Christian Linder

List of Publications by Year
in descending order

66 papers	5,043 citations	185998 28 h-index	149479 56 g-index
67 all docs	67 docs citations	67 times ranked	6850 citing authors

#	ARTICLE	IF	CITATIONS
1	A highly stretchable autonomous self-healing elastomer. Nature Chemistry, 2016, 8, 618-624.	6.6	1,133
2	A highly stretchable, transparent, and conductive polymer. Science Advances, 2017, 3, e1602076.	4.7	962
3	Highly stretchable polymer semiconductor films through the nanoconfinement effect. Science, 2017, 355, 59-64.	6.0	897
4	Finite elements with embedded strong discontinuities for the modeling of failure in solids. International Journal for Numerical Methods in Engineering, 2007, 72, 1391-1433.	1.5	202
5	Strain-insensitive intrinsically stretchable transistors and circuits. Nature Electronics, 2021, 4, 143-150.	13.1	170
6	Numerical simulation of dynamic fracture using finite elements with embedded discontinuities. International Journal of Fracture, 2009, 160, 119-141.	1.1	110
7	Microstructural origin of resistance–strain hysteresis in carbon nanotube thin film conductors. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 1986-1991.	3.3	107
8	A micromechanically motivated diffusion-based transient network model and its incorporation into finite rubber viscoelasticity. Journal of the Mechanics and Physics of Solids, 2011, 59, 2134-2156.	2.3	104
9	Finite elements with embedded branching. Finite Elements in Analysis and Design, 2009, 45, 280-293.	1.7	91
10	Phase field modeling of brittle fracture for enhanced assumed strain shells at large deformations: formulation and finite element implementation. Computational Mechanics, 2017, 59, 981-1001.	2.2	79
11	A variational framework to model diffusion induced large plastic deformation and phase field fracture during initial two-phase lithiation of silicon electrodes. Computer Methods in Applied Mechanics and Engineering, 2016, 312, 51-77.	3.4	75
12	New finite elements with embedded strong discontinuities in the finite deformation range. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 3138-3170.	3.4	73
13	Evaluation of convective heat transfer coefficient and specific heat capacity of a lithium-ion battery using infrared camera and lumped capacitance method. Journal of Power Sources, 2019, 412, 552-558.	4.0	61
14	A strong discontinuity approach on multiple levels to model solids at failure. Computer Methods in Applied Mechanics and Engineering, 2013, 253, 558-583.	3.4	57
15	A homogenization approach for nonwoven materials based on fiber undulations and reorientation. Journal of the Mechanics and Physics of Solids, 2014, 65, 12-34.	2.3	57
16	The maximal advance path constraint for the homogenization of materials with random network microstructure. Philosophical Magazine, 2012, 92, 2779-2808.	0.7	55
17	Area of lineal-path function for describing the pore microstructures of cement paste and their relations to the mechanical properties simulated from μ-CT microstructures. Cement and Concrete Composites, 2018, 89, 1-17.	4.6	51
18	Tri-layer wrinkling as a mechanism for anchoring center initiation in the developing cerebellum. Soft Matter, 2016, 12, 5613-5620.	1.2	48

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19	Computational aspects of growth-induced instabilities through eigenvalue analysis. Computational Mechanics, 2015, 56, 405-420.	2.2	47
20	Understanding geometric instabilities in thin films via a multi-layer model. Soft Matter, 2016, 12, 806-816.	1.2	46
21	New finite elements with embedded strong discontinuities for the modeling of failure in electromechanical coupled solids. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 141-161.	3.4	43
22	Effect of electric displacement saturation on the hysteretic behavior of ferroelectric ceramics and the initiation and propagation of cracks in piezoelectric ceramics. Journal of the Mechanics and Physics of Solids, 2012, 60, 882-903.	2.3	42
23	A marching cubes based failure surface propagation concept for three‑dimensional finite elements with non‑planar embedded strong discontinuities of higher‑order kinematics. International Journal for Numerical Methods in Engineering, 2013, 96, 339-372.	1.5	41
24	An algorithmic approach to multi-layer wrinkling. Extreme Mechanics Letters, 2016, 7, 10-17.	2.0	38
25	Diffusion-driven swelling-induced instabilities of hydrogels. Journal of the Mechanics and Physics of Solids, 2019, 125, 38-52.	2.3	34
26	Computational aspects of morphological instabilities using isogeometric analysis. Computer Methods in Applied Mechanics and Engineering, 2017, 316, 261-279.	3.4	30
27	A non-affine micro-macro approach to strain-crystallizing rubber-like materials. Journal of the Mechanics and Physics of Solids, 2018, 111, 67-99.	2.3	30
28	On the enhancement of low-order mixed finite element methods for the large deformation analysis of diffusion in solids. International Journal for Numerical Methods in Engineering, 2016, 106, 278-297.	1.5	29
29	Computational homogenization of nano‑materials accounting for size effects via surface elasticity. GAMM Mitteilungen, 2015, 38, 285-312.	2.7	27
30	All-electron Kohn‑Sham density functional theory on hierarchic finite element spaces. Journal of Computational Physics, 2013, 250, 644-664.	1.9	26
31	Three-dimensional finite elements with embedded strong discontinuities to model failure in electromechanical coupled materials. Computer Methods in Applied Mechanics and Engineering, 2014, 273, 143-160.	3.4	23
32	Modeling tumor growth with peridynamics. Biomechanics and Modeling in Mechanobiology, 2017, 16, 1141-1157.	1.4	23
33	A reaction-controlled diffusion model for the lithiation of silicon in lithium-ion batteries. Extreme Mechanics Letters, 2015, 4, 61-75.	2.0	22
34	Understanding the mechanical link between oriented cell division and cerebellar morphogenesis. Soft Matter, 2019, 15, 2204-2215.	1.2	22
35	Quantifying the relationship between cell division angle and morphogenesis through computational modeling. Journal of Theoretical Biology, 2017, 418, 1-7.	0.8	20
36	Mixed isogeometric analysis of strongly coupled diffusion in porous materials. International Journal for Numerical Methods in Engineering, 2018, 114, 28-46.	1.5	20

