Hauke Clausen-Schaumann

List of Publications by Year
in descending order

97 papers	6,570 citations	136950 32 h-index	64796 79 g-index
102 all docs	102 docs citations	102 times ranked	7422 citing authors

#	Article	IF	Citations
1	Nano-Scale Mechanical Properties of the Articular Cartilage Zones in a Mouse Model of Post-Traumatic Osteoarthritis. Applied Sciences (Switzerland), 2022, 12, 2596.	2.5	4
2	Synthetic cellâ€"based materials extract positional information from morphogen gradients. Science Advances, 2022, 8, eabl9228.	10.3	15
3	ER Stress in ERp57 Knockout Knee Joint Chondrocytes Induces Osteoarthritic Cartilage Degradation and Osteophyte Formation. International Journal of Molecular Sciences, 2022, 23, 182.	4.1	9
4	The Matrilin-3 T298M mutation predisposes for post-traumatic osteoarthritis in a knock-in mouse model. Osteoarthritis and Cartilage, 2021, 29, 78-88.	1.3	4
5	Basement membrane stiffness determines metastases formation. Nature Materials, 2021, 20, 892-903.	27.5	94
6	Single Cell Bioprinting with Ultrashort Laser Pulses. Advanced Functional Materials, 2021, 31, 2100066.	14.9	19
7	Functionalization of Diamondâ€Like Carbon Surfaces to Access High Rupture Forces in Singleâ€Molecule Force Spectroscopy of Covalent Bonds. Chemistry Methods, 2021, 1, 271-277.	3.8	1
8	Printing of living cells by using ultra-short laser pulses. , 2021, , .		0
9	Fourier Transform Infrared Microspectroscopy Combined with Principal Component Analysis and Artificial Neural Networks for the Study of the Effect of Î²-Hydroxy-Î²-Methylbutyrate (HMB) Supplementation on Articular Cartilage. International Journal of Molecular Sciences, 2021, 22, 9189.	4.1	2
10	Mitochondrial respiratory chain function promotes extracellular matrix integrity in cartilage. Journal of Biological Chemistry, 2021, 297, 101224.	3.4	16
11	Extending Single Cell Bioprinting from Femtosecond to Picosecond Laser Pulse Durations. Micromachines, 2021, 12, 1172.	2.9	6
12	Single cell RNA sequencing identifies mitochondrial respiration as a key factor contributing to extracellular matrix integrity. Osteologie, 2021, 30, .	0.1	0
13	Sensory neuropeptides are required for bone and cartilage homeostasis in a murine destabilization-induced osteoarthritis model. Bone, 2020, 133, 115181.	2.9	30
14	Early Detection of Cartilage Degeneration: A Comparison of Histology, Fiber Bragg Grating-Based Micro-Indentation, and Atomic Force Microscopy-Based Nano-Indentation. International Journal of Molecular Sciences, 2020, 21, 7384.	4.1	18
15	Imbalanced cellular metabolism compromises cartilage homeostasis and joint function in a mouse model of mucolipidosis type III gamma. DMM Disease Models and Mechanisms, 2020, 13, .	2.4	4
16	Precision 3Dâ€Printed Cell Scaffolds Mimicking Native Tissue Composition and Mechanics. Advanced Healthcare Materials, 2020, 9, e2000918.	7.6	29
17	Contactless Vibrational Analysis of Transparent Hydrogel Structures Using Laser-Doppler Vibrometry. Experimental Mechanics, 2020, 60, 1067-1078.	2.0	9
18	Inadequate tissue mineralization promotes cancer cell attachment. PLoS ONE, 2020, 15, e0237116.	2.5	2

