Frederick H Silver

List of Publications by Year
in descending order

81 papers	4,701 citations	159585 30 h-index	98798 67 g-index
83 all docs	83 docs citations	83 times ranked	4640 citing authors

#	Article	IF	Citations
1	In Vivo Determination of the Human Corneal Elastic Modulus Using Vibrational Optical Coherence Tomography. Translational Vision Science and Technology, 2022, 11, 11.	2.2	4
2	Mechanoâ€vibrational spectroscopy of skin: Are changes in collagen and vascular tissue components early signs of basal cell carcinoma formation?. Skin Research and Technology, 2021, 27, 227-233.	1.6	7
3	Use of Vibrational Optical Coherence Tomography to Analyze the Mechanical Properties of Composite Materials. Sensors, 2021, 21, 2001.	3.8	0
4	Use of vibrational optical coherence tomography to measure viscoelastic properties of muscle and tendon: A new method to follow musculoskeletal injury and pathology In vivo. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 119, 104479.	3.1	1
5	Molecular Basis for Mechanical Properties of ECMs: Proposed Role of Fibrillar Collagen and Proteoglycans in Tissue Biomechanics. Biomolecules, 2021, 11, 1018.	4.0	15
6	Characterization of the Biomechanical Properties of Skin Using Vibrational Optical Coherence Tomography: Do Changes in the Biomechanical Properties of Skin Stroma Reflect Structural Changes in the Extracellular Matrix of Cancerous Lesions?. Biomolecules, 2021, 11, 1712.	4.0	7
7	The â€œVirtual Biopsyâ€• of Cancerous Lesions in 3D: Non-Invasive Differentiation between Melanoma and Other Lesions Using Vibrational Optical Coherence Tomography. Dermatopathology (Basel,) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf	1.5	4
8	Vibrational Optical Coherence Tomography Detects Unique Skin Fibrotic States: Preliminary Results of Animal and Human Studies. Journal of the American Academy of Dermatology, 2020, 85, 780-782.	1.2	2
9	â€œVirtual Biopsiesâ€• of Normal Skin and Thermal and Chemical Burn Wounds. Advances in Skin and Wound Care, 2020, 33, 307-312.	1.0	6
10	Virtual biopsies and vibrational-mechanical analysis of skin rejuvenation: comparison of results obtained with micro-needling and topical treatments. Journal of Dermatology & Cosmetology, 2020, 4, 50-57.	0.2	0
11	Mechanical spectroscopy and imaging of skin components in vivo: Assignment of the observed moduli. Skin Research and Technology, 2019, 25, 47-53.	1.6	9
12	Comparative â€œvirtual biopsiesâ€• of normal skin and skin lesions using vibrational optical coherence tomography. Skin Research and Technology, 2019, 25, 743-749.	1.6	20
13	Virtual Biopsy and Physical Characterization of Tissues, Biofilms, Implants and Viscoelastic Liquids Using Vibrational Optical Coherence Tomography. World Journal of Mechanics, 2019, 09, 1-16.	0.4	4
14	Biomechanical analysis of decellularized dermis and skin: Initial <i>in vivo</i> observations using optical cohesion tomography and vibrational analysis. Journal of Biomedical Materials Research - Part A, 2018, 106, 1421-1427.	4.0	14
15	Structure and behavior of collagen fibers. , 2018, , 345-365.		6
16	Vibrational analysis of implants and tissues: Calibration and mechanical spectroscopy of multiâ€component materials. Journal of Biomedical Materials Research - Part A, 2017, 105, 1666-1671.	4.0	9
17	Morphomechanics of dermisâ€A method for nonâ€destructive testing of collagenous tissues. Skin Research and Technology, 2017, 23, 399-406.	1.6	19
18	A method for nondestructive mechanical testing of tissues and implants. Journal of Biomedical Materials Research - Part A, 2017, 105, 15-22.	4.0	27

