

Swantje Bargmann

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

120 papers	1,741 citations	22 h-index	35 g-index
127 ext. papers	2,083 ext. citations	3.9 avg, IF	5.54 L-index

#	Paper	IF	Citations
120	Strain relief by controlled cracking in highly stretchable multi-layer composites. <i>Extreme Mechanics Letters</i> , 2022 , 101724	3.9	
119	A design method for metamaterials: 3D transversely isotropic lattice structures with tunable auxeticity. <i>Smart Materials and Structures</i> , 2022 , 31, 025011	3.4	0
118	A novel hybrid-honeycomb structure: Enhanced stiffness, tunable auxeticity and negative thermal expansion. <i>International Journal of Mechanical Sciences</i> , 2021 , 190, 106021	5.5	20
117	Anomalous compliance of interpenetrating-phase composite of Ti and Mg synthesized by liquid metal dealloying. <i>Scripta Materialia</i> , 2021 , 194, 113660	5.6	8
116	Tunable auxeticity and isotropic negative thermal expansion in three-dimensional lattice structures of cubic symmetry. <i>Extreme Mechanics Letters</i> , 2021 , 43, 101201	3.9	7
115	Skeletal muscle: Modeling the mechanical behavior by taking the hierarchical microstructure into account. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2021 , 122, 104670	4.1	1
114	Dynamic mechanical behaviour of suture interfaces as inspiration for architected hierarchical interlocking composites. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 157, 104620	5	3
113	Tunable tension/compression asymmetry and auxeticity in lattice structures by harnessing unilateral contact. <i>Composite Structures</i> , 2021 , 278, 114708	5.3	1
112	Phase contrast mediated switch of auxetic mechanism in composites of infilled re-entrant honeycomb microstructures. <i>Extreme Mechanics Letters</i> , 2020 , 35, 100641	3.9	19
111	Computationally modelling the mechanical behaviour of turtle shell sutures-A natural interlocking structure. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2020 , 110, 103973	4.1	3
110	Nature's design solutions in dental enamel: Uniting high strength and extreme damage resistance. <i>Acta Biomaterialia</i> , 2020 , 107, 1-24	10.8	23
109	Insights into fracture mechanisms in nanoporous gold and polymer impregnated nanoporous gold. <i>Extreme Mechanics Letters</i> , 2020 , 39, 100815	3.9	1
108	Nanoporous metal based composites: Giving polymers strength and making metals move. <i>Journal of the Mechanics and Physics of Solids</i> , 2020 , 137, 103848	5	4
107	Ultrastrong nanocomposites with interphases: Nonlocal deformation and damage behavior. <i>European Journal of Mechanics, A/Solids</i> , 2019 , 75, 93-108	3.7	5
106	Tunable auxeticity and elastomechanical symmetry in a class of very low density core-shell cubic crystals. <i>Acta Materialia</i> , 2019 , 177, 280-292	8.4	24
105	Effective elastic properties of 3D stochastic bicontinuous composites. <i>Mechanics of Materials</i> , 2019 , 137, 103098	3.3	8
104	Determining tensile yield stresses from Small Punch tests: A numerical-based scheme. <i>Materials and Design</i> , 2019 , 182, 107974	8.1	14