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19	Adhesive Properties of the Hyaluronan Pericellular Coat in Hyaluronan Synthases Overexpressing Mesenchymal Stem Cells. International Journal of Molecular Sciences, 2020, 21, 3827.	4.1	10
20	Loss of tenomodulin expression is a risk factor for ageâ€related intervertebral disc degeneration. Aging Cell, 2020, 19, e13091.	6.7	36
21	Three-dimensional self-assembling nanofiber matrix rejuvenates aged/degenerative human tendon stem/progenitor cells. Biomaterials, 2020, 236, 119802.	11.4	40
22	Mice Lacking the Matrilin Family of Extracellular Matrix Proteins Develop Mild Skeletal Abnormalities and Are Susceptible to Age-Associated Osteoarthritis. International Journal of Molecular Sciences, 2020, 21, 666.	4.1	23
23	Osteoidosis leads to altered differentiation and function of osteoclasts. Journal of Cellular and Molecular Medicine, 2020, 24, 5665-5674.	3.6	7
24	Vibrational Analysis of Biopolymer-Based Hydrogels Using 3D-Printed Test Structures for Applications in Bioprinting. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 29-35.	0.5	0
25	Investigating the Feasibility of Laser-Doppler Vibrometry for Vibrational Analysis of Living Mammalian Cells. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 31-36.	0.5	0
26	Inhibition of SDC4-LOX mediated extracellular matrix stiffening prevents chondrocyte differentiation in OA cartilage via increased YAP/TAZ signaling. Osteoarthritis and Cartilage, 2019, 27, S150-S151.	1.3	1
27	A laser-cutting-based manufacturing process for the generation of three-dimensional scaffolds for tissue engineering using Polycaprolactone/Hydroxyapatite composite polymer. Journal of Tissue Engineering, 2019, 10, 204173141985915.	5.5	14
28	Aggrecan is critical in maintaining the cartilage matrix biomechanics which in turn influences the correct development of the growth plate. Osteoarthritis and Cartilage, 2019, 27, S178.	1.3	3
29	Pilus-1 Backbone Protein RrgB of Streptococcus pneumoniae Binds Collagen I in a Force-Dependent Way. ACS Nano, 2019, 13, 7155-7165.	14.6	21
30	Mechanical Activation Drastically Accelerates Amide Bond Hydrolysis, Matching Enzyme Activity. Angewandte Chemie - International Edition, 2019, 58, 9787-9790.	13.8	37
31	Mechanische Aktivierung beschleunigt die Hydrolyse der Amidbindung drastisch, vergleichbar der AktivitÄt von Enzymen. Angewandte Chemie, 2019, 131, 9890-9894.	2.0	6
32	Aggrecan Hypomorphism Compromises Articular Cartilage Biomechanical Properties and Is Associated with Increased Incidence of Spontaneous Osteoarthritis. International Journal of Molecular Sciences, 2019, 20, 1008.	4.1	36
33	Age related changes in cell stiffness of tendon stem/progenitor cells and a rejuvenating effect of ROCK-inhibition. Biochemical and Biophysical Research Communications, 2019, 509, 839-844.	2.1	24
34	Fibrin glue displays promising in vitro characteristics as a potential carrier of adipose progenitor cells for tissue regeneration. Journal of Tissue Engineering and Regenerative Medicine, 2019, 13, 359-368.	2.7	16
35	Femtosecond laser printing of living human cells. , 2019, , .		1
36	Single Molecule Force Spectroscopy Reveals Two-Domain Binding Mode of Pilus-1 Tip Protein RrgA of Streptococcus pneumoniae to Fibronectin. ACS Nano, 2018, 12, 549-558.	14.6	25

