Ellen M Arruda

List of Publications by Year
in descending order

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		109264	71651
90	9,683	35	76
papers	citations	h-index	g-index

93	93	93	8465
all docs	docs citations	times ranked	citing authors

#	ARTICLE	IF	CITATIONS
1	A three-dimensional constitutive model for the large stretch behavior of rubber elastic materials. Journal of the Mechanics and Physics of Solids, 1993, 41, 389-412.	2.3	2,451
2	Ultrastrong and Stiff Layered Polymer Nanocomposites. Science, 2007, 318, 80-83.	6.0	1,500
3	Constitutive Models of Rubber Elasticity: A Review. Rubber Chemistry and Technology, 2000, 73, 504-523.	0.6	926
4	Dispersions of Aramid Nanofibers: A New Nanoscale Building Block. ACS Nano, 2011, 5, 6945-6954.	7.3	553
5	Effects of strain rate, temperature and thermomechanical coupling on the finite strain deformation of glassy polymers. Mechanics of Materials, 1995, 19, 193-212.	1.7	524
6	Evolution of plastic anisotropy in amorphous polymers during finite straining. International Journal of Plasticity, 1993, 9, 697-720.	4.1	400
7	Abiotic tooth enamel. Nature, 2017, 543, 95-98.	13.7	184
8	Finite element modeling of human skin using an isotropic, nonlinear elastic constitutive model. Journal of Biomechanics, 2000, 33, 645-652.	0.9	183
9	Remodeling of biological tissue: Mechanically induced reorientation of a transversely isotropic chain network. Journal of the Mechanics and Physics of Solids, 2005, 53, 1552-1573.	2.3	163
10	Reactive Aramid Nanostructures as Highâ€Performance Polymeric Building Blocks for Advanced Composites. Advanced Functional Materials, 2013, 23, 2072-2080.	7.8	156
11	Engineering of Functional Tendon. Tissue Engineering, 2004, 10, 755-761.	4.9	145
12	The large strain compression, tension, and simple shear of polycarbonate. Polymer Engineering and Science, 1994, 34, 716-725.	1.5	136
13	Structure and Functional Evaluation of Tendonâ€“Skeletal Muscle Constructs Engineered in Vitro. Tissue Engineering, 2006, 12, 3149-3158.	4.9	120
14	Prostatic Fibrosis is Associated with Lower Urinary Tract Symptoms. Journal of Urology, 2012, 188, 1375-1381.	0.2	114
15	A New Constitutive Model for the Compressibility of Elastomers at Finite Deformations. Rubber Chemistry and Technology, 2001, 74, 541-559.	0.6	112
16	Tissue Engineering of Recellularized Small-Diameter Vascular Grafts. Tissue Engineering, 2005, 11, 778-786.	4.9	111
17	Can Natureâ€™s Design be Improved Upon? High Strength, Transparent Nacre-Like Nanocomposites with Double Network of Sacrificial Cross Links. Journal of Physical Chemistry B, 2008, 112, 14359-14363.	1.2	101
18	A rheological network model for the continuum anisotropic and viscoelastic behavior of soft tissue. Biomechanics and Modeling in Mechanobiology, 2004, 3, 56-65.	1.4	93

