechanics and Biomedical Engineering, 2008, 11, 505-524.	1.6	32
31	Aspects of interface elasticity theory. Mathematics and Mechanics of Solids, 2018, 23, 1004-1024.	2.4	32
32	Theoretical Interpretation of Impulse Response Tests of Embedded Concrete Structures. Journal of Engineering Mechanics - ASCE, 2004, 130, 1062-1071.	2.9	31
33	Framework for non-coherent interface models at finite displacement jumps and finite strains. Journal of the Mechanics and Physics of Solids, 2016, 90, 124-141.	4.8	31
34	Modelling of Viscoelastic Dielectric Elastomers with Deformation Dependent Electric Properties. Procedia IUTAM, 2015, 12, 134-144.	1.2	30
35	Coupled diffusion-deformation multiphase field model for elastoplastic materials applied to the growth of Cu6Sn5. Acta Materialia, 2016, 108, 98-109.	7.9	30
36	Large strain phaseâ€fieldâ€based multiâ€material topology optimization. International Journal for Numerical Methods in Engineering, 2015, 104, 887-904.	2.8	26

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37	A combined crystal plasticity and graph-based vertex model of dynamic recrystallization at large deformations. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 045011.	2.0	26
38	Localized Deformation in Compression and Folding of Paperboard. Packaging Technology and Science, 2016, 29, 397-414.	2.8	26
39	Triphasic Model of Heat and Moisture Transport with Internal Mass Exchange in Paperboard. Transport in Porous Media, 2016, 112, 381-408.	2.6	26
40	Cyclic plasticity model using one yield surface only. International Journal of Plasticity, 1995, 11, 163-181.	8.8	25
41	Thermodynamically based fictitious crack/interface model for general normal and shear loading. International Journal of Solids and Structures, 2013, 50, 3555-3561.	2.7	24
42	Inverseâ€motionâ€based form finding for quasiâ€incompressible finite electroelasticity. International Journal for Numerical Methods in Engineering, 2013, 94, 554-572.	2.8	24
43	Prediction of the residual state in 304 austenitic steel after laser shock peening â€“ Effects of plastic deformation and martensitic phase transformation. International Journal of Mechanical Sciences, 2016, 111-112, 24-34.	6.7	24
44	Recrystallization and texture evolution during hot rolling of copper, studied by a multiscale model combining crystal plasticity and vertex models. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 075004.	2.0	24
45	Accurate stress updating algorithm based on constant strain rate assumption. Computer Methods in Applied Mechanics and Engineering, 2001, 190, 5583-5601.	6.6	23
46	Prediction of stored energy in polycrystalline materials during cyclic loading. International Journal of Solids and Structures, 2008, 45, 1570-1586.	2.7	23
47	Consistent elastoplastic cohesive zone model at finite deformations â€“ Variational formulation. International Journal of Solids and Structures, 2017, 106-107, 284-293.	2.7	23
48	Accelerating crystal plasticity simulations using GPU multiprocessors. International Journal for Numerical Methods in Engineering, 2014, 100, 111-135.	2.8	22
49	Thermomechanical response of non-local porous material. International Journal of Plasticity, 2006, 22, 2066-2090.	8.8	21
50	Thermo-mechanically coupled model of diffusionless phase transformation in austenitic steel. International Journal of Solids and Structures, 2010, 47, 1580-1591.	2.7	21
51	Crack tip transformation zones in austenitic stainless steel. Engineering Fracture Mechanics, 2012, 79, 266-280.	4.3	21
52	Evidence of 3D strain gradients associated with tin whisker growth. Scripta Materialia, 2018, 144, 1-4.	5.2	21
53	Enhanced multiaxial fatigue criterion that considers stress gradient effects. International Journal of Fatigue, 2018, 116, 128-139.	5.7	21
54	Multiscale eigenfrequency optimization of multimaterial lattice structures based on the asymptotic homogenization method. Structural and Multidisciplinary Optimization, 2020, 61, 983-998.	3.5	21

