Nikolaos Bouklas

List of Publications by Year
in descending order

36 papers	1,078 citations	516561 16 h-index	414303 32 g-index
37 all docs	37 docs citations	37 times ranked	890 citing authors

#	Article	IF	Citations
1	Understanding the inelastic response of collagen fibrils: A viscoelastic-plastic constitutive model. Acta Biomaterialia, 2023, 163, 78-90.	4.1	3
2	Tissue Engineering with Mechanically Induced Solidâ€Fluid Transitions. Advanced Materials, 2022, 34, e2106149.	11.1	3
3	Local approximate Gaussian process regression for data-driven constitutive models: development and comparison with neural networks. Computer Methods in Applied Mechanics and Engineering, 2022, 388, 114217.	3.4	32
4	The mixed Deep Energy Method for resolving concentration features in finite strain hyperelasticity. Journal of Computational Physics, 2022, 451, 110839.	1.9	46
5	Non-intrusive reduced order modeling of natural convection in porous media using convolutional autoencoders: Comparison with linear subspace techniques. Advances in Water Resources, 2022, 160, 104098.	1.7	32
6	Interval and fuzzy physics-informed neural networks for uncertain fields. Probabilistic Engineering Mechanics, 2022, 68, 103240.	1.3	11
7	On physics-informed data-driven isotropic and anisotropic constitutive models through probabilistic machine learning and space-filling sampling. Computer Methods in Applied Mechanics and Engineering, 2022, 394, 114915.	3.4	44
8	An adhesive and resilient hydrogel for the sealing and treatment of gastric perforation. Bioactive Materials, 2022, 14, 52-60.	8.6	20
9	Machine-learning convex and texture-dependent macroscopic yield from crystal plasticity simulations. Materialia, 2022, 23, 101446.	1.3	19
10	Stabilized formulation for phaseâ€field fracture in nearly incompressible hyperelasticity. International Journal for Numerical Methods in Engineering, 2022, 123, 4655-4673.	1.5	7
11	Simple synthesis of soft, tough, and cytocompatible biohybrid composites. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	4
12	A framework for upscaling and modelling fluid flow for discrete fractures using conditional generative adversarial networks. Advances in Water Resources, 2022, 166, 104264.	1.7	3
13	A model for 3D deformation and reconstruction of contractile microtissues. Soft Matter, 2021, 17, 10198-10209.	1.2	7
14	X-ray Nanoimaging of Crystal Defects in Single Grains of Solid-State Electrolyte Li_{7â€“3<i>x</i>}Al_{<i>x</i>}La₃Zr₂O₁₂. Nano Letters, 2021, 21, 4570-4576.	4.5	13
15	Data-driven reduced order modeling of poroelasticity of heterogeneous media based on a discontinuous Galerkin approximation. GEM - International Journal on Geomathematics, 2021, 12, 1.	0.7	9
16	Engineered Extracellular Matrices with Integrated Wireless Microactuators to Study Mechanobiology. Advanced Materials, 2021, 33, e2102641.	11.1	19
17	Affine and non-affine microsphere models for chain scission in polydisperse elastomer networks. Mechanics of Materials, 2021, 160, 103857.	1.7	13
18	Model-data-driven constitutive responses: Application to a multiscale computational framework. International Journal of Engineering Science, 2021, 167, 103522.	2.7	32

#	Article	IF	Citations
19	Rate-Dependent Damage Mechanics of Polymer Networks with Reversible Bonds. Macromolecules, 2021, 54, 10801-10813.	2.2	20
20	A framework for data-driven solution and parameter estimation of PDEs using conditional generative adversarial networks. Nature Computational Science, 2021, 1, 819-829.	3.8	44
21	A variational phase-field model for brittle fracture in polydisperse elastomer networks. International Journal of Solids and Structures, 2020, 182-183, 193-204.	1.3	43
22	Effect of elastocapillarity on the swelling kinetics of hydrogels. Journal of the Mechanics and Physics of Solids, 2020, 145, 104132.	2.3	14
23	An Adhesive Hydrogel with â€œLoadâ€Sharingâ€• Effect as Tissue Bandages for Drug and Cell Delivery. Advanced Materials, 2020, 32, e2001628.	11.1	128
24	Coupled flow and deformation fields due to a line load on a poroelastic half space: effect of surface stress and surface bending. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20190761.	1.0	6
25	Poroelastic Effects on the Time- and Rate-Dependent Fracture of Polymer Gels. Journal of Applied Mechanics, Transactions ASME, 2020, 87, .	1.1	12
26	Surface and Bulk Stresses Drive Morphological Changes in Fibrous Microtissues. Biophysical Journal, 2019, 117, 975-986.	0.2	14
27	Engineering transferrable microvascular meshes for subcutaneous islet transplantation. Nature Communications, 2019, 10, 4602.	5.8	63
28	A model for cellular mechanotransduction and contractility at finite strain. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 2047-2047.	0.9	0
29	A model for cellular mechanotransduction and contractility at finite strain. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 1754-1770.	0.9	3
30	A Linear Poroelastic Analysis of Time-Dependent Crack-Tip Fields in Polymer Gels. Journal of Applied Mechanics, Transactions ASME, 2018, 85, .	1.1	12
31	Onset of swell-induced surface instability of hydrogel layers with depth-wise graded material properties. Mechanics of Materials, 2017, 105, 138-147.	1.7	17
32	Effect of Solvent Diffusion on Crack-Tip Fields and Driving Force for Fracture of Hydrogels. Journal of Applied Mechanics, Transactions ASME, 2015, 82, .	1.1	55
33	A nonlinear, transient finite element method for coupled solvent diffusion and large deformation of hydrogels. Journal of the Mechanics and Physics of Solids, 2015, 79, 21-43.	2.3	102
34	Swell-induced surface instability of hydrogel layers with material properties varying in thickness direction. International Journal of Solids and Structures, 2013, 50, 578-587.	1.3	73
35	Swelling kinetics of polymer gels: comparison of linear and nonlinear theories. Soft Matter, 2012, 8, 8194.	1.2	146
36	The Role of Buckling Instabilities in the Global and Local Mechanical Response in Porous Collagen Scaffolds. Experimental Mechanics, 0, , .	1.1	2