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37	A Perfusion Bioreactor System for Cell Seeding and Oxygen-Controlled Cultivation of Three-Dimensional Cell Cultures. Tissue Engineering - Part C: Methods, 2018, 24, 585-595.	2.1	50
38	Sacrificial-layer free transfer of mammalian cells using near infrared femtosecond laser pulses. PLoS ONE, 2018, 13, e0195479.	2.5	15
39	Covalent Immobilization of Proteins for the Single Molecule Force Spectroscopy. Journal of Visualized Experiments, 2018, , .	0.3	10
40	Cartilage microindentation using cylindrical and spherical optical fiber indenters with integrated Bragg gratings as force sensors. , 2018, , .		1
41	Forced exercise-induced osteoarthritis is attenuated in mice lacking the small leucine-rich proteoglycan decorin. Annals of the Rheumatic Diseases, 2017, 76, 442-449.	0.9	42
42	Tenomodulin is Required for Tendon Endurance Running and Collagen I Fibril Adaptation to Mechanical Load. EBioMedicine, 2017, 20, 240-254.	6.1	78
43	Microindentation sensor system based on an optical fiber Bragg grating for the mechanical characterization of articular cartilage by stress-relaxation. Sensors and Actuators B: Chemical, 2017, 252, 440-449.	7.8	19
44	Syndecan-4 deficiency affects extracellular matrix architecture of articular cartilage. Osteoarthritis and Cartilage, 2017, 25, S146.	1.3	0
45	Structural decoding of netrin-4 reveals a regulatory function towards mature basement membranes. Nature Communications, 2016, 7, 13515.	12.8	74
46	Structural and Mechanical Cues in Cartilage Morphogenesis. Biophysical Journal, 2016, 110, 498a.	0.5	0
47	Altered matrix stiffness in decorin-null articular cartilage results in improved resistance to osteoarthritis induced by forced exercise. Osteoarthritis and Cartilage, 2016, 24, S134.	1.3	0
48	Early changes in morphology, bone mineral density and matrix composition of vertebrae lead to disc degeneration in aged collagen IX â^'/â^' mice. Matrix Biology, 2016, 49, 132-143.	3.6	27
49	Mechanochemical Cycloreversion of Cyclobutane Observed at the Single Molecule Level. Chemistry - A European Journal, 2016, 22, 12034-12039.	3.3	34
50	Force dependence of the infrared spectra of polypropylene calculated with density functional theory. Polymer Degradation and Stability, 2016, 128, 294-299.	5.8	9
51	Structural and mechanical properties of the proliferative zone of the developing murine growth plate cartilage assessed by atomic force microscopy. Matrix Biology, 2016, 50, 1-15.	3.6	97
52	A4.10â€...Forced exercise-induced osteoarthritis is attenuated in mice lacking the small leucine-rich proteoglycan decorin. Annals of the Rheumatic Diseases, 2015, 74, A40.1-A40.	0.9	0
53	All optical indentation probe for endoscopic diagnosis of ostheoarthritis. Proceedings of SPIE, 2015, , .	0.8	2
54	Severe Extracellular Matrix Abnormalities and Chondrodysplasia in Mice Lacking Collagen Prolyl 4-Hydroxylase Isoenzyme II in Combination with a Reduced Amount of Isoenzyme I. Journal of Biological Chemistry, 2015, 290, 16964-16978.	3.4	43

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55	Effects of tissue calcification during osteoarthritis on extracellular matrix and cartilage stiffness. Osteoarthritis and Cartilage, 2015, 23, A290.	1.3	1
56	Decoding Cytoskeleton-Anchored and Non-Anchored Receptors from Single-Cell Adhesion Force Data. Biophysical Journal, 2015, 109, 1330-1333.	0.5	32
57	Mechanically induced silyl ester cleavage under acidic conditions investigated by AFM-based single-molecule force spectroscopy in the force-ramp mode. Faraday Discussions, 2014, 170, 357-367.	3.2	18
58	A density functional theory model of mechanically activated silyl ester hydrolysis. Journal of Chemical Physics, 2014, 140, 044321.	3.0	18
59	Decorin-deficient mice are less prone to develop osteoarthritis after forced exercise. Osteoarthritis and Cartilage, 2014, 22, S12-S13.	1.3	0
60	On the function of chitin synthase extracellular domains in biomineralization. Journal of Structural Biology, 2013, 183, 216-225.	2.8	28
61	Cationically Charged Mn^{II}Al^{III} LDH Nanosheets by Chemical Exfoliation and Their Use As Building Blocks in Graphene Oxide-Based Materials. Langmuir, 2013, 29, 9199-9207.	3.5	43
62	Probing the Interaction Forces of Prostate Cancer Cells with Collagen I and Bone Marrow Derived Stem Cells on the Single Cell Level. PLoS ONE, 2013, 8, e57706.	2.5	20
63	Uncovering Ultrastructural Defences in Daphnia magna â€“ An Interdisciplinary Approach to Assess the Predator-Induced Fortification of the Carapace. PLoS ONE, 2013, 8, e67856.	2.5	40
64	Changes in water chemistry can disable plankton prey defenses. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 15377-15382.	7.1	66
65	Increased stemness and migration of human mesenchymal stem cells in hypoxia is associated with altered integrin expression. Biochemical and Biophysical Research Communications, 2012, 423, 379-385.	2.1	86
66	Single-Molecule Force-Clamp Experiments Reveal Kinetics of Mechanically Activated Silyl Ester Hydrolysis. ACS Nano, 2012, 6, 1314-1321.	14.6	33
67	Mechanically activated rupture of single covalent bonds: evidence of force induced bond hydrolysis. Physical Chemistry Chemical Physics, 2011, 13, 5994.	2.8	48
68	Transmembrane myosin chitin synthase involved in mollusc shell formation produced in Dictyostelium is active. Biochemical and Biophysical Research Communications, 2011, 415, 586-590.	2.1	11
69	Effect of collagen I and fibronectin on the adhesion, elasticity and cytoskeletal organization of prostate cancer cells. Biochemical and Biophysical Research Communications, 2010, 402, 361-366.	2.1	50
70	Simple Coupling Chemistry Linking Carboxyl-Containing Organic Molecules to Silicon Oxide Surfaces under Acidic Conditions. Langmuir, 2010, 26, 15333-15338.	3.5	26
71	Establishment of immortalized periodontal ligament progenitor cell line and its behavioural analysis on smooth and rough titanium surface. , 2010, 19, 228-241.		41
72	The structure and functionality of contractile forisome protein aggregates. Biomaterials, 2008, 29, 247-256.	11.4	23