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55	On damage modeling of material interfaces: Numerical implementation and computational homogenization. Computer Methods in Applied Mechanics and Engineering, 2018, 337, 1-27.	6.6	20
56	Corners in plasticityâ€”Koiter's theory revisited. International Journal of Solids and Structures, 1996, 33, 3697-3721.	2.7	19
57	An electromechanically coupled micro-sphere framework: application to the finite element analysis of electrostrictive polymers. Smart Materials and Structures, 2012, 21, 094008.	3.5	19
58	A comparison of viscoplasticity formats and algorithms. International Journal for Numerical and Analytical Methods in Geomechanics, 1999, 4, 75-98.	0.8	18
59	PAPER PHYSICS. Analytical Prediction of Package Collapse Loads-Basic considerations. Nordic Pulp and Paper Research Journal, 2012, 27, 806-813.	0.7	18
60	Microstructure evolution influenced by dislocation density gradients modeled in a reactionâ€“diffusion system. Computational Materials Science, 2013, 67, 373-383.	3.0	17
61	Viscoplasticity based on an additive split of the conjugated forces. European Journal of Mechanics, A/Solids, 1998, 17, 207-235.	3.7	16
62	Î´-Hydride Habit Plane Determination in Î±-Zirconium at 298 K by Strain Energy Minimization Technique. Defect and Diffusion Forum, 0, 279, 105-110.	0.4	15
63	Boundary effects in a phase-field approach to topology optimization. Computer Methods in Applied Mechanics and Engineering, 2014, 278, 145-159.	6.6	15
64	Howard's algorithm in a phaseâ€field topology optimization approach. International Journal for Numerical Methods in Engineering, 2013, 94, 43-59.	2.8	14
65	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
66	Efficient and accurate simulation of the packaging forming process. Packaging Technology and Science, 2018, 31, 557-566.	2.8	14
67	Differences in phase transformation in laser peened and shot peened 304 austenitic steel. International Journal of Mechanical Sciences, 2020, 176, 105535.	6.7	14
68	Modelling of plasticity and damage in a polycrystalline microstructure. International Journal of Plasticity, 1995, 11, 949-970.	8.8	13
69	Mixture theory for a thermoelasto-plastic porous solid considering fluid flow and internal mass exchange. International Journal of Engineering Science, 2011, 49, 1185-1203.	5.0	13
70	An alternative method for the integration of continuum damage evolution laws. Computational Mechanics, 2007, 41, 347-359.	4.0	12
71	Topology optimization utilizing inverse motion based form finding. Computer Methods in Applied Mechanics and Engineering, 2015, 289, 316-331.	6.6	12
72	A non-affine electro-viscoelastic microsphere model for dielectric elastomers: Application to VHB 4910 based actuators. Journal of Intelligent Material Systems and Structures, 2017, 28, 627-639.	2.5	12

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73	Spatial representation of evolving anisotropy at large strains. International Journal of Solids and Structures, 2007, 44, 3514-3532.	2.7	11
74	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
75	An extended vertex and crystal plasticity framework for efficient multiscale modeling of polycrystalline materials. International Journal of Solids and Structures, 2017, 125, 150-160.	2.7	11
76	Modelling multiphase transport in deformable cellulose based materials exhibiting internal mass exchange and swelling. International Journal of Engineering Science, 2018, 128, 101-126.	5.0	11
77	Finite strain topology optimization based on phase-field regularization. Structural and Multidisciplinary Optimization, 2015, 51, 305-317.	3.5	10
78	Normalization of cohesive laws for quasi-brittle materials. Engineering Fracture Mechanics, 2017, 178, 333-345.	4.3	10
79	Long term evolution of microstructure and stress around tin whiskers investigated using scanning Laue microdiffraction. Acta Materialia, 2019, 168, 210-221.	7.9	10
80	A Physically Motivated Modification of the Strain Equivalence Approach. International Journal of Damage Mechanics, 2005, 14, 25-50.	4.2	9
81	Framework for deformation induced anisotropy in glassy polymers. Acta Mechanica, 2010, 211, 195-213.	2.1	9
82	Transient transport of heat, mass, and momentum in paperboard including dynamic phase change of water. International Journal of Engineering Science, 2016, 109, 54-72.	5.0	9
83	Model Describing Material-Dependent Deformation Behavior in High-Velocity Metal Forming Processes. Journal of Engineering Mechanics - ASCE, 2009, 135, 345-357.	2.9	8
84	On the modelling of electro-viscoelastic response of electrostrictive polyurethane elastomers. IOP Conference Series: Materials Science and Engineering, 2010, 10, 012101.	0.6	8
85	A continuum based macroscopic unified low-and high cycle fatigue model. MATEC Web of Conferences, 2019, 300, 16008.	0.2	8
86	A rate-dependent continuum model for rapid converting of paperboard. Applied Mathematical Modelling, 2021, 99, 497-513.	4.2	8
87	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
88	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
89	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
90	Experimental evaluation of normal and shear delamination in cellulose-based materials using a cohesive zone model. International Journal of Solids and Structures, 2022, 252, 111755.	2.7	7