103	Gradient Crystal Plasticity: A Grain Boundary Model for Slip Transmission. <i>Materials</i> , 2019 , 12,	3.5	2
102	Modeling twinning-induced lattice reorientation and slip-in-twin deformation. <i>Journal of the Mechanics and Physics of Solids</i> , 2019 , 122, 315-339	5	5
101	Computational modeling of amorphous polymers: A Lagrangian logarithmic strain space formulation of a glassRubber constitutive model. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019 , 344, 887-909	5.7	2
100	Work hardening and recovery in fully lamellar TiAl: relative activity of deformation systems. <i>Philosophical Magazine</i> , 2019 , 99, 148-180	1.6	6
99	3D stochastic bicontinuous microstructures: Generation, topology and elasticity. <i>Acta Materialia</i> , 2018 , 149, 326-340	8.4	78
98	Modeling of surface effects in crystalline materials within the framework of gradient crystal plasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2018 , 112, 508-522	5	8
97	Generation of 3D representative volume elements for heterogeneous materials: A review. <i>Progress in Materials Science</i> , 2018 , 96, 322-384	42.2	165
96	Multiscale Experimental and Computational Investigation of Nature's Design Principle of Hierarchies in Dental Enamel. <i>Lecture Notes in Applied and Computational Mechanics</i> , 2018 , 273-291	0.3	1
95	Skeletonization-based beam finite element models for stochastic bicontinuous materials: Application to simulations of nanoporous gold. <i>Journal of Materials Research</i> , 2018 , 33, 3371-3382	2.5	9
94	Functionalisation of metal-polymer-nanocomposites: Chemoelectromechanical coupling and charge carrier transport. <i>Extreme Mechanics Letters</i> , 2018 , 21, 57-64	3.9	3
93	Finite element simulation of pole vaulting. <i>Sports Engineering</i> , 2018 , 21, 85-93	1.4	3
92	Automatic generation and discretization of fully periodic representative volume elements of plain woven composites. <i>Journal of Composite Materials</i> , 2018 , 52, 4061-4073	2.7	2
91	A Class of Rate-Independent Lower-Order Gradient Plasticity Theories: Implementation and Application to Disc Torsion Problem. <i>Materials</i> , 2018 , 11,	3.5	2
90	Interface elasticity effects in polymer-filled nanoporous metals. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 99, 163-177	5	10
89	Size affected dislocation activity in crystals: Advanced surface and grain boundary conditions. <i>Extreme Mechanics Letters</i> , 2017 , 13, 36-41	3.9	17
88	Effect of Surface Elasticity on the Elastic Response of Nanoporous Gold. <i>Journal of Nanomechanics & Micromechanics</i> , 2017 , 7, 04017013		7
87	Elastic behaviour at the nanoscale of innovative composites of nanoporous gold and polymer. <i>Extreme Mechanics Letters</i> , 2017 , 17, 16-23	3.9	17
86	Assessing Colony Boundary Strengthening of Fully Lamellar TiAl Alloys via Micromechanical Modeling. <i>Materials</i> , 2017 , 10,	3.5	12

85	Closed-form formulas for the effective properties of random particulate nanocomposites with complete Gurtin-Murdoch model of material surfaces. <i>Continuum Mechanics and Thermodynamics</i> , 2017 , 29, 77-96	3.5	17
84	Surface excess elasticity of gold: Ab initio coefficients and impact on the effective elastic response of nanowires. <i>Acta Materialia</i> , 2017 , 124, 468-477	8.4	29
83	Implementation and application of a gradient enhanced crystal plasticity model 2017 ,		1
82	Multiscale simulation of fracture of coated silica nanoparticles reinforced composites. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2017 , 17, 257-258	0.2	1
81	Fully periodic RVEs for technological relevant composites: not worth the effort!. <i>Journal of Mechanics of Materials and Structures</i> , 2017 , 12, 471-484	1.2	14
80	The Role of Geometrically Necessary Dislocations in Cantilever Beam Bending Experiments of Single Crystals. <i>Materials</i> , 2017 , 10,	3.5	11
79	Experimental and Computational Study of Ductile Fracture in Small Punch Tests. <i>Materials</i> , 2017 , 10,	3.5	5
78	Elastic and plastic Poisson's ratios of nanoporous gold. <i>Scripta Materialia</i> , 2016 , 110, 65-69	5.6	54
77	The effect of yield surface curvature change by cross hardening on forming limit diagrams of sheets. <i>International Journal of Mechanical Sciences</i> , 2016 , 117, 53-66	5.5	7
76	Thermoelastic modelling of the skin at finite deformations. <i>Journal of Thermal Biology</i> , 2016 , 62, 201-209	2.9	21
75	Continuum damage modeling and simulation of hierarchical dental enamel. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2016 , 24, 045014	2	16
74	Anisotropic constitutive model incorporating multiple damage mechanisms for multiscale simulation of dental enamel. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016 , 62, 515-533	4.1	10
73	Structure-property relationships in nanoporous metallic glasses. <i>Acta Materialia</i> , 2016 , 106, 199-207	8.4	77
72	Finite element damage analysis of an underwater glider-ship collision. <i>Journal of Marine Science and Technology</i> , 2016 , 21, 261-270	1.7	5
71	Materials based design of structures: Computational modeling of the mechanical behavior of gold-polymer nanocomposites. <i>Mechanics of Materials</i> , 2016 , 94, 53-65	3.3	11
70	Thermomechanical formulation of ductile damage coupled to nonlinear isotropic hardening and multiplicative viscoplasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2016 , 91, 334-358	5	3
69	A Thermomechanically Consistent Constitutive Theory for Modeling Micro-Void and/or Micro-Crack Driven Failure in Metals at Finite Strains. <i>International Journal of Applied Mechanics</i> , 2016 , 08, 1650009	2.4	13
68	Variants of Lemaitre's damage model and their use in formability prediction of metallic materials. <i>Mechanics of Materials</i> , 2016 , 92, 58-79	3.3	11

