

Christian Franck

List of Publications by Year in descending order

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Version: 2024-02-01

57
papers

2,397
citations

257450

24
h-index

214800

47
g-index

61
all docs

61
docs citations

61
times ranked

2732
citing authors

#	ARTICLE	IF	CITATIONS
1	Head Impact Modeling to Support a Rotational Combat Helmet Drop Test. <i>Military Medicine</i> , 2023, 188, e745-e752.	0.8	5
2	Mechanical characterization of agarose hydrogels and their inherent dynamic instabilities at ballistic to ultra-high strain-rates via inertial microcavitation. <i>Extreme Mechanics Letters</i> , 2022, 51, 101572.	4.1	14
3	Probing Inertial Cavitation Damage in Viscoelastic Hydrogels Using Dynamic Bubble Pairs. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2022, , 47-52.	0.5	2
4	Large-deformation constitutive modeling of viscoelastic foams: Application to a closed-cell foam material. <i>Journal of the Mechanics and Physics of Solids</i> , 2022, 161, 104807.	4.8	8
5	The Penetration Dynamics of a Violent Cavitation Bubble Through a Hydrogelâ€“Water Interface. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2022, , 65-71.	0.5	5
6	Particle-Assisted Laser-Induced Inertial Cavitation for High Strain-Rate Soft Material Characterization. <i>Experimental Mechanics</i> , 2022, 62, 1037-1050.	2.0	1
7	SpatioTemporally Adaptive Quadtree Mesh (STAQ) Digital Image Correlation for Resolving Large Deformations Around Complex Geometries and Discontinuities. <i>Experimental Mechanics</i> , 2022, 62, 1191-1215.	2.0	6
8	A quantitative relationship between rotational head kinematics and brain tissue strain from a 2-D parametric finite element analysis. <i>Brain Multiphysics</i> , 2021, 2, 100024.	2.3	26
9	Traction Force Microscopy of Human Neutrophils During Critical Illness. <i>FASEB Journal</i> , 2021, 35, .	0.5	0
10	Breast tumor stiffness instructs bone metastasis via maintenance of mechanical conditioning. <i>Cell Reports</i> , 2021, 35, 109293.	6.4	29
11	Smart Digital Image Correlation Patterns via 3D Printing. <i>Experimental Mechanics</i> , 2021, 61, 1181-1191.	2.0	10
12	Characterizing viscoelastic materials via ensemble-based data assimilation of bubble collapse observations. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 152, 104455.	4.8	9
13	Neural cell injury pathology due to high-rate mechanical loading. <i>Brain Multiphysics</i> , 2021, 2, 100034.	2.3	21
14	Dynamic Rugae Strain Localizations and Instabilities in Soft Viscoelastic Materials During Inertial Microcavitation. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2021, , 45-49.	0.5	3
15	Acoustic cavitation rheometry. <i>Soft Matter</i> , 2021, 17, 2931-2941.	2.7	17
16	Predicting complex nonspherical instability shapes of inertial cavitation bubbles in viscoelastic soft matter. <i>Physical Review E</i> , 2021, 104, 045108.	2.1	7
17	Extracting non-linear viscoelastic material properties from violently-collapsing cavitation bubbles. <i>Extreme Mechanics Letters</i> , 2020, 39, 100839.	4.1	31
18	Epifluorescence-based three-dimensional traction force microscopy. <i>Scientific Reports</i> , 2020, 10, 16599.	3.3	21

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19	Flagellar kinematics reveals the role of environment in shaping sperm motility. <i>Journal of the Royal Society Interface</i> , 2020, 17, 20200525.	3.4	10
20	Augmented Lagrangian Digital Volume Correlation (ALDVC). <i>Experimental Mechanics</i> , 2020, 60, 1205-1223.	2.0	30
21	Mechanophenotyping of 3D multicellular clusters using displacement arrays of rendered tractions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 5655-5663.	7.1	27
22	Context-Dependent Role of Vinculin in Neutrophil Adhesion, Motility and Trafficking. <i>Scientific Reports</i> , 2020, 10, 2142.	3.3	17
23	Application of mild hypothermia successfully mitigates neural injury in a 3D in-vitro model of traumatic brain injury. <i>PLoS ONE</i> , 2020, 15, e0229520.	2.5	7
24	Generating Cell Type-Specific Protein Signatures from Non-symptomatic and Diseased Tissues. <i>Annals of Biomedical Engineering</i> , 2020, 48, 2218-2232.	2.5	1
25	Modeling tissue-selective cavitation damage. <i>Physics in Medicine and Biology</i> , 2019, 64, 225001.	3.0	41
26	Experimental characterization and hyperelastic constitutive modeling of open-cell elastomeric foams. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 133, 103701.	4.8	26
27	Comparative study of the dynamics of laser and acoustically generated bubbles in viscoelastic media. <i>Physical Review E</i> , 2019, 99, 043103.	2.1	29
28	Rapid, topology-based particle tracking for high-resolution measurements of large complex 3D motion fields. <i>Scientific Reports</i> , 2018, 8, 5581.	3.3	36
29	A q-Factor-Based Digital Image Correlation Algorithm (qDIC) for Resolving Finite Deformations with Degenerate Speckle Patterns. <i>Experimental Mechanics</i> , 2018, 58, 815-830.	2.0	36
30	High strain-rate soft material characterization via inertial cavitation. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 112, 291-317.	4.8	96
31	Modular approach for resolving and mapping complex neural and other cellular structures and their associated deformation fields in three dimensions. <i>Nature Protocols</i> , 2018, 13, 3042-3064.	12.0	10
32	The 2018 correlative microscopy techniques roadmap. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 443001.	2.8	99
33	The pressure-induced deformation response of the human lamina cribrosa: Analysis of regional variations. <i>Acta Biomaterialia</i> , 2017, 53, 123-139.	8.3	68
34	A cytoskeletal clutch mediates cellular force transmission in a soft, three-dimensional extracellular matrix. <i>Molecular Biology of the Cell</i> , 2017, 28, 1959-1974.	2.1	63
35	Microcavitation: the key to modeling blast traumatic brain injury?. <i>Concussion</i> , 2017, 2, CNC47.	1.0	17
36	Strain and rate-dependent neuronal injury in a 3D in vitro compression model of traumatic brain injury. <i>Scientific Reports</i> , 2016, 6, 30550.	3.3	132