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19	Effects of initial anisotropy on the finite strain deformation behavior of glassy polymers. International Journal of Plasticity, 1993, 9, 783-811.	4.1	89
20	Three-Dimensional Engineered Boneâ€œLigamentâ€œBone Constructs for Anterior Cruciate Ligament Replacement. Tissue Engineering - Part A, 2012, 18, 103-116.	1.6	80
21	A closed-form, hierarchical, multi-interphase model for compositesâ€”Derivation, verification and application to nanocomposites. Journal of the Mechanics and Physics of Solids, 2011, 59, 43-63.	2.3	77
22	Aramid nanofiber-reinforced transparent nanocomposites. Journal of Composite Materials, 2015, 49, 1873-1879.	1.2	74
23	The Role of Nanoparticle Layer Separation in the Finite Deformation Response of Layered Polyurethane-Clay Nanocomposites. Macromolecules, 2009, 42, 6588-6595.	2.2	68
24	LBL Assembled Laminates with Hierarchical Organization from Nano- to Microscale: High-Toughness Nanomaterials and Deformation Imaging. ACS Nano, 2009, 3, 1564-1572.	7.3	65
25	Finite strain response, microstructural evolution and Î²â†’Î± phase transformation of crystalline isotactic polypropylene. Polymer, 2005, 46, 455-470.	1.8	57
26	Regional stiffening with aging in tibialis anterior tendons of mice occurs independent of changes in collagen fibril morphology. Journal of Applied Physiology, 2011, 111, 999-1006.	1.2	53
27	Deconstructing the Anterior Cruciate Ligament: What We Know and Do Not Know About Function, Material Properties, and Injury Mechanics. Journal of Biomechanical Engineering, 2015, 137, 020906.	0.6	50
28	Effect of implantation on engineered skeletal muscle constructs. Journal of Tissue Engineering and Regenerative Medicine, 2013, 7, 434-442.	1.3	48
29	Swelling and Mechanical Stretching of Elastomeric Materials. Mathematics and Mechanics of Solids, 2001, 6, 641-659.	1.5	47
30	Design of armor for protection against blast and impact. Journal of the Mechanics and Physics of Solids, 2015, 85, 98-111.	2.3	47
31	Regional variation of tibialis anterior tendon mechanics is lost following denervation. Journal of Applied Physiology, 2006, 101, 1113-1117.	1.2	46
32	Tissueâ€engineered tendon constructs for rotator cuff repair in sheep. Journal of Orthopaedic Research, 2018, 36, 289-299.	1.2	42
33	Simultaneously High Stiffness and Damping in Nanoengineered Microtruss Composites. ACS Nano, 2014, 8, 3468-3475.	7.3	40
34	Ultrastructure of myotendinous junctions in tendon-skeletal muscle constructs engineered in vitro. Histology and Histopathology, 2009, 24, 541-50.	0.5	38
35	The effects of the interphase and strain gradients on the elasticity of layer by layer (LBL) polymer/clay nanocomposites. International Journal of Solids and Structures, 2011, 48, 1044-1053.	1.3	37
36	Morphological and Functional Characteristics of Three-Dimensional Engineered Bone-Ligament-Bone Constructs Following Implantation. Journal of Biomechanical Engineering, 2009, 131, 101017.	0.6	35