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19	Viscoelastic Behavior of Allografts and Scaffolds Composed of Extracellular Matrices. Advances in Tissue Engineering & Regenerative Medicine Open Access, 2017, 2, .	0.1	2
20	Biochemical, Biophysical and Mechanical Characterization of Decellularized Dermal Implants. Materials Sciences and Applications, 2017, 08, 873-888.	0.4	4
21	Mechanical Analysis of Multi-Component Tissues. World Journal of Mechanics, 2017, 07, 121-132.	0.4	0
22	A Matter of Gravity-Mechanotransduction: How Mechanical Forces Influence Biological Materials. Material Science & Engineering International Journal, 2017, 1, .	0.1	0
23	Vibrational Analysis of Extracellular Matrix Scaffolds: Comparison of Skin, Dermis, Cartilage and Subchondral Bone Using Oct and Vibrational Analysis. Advances in Tissue Engineering & Regenerative Medicine Open Access, 2017, 2, .	0.1	0
24	Measurement of Mechanical Properties of Natural and Engineered Implants. Advances in Tissue Engineering & Regenerative Medicine Open Access, 2016, 1, .	0.1	13
25	Deposition of apatite in mineralizing vertebrate extracellular matrices: A model of possible nucleation sites on type I collagen. Connective Tissue Research, 2011, 52, 242-254.	2.3	109
26	The Importance of Collagen Fibers in Vertebrate Biology. Journal of Engineered Fibers and Fabrics, 2009, 4, 155892500900400.	1.0	15
27	Collagen as a scaffold for biomimetic mineralization of vertebrate tissues. Journal of Materials Chemistry, 2006, 16, 1495-1503.	6.7	78
28	Viscoelastic properties of acid- and alkaline-treated human dermis: a correlation between total surface charge and elastic modulus. Skin Research and Technology, 2006, 12, 190-198.	1.6	22
29	Energy Analysis of Flow Induced Harmonic Motion in Blood Vessel Walls. Cardiovascular Engineering (Dordrecht, Netherlands), 2005, 5, 21-28.	1.0	4
30	A Mechanical Model of Porcine Vascular Tissues-Part II: Stressâ€“Strain and Mechanical Properties of Juvenile Porcine Blood Vessels. Cardiovascular Engineering (Dordrecht, Netherlands), 2005, 5, 157-169.	1.0	22
31	The Role of Type I Collagen Molecular Structure in Tendon Elastic Energy Storage. Materials Research Society Symposia Proceedings, 2005, 874, 1.	0.1	4
32	The Effects of Prestrain and Collagen Fibril Alignment on In Vitro Mineralization of Self-Assembled Collagen Fibers. Connective Tissue Research, 2005, 46, 107-115.	2.3	17
33	A Mechanical Model of Porcine Vascular Tissues-Part I: Determination of Macromolecular Component Arrangement and Volume Fractions. Cardiovascular Engineering (Dordrecht, Netherlands), 2004, 4, 281-294.	1.0	10
34	Elastic energy storage in unmineralized and mineralized extracellular matrices (ECMs): A comparison between molecular modeling and experimental measurements. Journal of Theoretical Biology, 2004, 229, 371-381.	1.7	36
35	Analysis of Mineral Deposition in Turkey Tendons and Self-Assembled Collagen Fibers Using Mechanical Techniques. Connective Tissue Research, 2004, 45, 131-141.	2.3	19
36	Do changes in the mechanical properties of articular cartilage promote catabolic destruction of cartilage and osteoarthritis?. Matrix Biology, 2004, 23, 467-476.	3.6	26

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37	Mechanical Behavior of Vessel Wall: A Comparative Study of Aorta, Vena Cava, and Carotid Artery. Annals of Biomedical Engineering, 2003, 31, 793-803.	2.5	118
38	Mechanobiology of force transduction in dermal tissue. Skin Research and Technology, 2003, 9, 3-23.	1.6	299
39	Collagen self-assembly and the development of tendon mechanical properties. Journal of Biomechanics, 2003, 36, 1529-1553.	2.1	538
40	Invited Review: Role of mechanophysiology in aging of ECM: effects of changes in mechanochemical transduction. Journal of Applied Physiology, 2003, 95, 2134-2141.	2.5	47
41	Mechanosensing and Mechanochemical Transduction: How Is Mechanical Energy Sensed and Converted Into Chemical Energy in an Extracellular Matrix?. Critical Reviews in Biomedical Engineering, 2003, 31, 255-331.	0.9	122
42	Viscoelastic Properties of Self-Assembled Type I Collagen Fibers: Molecular Basis of Elastic and Viscous Behaviors. Connective Tissue Research, 2002, 43, 569-580.	2.3	54
43	Elastic energy storage in human articular cartilage: estimation of the elastic modulus for type II collagen and changes associated with osteoarthritis. Matrix Biology, 2002, 21, 129-137.	3.6	57
44	The structure and function of normally mineralizing avian tendons. Comparative Biochemistry and Physiology Part A, Molecular & Integrative Physiology, 2002, 133, 1135-1157.	1.8	106
45	Viscoelastic properties of young and old human dermis: A proposed molecular mechanism for elastic energy storage in collagen and elastin. Journal of Applied Polymer Science, 2002, 86, 1978-1985.	2.6	81
46	Mechanical Implications of the Domain Structure of Fiber-Forming Collagens: Comparison of the Molecular and Fibrillar Flexibilities of the Î±1-Chains Found in Types Iâ€"III Collagen. Journal of Theoretical Biology, 2002, 216, 243-254.	1.7	73
47	Mechanobiology of cartilage: how do internal and external stresses affect mechanochemical transduction and elastic energy storage?. Biomechanics and Modeling in Mechanobiology, 2002, 1, 219-238.	2.8	24
48	Viscoelastic properties of self-assembled type I collagen fibers: molecular basis of elastic and viscous behaviors. Connective Tissue Research, 2002, 43, 569-80.	2.3	17
49	Viscoelastic Behavior of Osteoarthritic Cartilage. Connective Tissue Research, 2001, 42, 223-233.	2.3	28
50	Molecular Basis for Elastic Energy Storage in Mineralized Tendon. Biomacromolecules, 2001, 2, 750-756.	5.4	75
51	Viscoelasticity of the Vessel Wall: The Role of Collagen and Elastic Fibers. Critical Reviews in Biomedical Engineering, 2001, 29, 279-302.	0.9	139
52	Viscoelastic properties of human skin and processed dermis. Skin Research and Technology, 2001, 7, 18-23.	1.6	358
53	Transition from viscous to elastic-based dependency of mechanical properties of self-assembled type I collagen fibers. Journal of Applied Polymer Science, 2001, 79, 134-142.	2.6	94
54	The Role of Mineral in the Storage of Elastic Energy in Turkey Tendons. Biomacromolecules, 2000, 1, 180-185.	5.4	64