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73	Researching into the cellular shape, volume and elasticity of mesenchymal stem cells, osteoblasts and osteosarcoma cells by atomic force microscopy. Journal of Cellular and Molecular Medicine, 2008, 12, 537-552.	3.6	172
74	Dynamic Strength of the Siliconâ"Carbon Bond Observed over Three Decades of Force-Loading Rates. Journal of the American Chemical Society, 2008, 130, 3664-3668.	13.7	70
75	Differential analysis of biomolecular rupture forces. Journal of Physics Condensed Matter, 2006, 18, S581-S599.	1.8	15
76	Mechanochemistry: The Mechanical Activation of Covalent Bonds. ChemInform, 2005, 36, no.	0.0	2
77	Mechanochemistry:â€‰ The Mechanical Activation of Covalent Bonds. Chemical Reviews, 2005, 105, 2921-2948.	47.7	1,106
78	Double-chip protein arrays: force-based multiplex sandwich immunoassays with increased specificity. Analytical and Bioanalytical Chemistry, 2004, 379, 974-81.	3.7	19
79	Double chip protein arrays using recombinant single-chain Fv antibody fragments. Proteomics, 2004, 4, 1417-1420.	2.2	14
80	DNA: A Programmable Force Sensor. Science, 2003, 301, 367-370.	12.6	167
81	A force-based protein biochip. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 11356-11360.	7.1	59
82	Elasticity of Single Polyelectrolyte Chains and Their Desorption from Solid Supports Studied by AFM Based Single Molecule Force Spectroscopy. Macromolecules, 2001, 34, 1039-1047.	4.8	239
83	Higher Adducts of C60 by Tether-Directed Remote Functionalization: X-Ray Crystal Structure and Reactivity of a Chiral Hexakis-Cyclopropanated Fullerene with all Addends Located along an Equatorial Belt. Angewandte Chemie - International Edition, 2000, 39, 3813-3816.	13.8	20
84	Cisplatin Changes the Mechanics of Single DNA Molecules. Angewandte Chemie - International Edition, 2000, 39, 3912-3915.	13.8	58
85	Artificial Noses Sniff DNA. ChemPhysChem, 2000, 1, 89-90.	2.1	16
86	Force spectroscopy with single bio-molecules. Current Opinion in Chemical Biology, 2000, 4, 524-530.	6.1	388
87	Mechanical Stability of Single DNA Molecules. Biophysical Journal, 2000, 78, 1997-2007.	0.5	405
88	Characterization of IgG LangmuirÃ¢Â€Â“Blodgett films immobilized on functionalized polymers. Talanta, 2000, 52, 921-930.	5.5	23
89	Perfect nanospheres from polymerized lipofullerenes. , 1999, , .		0
90	Knotted Fishing Line, Covalent Bonds, and Breaking Points. Science, 1999, 286, 11a-11.	12.6	15

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91	Sequence-dependent mechanics of single DNA molecules. Nature Structural Biology, 1999, 6, 346-349.	9.7	726
92	Nanospheres from Polymerized Lipofullerenes. Angewandte Chemie - International Edition, 1999, 38, 1962-1965.	13.8	34
93	How Strong Is a Covalent Bond?. Science, 1999, 283, 1727-1730.	12.6	1,007
94	DNA Adsorption to Laterally Structured Charged Lipid Membranes. Langmuir, 1999, 15, 8246-8251.	3.5	52
95	Enzyme-Assisted Nanoscale Lithography in Lipid Membranes. Advanced Materials, 1998, 10, 949-952.	21.0	38
96	Atomic Force Microscope Imaging of Phospholipid Bilayer Degradation by Phospholipase A2. Biophysical Journal, 1998, 74, 2398-2404.	0.5	193
97	Direct Detection of Domains in Phospholipid Bilayers by Grazing Incidence Diffraction of Neutrons and Atomic Force Microscopy. Biophysical Journal, 1998, 74, 2443-2450.	0.5	71