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37	Digital image correlation-aided mechanical characterization of the anteromedial and posterolateral bundles of the anterior cruciate ligament. Acta Biomaterialia, 2017, 56, 44-57.	4.1	35
38	TGF-Î²1 enhances contractility in engineered skeletal muscle. Journal of Tissue Engineering and Regenerative Medicine, 2013, 7, 562-571.	1.3	33
39	Highly Ductile Multilayered Films by Layer-by-Layer Assembly of Oppositely Charged Polyurethanes for Biomedical Applications. Langmuir, 2009, 25, 14093-14099.	1.6	32
40	Heterogeneity of tibial plateau cartilage in response to a physiological compressive strain rate. Journal of Orthopaedic Research, 2013, 31, 370-375.	1.2	32
41	Denervation does not change the ratio of collagen I and collagen III mRNA in the extracellular matrix of muscle. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2007, 292, R983-R987.	0.9	31
42	Finite element simulations of orthotropic hyperelasticity. Finite Elements in Analysis and Design, 2002, 38, 983-998.	1.7	30
43	Three-Dimensional Engineered Bone from Bone Marrow Stromal Cells and Their Autogenous Extracellular Matrix. Tissue Engineering - Part A, 2009, 15, 187-195.	1.6	30
44	Implantation increases tensile strength and collagen content of self-assembled tendon constructs. Journal of Applied Physiology, 2010, 108, 875-881.	1.2	29
45	An error-minimizing approach to inverse Langevin approximations. Rheologica Acta, 2015, 54, 887-902.	1.1	28
46	Rate dependent finite strain constitutive modeling of polyurethane and polyurethaneâ€“clay nanocomposites. International Journal of Solids and Structures, 2015, 54, 147-155.	1.3	27
47	Allogeneic Versus Autologous Derived Cell Sources for Use in Engineered Bone-Ligament-Bone Grafts in Sheep Anterior Cruciate Ligament Repair. Tissue Engineering - Part A, 2015, 21, 1047-1054.	1.6	26
48	Tissue-Engineered Tendon for Enthesis Regeneration in a Rat Rotator Cuff Model. BioResearch Open Access, 2017, 6, 47-57.	2.6	25
49	An investigation into the three-dimensional stress-birefringence-strain relationship in elastomers. Polymer Engineering and Science, 1995, 35, 395-402.	1.5	23
50	Constitutive Modeling of a Thermoplastic Olefin Over a Broad Range of Strain Rates. Journal of Engineering Materials and Technology, Transactions of the ASME, 2006, 128, 551-558.	0.8	21
51	Development of a scaffoldless three-dimensional engineered nerve using a nerve-fibroblast co-culture. In Vitro Cellular and Developmental Biology - Animal, 2010, 46, 438-444.	0.7	20
52	Evaluation of hyperelastic models for the non-linear and non-uniform high strain-rate mechanics of tibial cartilage. Journal of Biomechanics, 2013, 46, 1604-1610.	0.9	19
53	Simultaneously high stiffness and damping in a class of wavy layered composites. Composite Structures, 2013, 101, 104-110.	3.1	19
54	Full-volume displacement mapping of anterior cruciate ligament bundles with dualMRI. Extreme Mechanics Letters, 2018, 19, 7-14.	2.0	19

#	ARTICLE	IF	CITATIONS
55	Nonisothermal model of glass fiber drawing stability. Rheologica Acta, 1996, 35, 584-596.	1.1	18
56	Fresh Versus Frozen Engineered Boneâ€"Ligamentâ€"Bone Grafts for Sheep Anterior Cruciate Ligament Repair. Tissue Engineering - Part C: Methods, 2015, 21, 548-556.	1.1	18
57	Hyperelastic modeling of location-dependent human distal femoral cartilage mechanics. International Journal of Non-Linear Mechanics, 2015, 68, 146-156.	1.4	18
58	A study on the role of articular cartilage soft tissue constitutive form in models of whole knee biomechanics. Biomechanics and Modeling in Mechanobiology, 2017, 16, 117-138.	1.4	18
59	Constitutive modeling of the anterior cruciate ligament bundles and patellar tendon with full-field methods. Journal of the Mechanics and Physics of Solids, 2021, 156, 104577.	2.3	16
60	The Role of the Non-Collagenous Extracellular Matrix in Tendon and Ligament Mechanical Behavior: A Review. Journal of Biomechanical Engineering, 2022, 144, .	0.6	14
61	Femoral entheseal shape and attachment angle as potential risk factors for anterior cruciate ligament injury. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 88, 313-321.	1.5	13
62	The effect of football helmet facemasks on impact behavior during linear drop tests. Journal of Biomechanics, 2018, 79, 227-231.	0.9	12
63	The effect of implantation on scaffoldless three-dimensional engineered bone constructs. In Vitro Cellular and Developmental Biology - Animal, 2009, 45, 512-522.	0.7	11
64	Characterization and Constitutive Modeling of a Plasticized Poly(vinyl Chloride) for a Broad Range of Strain Rates. Rubber Chemistry and Technology, 2001, 74, 560-573.	0.6	10
65	Fresh and Frozen Tissue-Engineered Three-Dimensional Boneâ€"Ligamentâ€"Bone Constructs for Sheep Anterior Cruciate Ligament Repair Following a 2-Year Implantation. BioResearch Open Access, 2016, 5, 289-298.	2.6	10
66	A constitutive model for finite deformation response of layered polyurethane-montmorillonite nanocomposites. Mechanics of Materials, 2011, 43, 186-193.	1.7	9
67	Generalized error-minimizing, rational inverse Langevin approximations. Mathematics and Mechanics of Solids, 2019, 24, 1630-1647.	1.5	8
68	Investigation of Fiber-Driven Mechanical Behavior of Human and Porcine Bladder Tissue Tested Under Identical Conditions. Journal of Biomechanical Engineering, 2021, 143, .	0.6	8
69	Evaluating continuum level descriptions of the medial collateral ligament. International Journal of Solids and Structures, 2018, 138, 245-263.	1.3	7
70	The Effect of Articular Cartilage Focal Defect Size and Location in Whole Knee Biomechanics Models. Journal of Biomechanical Engineering, 2020, 142, .	0.6	7
71	Robust high resolution strain imaging by alternating pulsed field gradient stimulated echo imaging (APGSTEi) at 7â€‰Tesla. Journal of Magnetic Resonance, 2020, 310, 106620.	1.2	7
72	Fiber splay precludes the direct identification of ligament material properties: Implications for ACL graft selection. Journal of Biomechanics, 2020, 113, 110104.	0.9	7