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55	Role of Storage on Changes in the Mechanical Properties of Tendon and Self-Assembled Collagen Fibers. Connective Tissue Research, 2000, 41, 155-164.	2.3	110
56	Self-assembly of collagen fibers. Influence of fibrillar alignment and decorin on mechanical properties. Biophysical Journal, 1997, 73, 2164-2172.	0.5	353
57	Effects of static axial strain on the tensile properties and failure mechanisms of self-assembled collagen fibers. Journal of Applied Polymer Science, 1997, 63, 1429-1440.	2.6	83
58	Effects of static axial strain on the tensile properties and failure mechanisms of selfâ€assembled collagen fibers. Journal of Applied Polymer Science, 1997, 63, 1429-1440.	2.6	1
59	Preparation of fibrin glue: A study of chemical and physical methods. Journal of Applied Biomaterials: an Official Journal of the Society for Biomaterials, 1995, 6, 175-183.	1.2	28
60	Silicone Gel-Filled Breast Implants: Is Local Inflammation Associated With Fat Necrosis?. Breast Journal, 1995, 1, 17-21.	1.0	4
61	Cartilage wound healing. An overview. Otolaryngologic Clinics of North America, 1995, 28, 847-64.	1.1	17
62	Physical properties of model viscoelastic materials. Journal of Applied Biomaterials: an Official Journal of the Society for Biomaterials, 1994, 5, 227-234.	1.2	3
63	Biomaterials, Medical Devices and Tissue Engineering: An Integrated Approach. , 1994, , .		73
64	A review of the etiology and treatment of skin ulcers with wound dressings: comparison of the effects of occlusive and nonocclusive dressings. Journal of Long-Term Effects of Medical Implants, 1992, 2, 267-88.	0.7	3
65	Tissue compatibility of tyrosine-derived polycarbonates and polyiminocarbonates: an initial evaluation. Journal of Long-Term Effects of Medical Implants, 1992, 1, 329-46.	0.7	3
66	Collagenous Biocomposites for the Repair of Soft Tissue Injury. Materials Research Society Symposia Proceedings, 1991, 252, 151.	0.1	3
67	Use of collagen film as a dural substitute: Preliminary animal studies. Journal of Biomedical Materials Research Part B, 1991, 25, 267-276.	3.1	61
68	Noninvasive assessment of mechanical properties of peripheral arteries. Annals of Biomedical Engineering, 1990, 18, 549-566.	2.5	58
69	A method for preparation of etched collagen fibers that support neurite outgrowth. Journal of Applied Biomaterials: an Official Journal of the Society for Biomaterials, 1990, 1, 225-232.	1.2	4
70	Cartilage Grafts in Nasal Surgery. American Journal of Rhinology & Allergy, 1989, 3, 167-171.	2.2	2
71	Mechanical properties of the aorta: a review. Critical Reviews in Biomedical Engineering, 1989, 17, 323-58.	0.9	29
72	Material properties of living soft tissue composites. Journal of Biomedical Materials Research Part B, 1988, 22, 311-326.	3.1	20

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73	Mechanical Properties of Septai Cartilage Homografts. Otolaryngology - Head and Neck Surgery, 1988, 99, 374-379.	1.9	37
74	Relationship Between Mechanical Properties and Collagen Structure of Closed and Open Wounds. Journal of Biomechanical Engineering, 1988, 110, 352-356.	1.3	20
75	Increased aortic root stiffness associated with osteogenesis imperfecta. Annals of Biomedical Engineering, 1987, 15, 91-99.	2.5	19
76	Non-invasive assessment of aortic mechanical properties. Annals of Biomedical Engineering, 1986, 14, 513-524.	2.5	35
77	Mechanical Analysis of Hypertrophic Scar Tissue: Structural Basis for Apparent Increased Rigidity. Journal of Investigative Dermatology, 1985, 84, 9-13.	0.7	98
78	Collagen Fiber Formation in Repair Tissue: Development of Strength and Toughness. Collagen and Related Research, 1985, 5, 481-492.	2.0	192
79	Molecular structure of collagen in solution: comparison of types I, II, III and V. International Journal of Biological Macromolecules, 1984, 6, 125-132.	7.5	71
80	Viscoelastic Behavior of Human Connective Tissues: Relative Contribution of Viscous and Elastic Components. Connective Tissue Research, 1983, 12, 59-70.	2.3	209
81	Evaluation of Collagen Crosslinking Techniques. Biomaterials, Medical Devices, and Artificial Organs, 1983, 11, 293-318.	0.3	274