67	A framework for geometrically non-linear gradient extended crystal plasticity coupled to heat conduction and damage. <i>Multiscale and Multiphysics Mechanics</i> , 2016 , 1, 171-188		
66	Fourth-order strain-gradient phase mixture model for nanocrystalline fcc materials. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2016 , 24, 085016	2	3
65	Gradient enhanced physically based plasticity: Implementation and application to a problem pertaining size effect 2016 ,		2
64	Lurie solution for spherical particle and spring layer model of interphases: Its application in analysis of effective properties of composites. <i>Mechanics of Materials</i> , 2016 , 96, 39-52	3.3	17
63	Modeling of fracture in small punch tests for small- and large-scale yielding conditions at various temperatures. <i>International Journal of Mechanical Sciences</i> , 2016 , 106, 266-285	5.5	15
62	Automatic three-dimensional geometry and mesh generation of periodic representative volume elements for matrix-inclusion composites. <i>Advances in Engineering Software</i> , 2016 , 99, 177-188	3.6	32
61	Energy-equivalent inhomogeneity approach to analysis of effective properties of nanomaterials with stochastic structure. <i>International Journal of Solids and Structures</i> , 2015 , 59, 183-197	3.1	23
60	Characterization of the Microstructure Evolution in IF-Steel and AA6016 during Plane-Strain Tension and Simple Shear. <i>Materials</i> , 2015 , 8, 285-301	3.5	4
59	A continuum mechanical model for the description of solvent induced swelling in polymeric glasses: Thermomechanics coupled with diffusion. <i>European Journal of Mechanics, A/Solids</i> , 2015 , 53, 10-18	3.7	8
58	A directional modification of the Levkovitch-Bvendsen cross-hardening model based on the stress deviator. <i>Mechanics of Materials</i> , 2015 , 86, 21-30	3.3	2
57	A computational investigation of a model of single-crystal gradient thermoplasticity that accounts for the stored energy of cold work and thermal annealing. <i>Computational Mechanics</i> , 2015 , 55, 755-769	4	8
56	Thermomechanical modelling of polysynthetically twinned TiAl crystals. <i>Philosophical Magazine</i> , 2015 , 95, 2607-2626	1.6	9
55	Lode Parameter Dependence and Quasi-Unilateral Effects in Continuum Damage Mechanics: Models and Applications in Metal Forming. <i>Key Engineering Materials</i> , 2015 , 651-653, 187-192	0.4	
54	Damage modeling of small-scale experiments on dental enamel with hierarchical microstructure. <i>Acta Biomaterialia</i> , 2015 , 15, 244-53	10.8	26
53	The plastic yield and flow behavior in metallic glasses. <i>Applied Physics Letters</i> , 2015 , 106, 051903	3.4	6
52	Continuum mechanical modeling of laser-pulsed heating in polycrystals: A multi-physics problem of coupling diffusion, mechanics, and thermal waves. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2014 , 94, 487-498	1	11
51	Computational modelling of submicron-sized metallic glasses. <i>Philosophical Magazine</i> , 2014 , 94, 1-19	1.6	18
50	Influence of interfaces on effective properties of nanomaterials with stochastically distributed spherical inclusions. <i>International Journal of Solids and Structures</i> , 2014 , 51, 954-966	3.1	16