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37	A micromechanical model with strong discontinuities for failure in nonwovens at finite deformations. International Journal of Solids and Structures, 2015, 75-76, 247-259.	1.3	17
38	An Electro-chemo-thermo-mechanical Coupled Three-dimensional Computational Framework for Lithium-ion Batteries. Journal of the Electrochemical Society, 2020, 167, 160542.	1.3	13
39	On configurational compatibility and multiscale energy momentum tensors. Journal of the Mechanics and Physics of Solids, 2007, 55, 980-1000.	2.3	11
40	Understanding the relationship between cell death and tissue shrinkage via a stochastic agent-based model. Journal of Biomechanics, 2018, 73, 9-17.	0.9	10
41	Modeling mechanical inhomogeneities in small populations of proliferating monolayers and spheroids. Biomechanics and Modeling in Mechanobiology, 2018, 17, 727-743.	1.4	10
42	A Complex Variable Solution Based Analysis of Electric Displacement Saturation for a Cracked Piezoelectric Material. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	1.1	9
43	Three-dimensional explicit finite element formulation for shear localization with global tracking of embedded weak discontinuities. Computer Methods in Applied Mechanics and Engineering, 2019, 353, 416-447.	3.4	9
44	The reduced basis method in all-electron calculations with finite elements. Advances in Computational Mathematics, 2015, 41, 1035-1047.	0.8	8
45	A generalized infâ€"sup test for multi-field mixed-variational methods. Computer Methods in Applied Mechanics and Engineering, 2019, 357, 112497.	3.4	8
46	Interpreting stochastic agent-based models of cell death. Computer Methods in Applied Mechanics and Engineering, 2020, 360, 112700.	3.4	8
47	A Modified Electrochemical Model to Account for Mechanical Effects Due to Lithium Intercalation and External Pressure. Journal of the Electrochemical Society, 2021, 168, 020533.	1.3	8
48	Energy based fracture initiation criterion for strain-crystallizing rubber-like materials with pre-existing cracks. Journal of the Mechanics and Physics of Solids, 2021, 157, 104617.	2.3	8
49	Swelling-Induced Interface Crease Instabilities at Hydrogel Bilayers. Journal of Elasticity, 2021, 145, 31-47.	0.9	7
50	Special Issue on Phase Field Approaches to Fracture. Computer Methods in Applied Mechanics and Engineering, 2016, 312, 1-2.	3.4	5
51	Understanding thermal and mechanical effects on lithium plating in lithium-ion batteries. Journal of Power Sources, 2022, 541, 231632.	4.0	5
52	Modeling crack micro-branching using finite elements with embedded strong discontinuities. Proceedings in Applied Mathematics and Mechanics, 2010, 10, 681-684.	0.2	4
53	A unified finite strain gradient-enhanced micropolar continuum approach for modeling quasi-brittle failure of cohesive-frictional materials. International Journal of Solids and Structures, 2022, 254-255, 111841.	1.3	4
54	A strong discontinuity based adaptive refinement approach for the modeling of crack branching. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 171-172.	0.2	1

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55	Finite element solution of the Kohn-Sham equations. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 491-492.	0.2	1
56	Microstructural driven computational modeling of polymers. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 557-558.	0.2	1
57	Modeling biological materials with peridynamics. , 2021, , 249-273.		1
58	Recent Developments in the Formulation of Finite Elements with Embedded Strong Discontinuities. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2007, , 105-122.	0.1	0
59	New three-dimensional finite elements with embedded strong discontinuities to model solids at failure. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 133-134.	0.2	0
60	Modeling quasi-static crack growth with the embedded finite element method on multiple levels. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 135-136.	0.2	0
61	All-electron calculations with finite elements. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 353-354.	0.2	0
62	Homogenization of random elastic networks with non-affine kinematics. Proceedings in Applied Mathematics and Mechanics, 2012, 12, 417-418.	0.2	0
63	Modeling reorientation phenomena in nonwoven materials with random fiber network microstructure. Proceedings in Applied Mathematics and Mechanics, 2013, 13, 249-250.	0.2	0
64	3D finite elements to model electromechanical coupled solids at failure. Proceedings in Applied Mathematics and Mechanics, 2013, 13, 81-82.	0.2	0
65	Failure in anisotropic nonwoven materials at finite deformation. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 377-378.	0.2	0
66	A thermodynamically consistent and numerically stable formulation for the description of diffusion in polymeric gels. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 487-488.	0.2	0