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37	Harnessing cellular-derived forces in self-assembled microtissues to control the synthesis and alignment of ECM. <i>Biomaterials</i> , 2016, 77, 120-129.	11.4	34
38	Mean deformation metrics for quantifying 3D cell-matrix interactions without requiring information about matrix material properties. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 2898-2903.	7.1	60
39	Differences in Morphology and Traction Generation of Cell Lines Representing Different Stages of Osteogenesis. <i>Journal of Biomechanical Engineering</i> , 2015, 137, 124503.	1.3	13
40	Planar Gradient Diffusion System to Investigate Chemotaxis in a 3D Collagen Matrix. <i>Journal of Visualized Experiments</i> , 2015, , e52948.	0.3	3
41	Matrix Confinement Plays a Pivotal Role in Regulating Neutrophil-generated Traction, Speed, and Integrin Utilization. <i>Journal of Biological Chemistry</i> , 2015, 290, 3752-3763.	3.4	36
42	Intuitive Interface for the Quantitative Evaluation of Speckle Patterns for Use in Digital Image and Volume Correlation Techniques. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2015, 82, .	2.2	16
43	A Fast Iterative Digital Volume Correlation Algorithm for Large Deformations. <i>Experimental Mechanics</i> , 2015, 55, 261-274.	2.0	180
44	High Resolution, Large Deformation 3D Traction Force Microscopy. <i>PLoS ONE</i> , 2014, 9, e90976.	2.5	71
45	Three-dimensional traction forces of Schwann cells on compliant substrates. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20140247.	3.4	39
46	3D Viscoelastic traction force microscopy. <i>Soft Matter</i> , 2014, 10, 8095-8106.	2.7	43
47	3D Neutrophil Traction in Changing Microenvironments. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2014, , 147-154.	0.5	0
48	Three-dimensional Traction Force Microscopy for Studying Cellular Interactions with Biomaterials. <i>Procedia IUTAM</i> , 2012, 4, 144-150.	1.2	5
49	In Situ Hydrodynamic Lateral Force Calibration of AFM Colloidal Probes. <i>Langmuir</i> , 2011, 27, 13390-13399.	3.5	6
50	Quantifying Cell-Matrix Deformations in Three Dimensions. , 2011, , 211-232.		0
51	Three-Dimensional Traction Force Microscopy: A New Tool for Quantifying Cell-Matrix Interactions. <i>PLoS ONE</i> , 2011, 6, e17833.	2.5	208
52	A Possible Role for Integrin Signaling in Diffuse Axonal Injury. <i>PLoS ONE</i> , 2011, 6, e22899.	2.5	97
53	Quantifying cellular traction forces in three dimensions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 22108-22113.	7.1	251
54	Mechanically Tunable Thin Films of Photosensitive Artificial Proteins: Preparation and Characterization by Nanoindentation. <i>Macromolecules</i> , 2008, 41, 1839-1845.	4.8	40

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55	Lithographic Patterning of Photoreactive Cell-Adhesive Proteins. Journal of the American Chemical Society, 2007, 129, 4874-4875.	13.7	108
56	Three-dimensional Full-field Measurements of Large Deformations in Soft Materials Using Confocal Microscopy and Digital Volume Correlation. Experimental Mechanics, 2007, 47, 427-438.	2.0	203
57	Characterization of domain walls in BaTiO ₃ using simultaneous atomic force and piezo response force microscopy. Applied Physics Letters, 2006, 88, 102907.	3.3	23