49	Property optimization of porous metallic glasses via structural design. <i>Materials Letters</i> , 2014 , 134, 306-310		14
48	Simulation of non-classical diffusion in polymers. <i>Heat and Mass Transfer</i> , 2014 , 50, 1543-1552	2.2	8
47	Computational modeling of intrinsically induced strain gradients during compression of c-axis-oriented magnesium single crystal. <i>Acta Materialia</i> , 2014 , 71, 206-219	8.4	17
46	Effective bulk moduli of materials containing stochastically distributed nano-inhomogeneities with surface stresses. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2014 , 14, 537-538	0.2	
45	Non-local modeling of size effects in amorphous metals. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2014 , 14, 529-530	0.2	
44	Application of a Gradient Crystal Plasticity Model to Numerical Analysis of Metal Part of Nanoporous Metal [Polymer Composites. <i>Procedia Engineering</i> , 2014 , 81, 1348-1353		
43	Materials by design: An experimental and computational investigation on the microanatomy arrangement of porous metallic glasses. <i>Acta Materialia</i> , 2014 , 77, 411-422	8.4	32
42	Dual-mixed finite element analysis of crystalline sub-micron gold. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2014 , 14, 329-330	0.2	
41	Inherent and induced anisotropic finite visco-plasticity with applications to the forming of DC06 sheets. <i>International Journal of Mechanical Sciences</i> , 2014 , 89, 101-111	5.5	6
40	A computational study of a model of single-crystal strain-gradient viscoplasticity with an interactive hardening relation. <i>International Journal of Solids and Structures</i> , 2014 , 51, 2754-2764	3.1	27
39	A Revised Exposition of the Green-Naghdi Theory of Heat Propagation. <i>Journal of Elasticity</i> , 2014 , 114, 143-154	1.5	11
38	Microscopic temperature field prediction during adiabatic loading using gradient extended crystal plasticity. <i>International Journal of Solids and Structures</i> , 2013 , 50, 899-906	3.1	18
37	Non-linear deformation properties of materials with stochastically distributed anisotropic inclusions. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2013 , 13, 253-254	0.2	1
36	Experimental characterization of microstructure development during loading path changes in bcc sheet steels. <i>Journal of Materials Science</i> , 2013 , 48, 674-689	4.3	13
35	Towards bio-inspired engineering materials: Modeling and simulation of the mechanical behavior of hierarchical bovine dental structure. <i>Computational Materials Science</i> , 2013 , 79, 390-401	3.2	25
34	Modeling and simulation of size effects in metallic glasses with a nonlocal continuum mechanics theory. <i>Journal of the Mechanical Behavior of Materials</i> , 2013 , 22, 51-66	1.9	6
33	On energy and entropy influxes in the Green-Naghdi Type III theory of heat conduction. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2013 , 469, 20120705	2.4	10
32	Remarks on the Green-Naghdi theory of heat conduction. <i>Journal of Non-Equilibrium Thermodynamics</i> , 2013 , 38,	3.8	9

