Christian Hellmich

List of Publications by Year
in descending order

175 papers	6,028 citations	50244 46 h-index	82499 72 g-index
179 all docs	179 docs citations	179 times ranked	3272 citing authors

#	Article	IF	Citations
1	Stiffness and stress fluctuations in dental cement paste: a continuum micromechanics approach. Mechanics of Advanced Materials and Structures, 2023, 30, 3332-3350.	1.5	2
2	A membrane theory for circular graphene sheets, based on a hyperelastic material model for large deformations. Mechanics of Advanced Materials and Structures, 2022, 29, 651-661.	1.5	6
3	Nanoindentation-probed Oliver-Pharr half-spaces in alkali-activated slag-fly ash pastes: Multimethod identification of microelasticity and hardness. Mechanics of Advanced Materials and Structures, 2022, 29, 4878-4889.	1.5	20
4	Stress average rule derived through the principle of virtual power. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2022, 102, .	0.9	4
5	Data-driven analytical mechanics of aging viscoelastic shotcrete tunnel shells. Acta Mechanica, 2022, 233, 2989-3019.	1.1	2
6	Hierarchical Biomechanics: Concepts, Bone as Prominent Example, and Perspectives Beyond. Applied Mechanics Reviews, 2022, 74, .	4.5	6
7	Sequential 1D/2D Finite Element analyses of tramway rails under bending and restrained torsion, based on the principle of virtual power. Mechanics of Advanced Materials and Structures, 2021, 28, 1147-1169.	1.5	2
8	Jaws of Platynereis dumerilii: Miniature Biogenic Structures with Hardness Properties Similar to Those of Crystalline Metals. Jom, 2021, 73, 2390.	0.9	3
9	Fiber Rearrangement and Matrix Compression in Soft Tissues: Multiscale Hypoelasticity and Application to Tendon. Frontiers in Bioengineering and Biotechnology, 2021, 9, 725047.	2.0	6
10	Micromechanics of dental cement paste. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 124, 104863.	1.5	6
11	Toward â€œhereditary epidemiologyâ€: A temporal Boltzmann approach to COVID-19 fatality trends. Applied Physics Reviews, 2021, 8, .	5.5	3
12	The viscoelastic behaviour of material phases in fired clay identified by means of grid nanoindentation. Construction and Building Materials, 2020, 231, 117066.	3.2	12
13	Multiscale poro-elasticity of densifying calcium-silicate hydrates in cement paste: An experimentally validated continuum micromechanics approach. International Journal of Engineering Science, 2020, 147, 103196.	2.7	27
14	Energy landscapes of graphene under general deformations: DFT-to-hyperelasticity upscaling. International Journal of Engineering Science, 2020, 154, 103342.	2.7	9
15	150 years reliable railway tunnels â€“ Extending the hybrid method for the longâ€term safety assessment. Geomechanik Und Tunnelbau, 2020, 13, 538-546.	0.2	3
16	A principle of virtual power-based beam model reveals discontinuities in elastic support as potential sources of stress peaks in tramway rails. Acta Mechanica, 2020, 231, 4641-4663.	1.1	3
17	EDX/XRD-based identification of micrometer-sized domains in scanning electron micrographs of fired clay. Materials and Structures/Materiaux Et Constructions, 2020, 53, 1.	1.3	8
18	A multi-scale material model for the estimation of the transversely isotropic thermal conductivity tensor of fired clay bricks. Journal of the European Ceramic Society, 2020, 40, 6200-6217.	2.8	16