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91	Micromechanical modeling of smart composites considering debonding of reinforcements. International Journal of Solids and Structures, 2011, 48, 3209-3216.	2.7	6
92	Response of moist paperboard during rapid compression and heating. Applied Mathematical Modelling, 2017, 42, 114-132.	4.2	6
93	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
94	Experimental and numerical analysis of adhesion failure in moist packaging material during excessive heating. International Journal of Heat and Mass Transfer, 2017, 108, 2566-2580.	4.8	5
95	Electro-viscoelastic response of an acrylic elastomer analysed by digital image correlation. Smart Materials and Structures, 2017, 26, 085021.	3.5	5
96	Multiphase transport model of swelling cellulose based materials with variable hydrophobicity. International Journal of Engineering Science, 2019, 141, 112-140.	5.0	5
97	Thermodynamic Formulation of Plastic Work Hardening Materials. Journal of Engineering Mechanics - ASCE, 1999, 125, 152-155.	2.9	4
98	Two different approaches to model evolving directional properties at finite deformations. Acta Mechanica, 2008, 199, 97-116.	2.1	4
99	Enhanced fictitious crack model accounting for material drawn into the cohesive zone: physically based crack closure criterion. International Journal of Fracture, 2016, 199, 199-211.	2.2	4
100	Towards control of viscous effects in acrylic-based actuator applications. Smart Materials and Structures, 2016, 25, 095034.	3.5	4
101	Diagonally implicit Rungeâ€“Kutta (DIRK) integration applied to finite strain crystal plasticity modeling. Computational Mechanics, 2018, 62, 1429-1441.	4.0	4
102	Structural Dynamics Teaching Example: A Linear Test Analysis Case Using Open Software. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 143-154.	0.5	4
103	Consistent stiffness matrix in FE calculations of elasto-plastic bodies. Computers and Structures, 1994, 53, 93-103.	4.4	3
104	Analytical prediction of package collapse â€“ consideration of windows in the package. Nordic Pulp and Paper Research Journal, 2014, 29, 717-724.	0.7	3
105	A Coupled Reactive-Transport Model for Electrokinetic Remediation. , 2016, , 251-278.		3
106	Coupled heat, mass and momentum transport in swelling cellulose based materials with application to retorting of paperboard packages. Applied Mathematical Modelling, 2021, 92, 848-883.	4.2	3
107	The influence of non-dissipative quantities in kinematic hardening plasticity. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2004, 218, 615-622.	2.1	2
108	Simulation model for anisotropic fibrous materials. Proceedings in Applied Mathematics and Mechanics, 2008, 8, 10399-10400.	0.2	2

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109	Î´-Hydride Habit Plane Determination in Î±-Zirconium at 298 K by Strain Energy Minimization Technique. Defect and Diffusion Forum, 0, , 105-110.	0.4	2
110	Nonlinear stiffness optimization with prescribed deformed geometry and loads. Structural and Multidisciplinary Optimization, 2022, 65, 1.	3.5	2
111	A full-range moisture sorption model for cellulose-based materials yielding consistent net isosteric heat of sorption. Drying Technology, 2023, 41, 61-76.	3.1	2
112	Topology optimization of thermo-hyperelastic structures utilizing inverse motion based form finding. Engineering Optimization, 2023, 55, 110-124.	2.6	1
113	The Influence of Non-Dissipative Quantities in Kinematic Hardening Plasticity. Key Engineering Materials, 2003, 233-236, 773-778.	0.4	0
114	Modeling of Crack Behavior in Austenitic Steel Influenced by Martensitic Phase Transformation. Key Engineering Materials, 0, 452-453, 637-640.	0.4	0
115	A Constitutive Model for Ductile Damage Evolution. Key Engineering Materials, 0, 452-453, 621-624.	0.4	0
116	Inverse-Motion-Based Modeling for Electromechanics With Application to Electrostrictive Polyurethane. , 2012, , .		0
117	A non-affine micro-sphere formulation for electroactive polymers. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 581-582.	0.2	0
118	Investigation of size effects due to material interfaces. Proceedings in Applied Mathematics and Mechanics, 2018, 18, e201800072.	0.2	0