31	Analysis and comparison of two finite element algorithms for dislocation density based crystal plasticity. <i>GAMM Mitteilungen</i> , 2013 , 36, 219-238	1.8	5
30	Determination of average dislocation densities in metals by analysis of digitally processed transmission-electron microscopy images. <i>Materialwissenschaft Und Werkstofftechnik</i> , 2013 , 44, 541-546 ^{0.9}		
29	Crashworthiness of Magnesium Sheet Structures. <i>Materials Science Forum</i> , 2013 , 765, 590-594	0.4	9
28	A deformational and configurational framework for geometrically non-linear continuum thermomechanics coupled to diffusion. <i>International Journal of Non-Linear Mechanics</i> , 2012 , 47, 215-227 ^{2.8}		18
27	Micro-to-macro transitions for heterogeneous material layers accounting for in-plane stretch. <i>Journal of the Mechanics and Physics of Solids</i> , 2012 , 60, 1221-1239	5	44
26	Computational modeling of flow-induced anisotropy of polar ice for the EDML deep drilling site, Antarctica: The effect of rotation recrystallization and grain boundary migration. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2012 , 36, 892-917	4	7
25	Two model formulations for gradient crystal plasticity. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2012 , 12, 815-818	0.2	
24	Two models for gradient inelasticity based on non-convex energy. <i>Computational Materials Science</i> , 2012 , 64, 96-100	3.2	15
23	THEORETICAL AND ALGORITHMIC FORMULATION OF MODELS FOR ENERGETIC GND-BASED HARDENING IN SINGLE CRYSTALS. <i>International Journal for Multiscale Computational Engineering</i> , 2012 , 10, 551-565	2.4	3
22	Geometrically nonlinear continuum thermomechanics with surface energies coupled to diffusion. <i>Journal of the Mechanics and Physics of Solids</i> , 2011 , 59, 2116-2133	5	42
21	An extended crystal plasticity model for latent hardening in polycrystals. <i>Computational Mechanics</i> , 2011 , 48, 631-645	4	40
20	Influence of grain boundary conditions on modeling of size-dependence in polycrystals. <i>Acta Mechanica</i> , 2011 , 218, 103-113	2.1	50
19	Phenomenological modeling of anisotropy induced by evolution of the dislocation structure on the macroscopic and microscopic scale. <i>International Journal of Material Forming</i> , 2011 , 4, 141-154	2	17
18	Geometrically Nonlinear Continuum Thermomechanics with Surface Energies Coupled to Diffusion. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2011 , 11, 483-484	0.2	1
17	Modeling and numerical simulation of multiscale behavior in polycrystals via extended crystal plasticity. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2011 , 11, 531-532	0.2	
16	Computational mechanics-based modeling of size-dependent hardening in polycrystals. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2011 , 11, 943-946	0.2	
15	Modeling of polycrystals using a gradient crystal plasticity theory that includes dissipative micro-stresses. <i>European Journal of Mechanics, A/Solids</i> , 2011 , 30, 719-730	3.7	11
14	A second-sound based, hyperbolic SIR model for high-diffusivity spread. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2011 , 375, 898-907	2.3	5

13	Models of Solvent Penetration in Glassy Polymers With an Emphasis on Case II Diffusion. A Comparative Review. <i>Applied Mechanics Reviews</i> , 2011 , 64,	8.6	16
12	Geometrically Nonlinear Continuum Thermomechanics Coupled to Diffusion: A Framework for Case II Diffusion. <i>Lecture Notes in Applied and Computational Mechanics</i> , 2011 , 89-107	0.3	5
11	Modeling of polycrystals with gradient crystal plasticity: A comparison of strategies. <i>Philosophical Magazine</i> , 2010 , 90, 1263-1288	1.6	58
10	On the continuum thermodynamic rate variational formulation of models for extended crystal plasticity at large deformation. <i>Journal of the Mechanics and Physics of Solids</i> , 2010 , 58, 1253-1271	5	64
9	Material Forces in Non-Classical Thermo-Hyperelasticity. <i>Journal of Thermal Stresses</i> , 2009 , 32, 361-393	2.2	5
8	On Configurational Forces within Green-Naghdi Thermo-Hyperelasticity. <i>IUTAM Symposium on Cellular, Molecular and Tissue Mechanics</i> , 2009 , 205-214	0.3	1
7	On the propagation of second-sound in linear and nonlinear media: Results from Green-Naghdi theory. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2008 , 372, 4418-4424	2.3	27
6	An incremental variational formulation of dissipative and non-dissipative coupled thermoelasticity for solids. <i>Heat and Mass Transfer</i> , 2008 , 45, 107-116	2.2	12
5	Modeling and simulation of first and second sound in solids. <i>International Journal of Solids and Structures</i> , 2008 , 45, 6067-6073	3.1	24
4	Classical results for a non-classical theory: remarks on thermodynamic relations in Green-Naghdi thermo-hyperelasticity. <i>Continuum Mechanics and Thermodynamics</i> , 2007 , 19, 59-66	3.5	22
3	Modeling of non-classical thermoelasticity. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2006 , 6, 425-426	0.2	
2	Theoretical and computational aspects of non-classical thermoelasticity. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2006 , 196, 516-527	5.7	31
1	Structural optimization by simultaneous equilibration of spatial and material forces. <i>Communications in Numerical Methods in Engineering</i> , 2005 , 21, 433-442		11