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73	Shock wave impact on the viability of MDA-MB-231 cells. PLoS ONE, 2020, 15, e0234138.	1.1	7
74	A Micromechanical Viscoelastic Constitutive Model for Native and Engineered Anterior Cruciate Ligaments. , 2013, , 351-363.		6
75	Elastic-Viscoplastic Deformation of Polymers. , 2001, , 398-407.		3
76	A Particle Size-Shape-Dependent Three-Phase Two-Step Mori-Tanaka Method for Studying the Interphase of Polymer/Clay Nanocomposites. , 2008, , .		3
77	A Non-Local Visco-Plastic Model With Strain Laplacian Effects and Interphase Effects for Simulating the Stiffness and Yield Strength of a Class of Polymer Nanocomposites. , 2008, , .		3
78	Effect of soft segment and clay volume fraction on rate dependent damping of polyurethane and polyurethane-clay nanocomposites. Journal of Reinforced Plastics and Composites, 2014, 33, 2129-2135.	1.6	3
79	Development of Scaffoldâ€less 3D Bone Tissue Engineered from Rat Bone Marrow Stromal Cells. FASEB Journal, 2007, 21, A1233.	0.2	2
80	Experimental Investigation of Plasticized Polyvinylchloride using the Split Hopkinson Pressure Bar Technique. , 2000, , .		0
81	Myotendinous junction protein expression in engineered muscleâ€tendon constructs. FASEB Journal, 2006, 20, A413.	0.2	0
82	Functional evaluation of engineered 3d muscleâ€tendon constructs. FASEB Journal, 2006, 20, .	0.2	0
83	Structure and Functional Evaluation of Tendon?Skeletal Muscle Constructs Engineeredin Vitro. Tissue Engineering, 2006, .	4.9	0
84	Scleraxis is expressed in adult tendons and is upregulated in response to mechanical loading. FASEB Journal, 2009, 23, 955.30.	0.2	0
85	Nonlinear Viscoelasticity of Native and Engineered Ligament and Tendon. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 423-427.	0.3	0
86	The Influence of Anterior Cruciate Ligament Matrix Mechanical Properties on Simulated Whole-Knee Biomechanics. Journal of Biomechanical Engineering, 2020, 142, .	0.6	0
87	Shock wave impact on the viability of MDA-MB-231 cells. , 2020, 15, e0234138.		0
88	Shock wave impact on the viability of MDA-MB-231 cells. , 2020, 15, e0234138.		0
89	Shock wave impact on the viability of MDA-MB-231 cells. , 2020, 15, e0234138.		0
90	Shock wave impact on the viability of MDA-MB-231 cells. , 2020, 15, e0234138.		0