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19	Mathematical modeling of COVID-19 fatality trends: Death kinetics law versus infection-to-death delay rule. Chaos, Solitons and Fractals, 2020, 136, 109891.	2.5	17
20	A new approach to the mechanics of DNA: Atoms-to-beam homogenization. Journal of the Mechanics and Physics of Solids, 2020, 143, 104040.	2.3	8
21	â€œVariancesâ€•and â€œin-variancesâ€•in hierarchical porosity and composition, across femoral tissues from cow, horse, ostrich, emu, pig, rabbit, and frog. Materials Science and Engineering C, 2020, 117, 111234.	3.8	2
22	Multiscale and multitechnique investigation of the elasticity of grooved rail steel. Construction and Building Materials, 2020, 238, 117768.	3.2	5
23	Effect of boron incorporation on the bioactivity, structure, and mechanical properties of ordered mesoporous bioactive glasses. Journal of Materials Chemistry B, 2020, 8, 1456-1465.	2.9	32
24	Multiscale Bone Mechanobiology. , 2019, , 167-179.		0
25	Rigorous amendment of Vlasov's theory for thin elastic plates on elastic Winkler foundations, based on the Principle of Virtual Power. European Journal of Mechanics, A/Solids, 2019, 73, 449-482.	2.1	25
26	Shear stress concentrations in tramway rails: Results from beam theory-based cross-sectional 2D Finite Element analyses. Engineering Structures, 2019, 195, 579-590.	2.6	3
27	Concrete pavements subjected to hail showers: A semi-analytical thermoelastic multiscale analysis. Engineering Structures, 2019, 200, 109677.	2.6	9
28	Mandibular biomechanics after marginal resection: Correspondences of simulated volumetric strain and skeletal resorption. Journal of Biomechanics, 2019, 95, 109320.	0.9	9
29	A continuum micromechanics approach to the elasticity and strength of planar fiber networks: Theory and application to paper sheets. European Journal of Mechanics, A/Solids, 2019, 75, 516-531.	2.1	7
30	X-ray physics-based CT-to-composition conversion applied to a tissue engineering scaffold, enabling multiscale simulation of its elastic behavior. Materials Science and Engineering C, 2019, 95, 389-396.	3.8	8
31	Micro-CT-based identification of double porosity in fired clay ceramics. Journal of Materials Science, 2018, 53, 9411-9428.	1.7	19
32	A mathematical multiscale model of bone remodeling, accounting for pore space-specific mechanosensation. Bone, 2018, 107, 208-221.	1.4	65
33	Hydrate failure in ITZ governs concrete strength: A micro-to-macro validated engineering mechanics model. Cement and Concrete Research, 2018, 103, 77-94.	4.6	91
34	Bone Ultrastructure as Composite of Aligned Mineralized Collagen Fibrils Embedded Into a Porous Polycrystalline Matrix: Confirmation by Computational Electrodynamics. Frontiers in Physics, 2018, 6, .	1.0	9
35	Nonâ€affine fiber kinematics in arterial mechanics: a continuum micromechanical investigation. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 2101-2121.	0.9	26
36	May reversible water uptake/release by hydrates explain the thermal expansion of cement paste? â€" Arguments from an inverse multiscale analysis. Cement and Concrete Research, 2018, 113, 13-26.	4.6	34

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37	Modal analysis of nanoindentation data, confirming that reduced bone turnover may cause increased tissue mineralization/elasticity. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 84, 217-224.	1.5	6
38	Computational Methods for the Predictive Design of Bone Tissue Engineering Scaffolds. , 2018, , 107-129.		0
39	Surface treatments for boriding of Ti6Al4V alloy in view of applications as a biomaterial. Tribology International, 2018, 126, 21-28.	3.0	20
40	Review of â€œUniversalâ€•Rules Governing Bone Composition, Organization, and Elasticity Across Organizational Hierarchies. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2018, , 175-229.	0.3	8
41	Computational Methods for the Predictive Design of Bone Tissue Engineering Scaffolds. , 2018, , 1-23.		0
42	Micromechanics of elastoplastic porous polycrystals: Theory, algorithm, and application to osteonal bone. International Journal of Plasticity, 2017, 91, 238-267.	4.1	42
43	Self-Consistent Channel Approach for Upscaling Chloride Diffusivity in Cement Pastes. Transport in Porous Media, 2017, 118, 495-518.	1.2	25
44	A hybrid analysis method for displacement-monitored segmented circular tunnel rings. Engineering Structures, 2017, 148, 839-856.	2.6	41
45	How Water-Aggregate Interactions Affect Concrete Creep: Multiscale Analysis. Journal of Nanomechanics & Micromechanics, 2017, 7, .	1.4	23
46	Compressibility of unvulcanized natural and EPDM rubber: New experimental protocol and data evaluation in the framework of large strain elasticity theory. Polymer, 2017, 123, 334-344.	1.8	13
47	Poro-Micromechanics of Materials with Complex Morphologiesâ€”A Review, and Recent Results for Concrete, Bone, and Paper. , 2017, , .		0
48	Patient-specific design of tissue engineering scaffolds, based on mathematical modeling. , 2017, , 391-406.		2
49	Multiscale Mathematical Modeling in Dental Tissue Engineering: Toward Computer-Aided Design of a Regenerative System Based on Hydroxyapatite Granules, Focussing on Early and Mid-Term Stiffness Recovery. Frontiers in Physiology, 2016, 7, 383.	1.3	8
50	Patientâ€specific fracture risk assessment of vertebrae: A multiscale approach coupling Xâ€ray physics and continuum micromechanics. International Journal for Numerical Methods in Biomedical Engineering, 2016, 32, e02760.	1.0	30
51	A New Nanoindentation Protocol for Identifying the Elasticity of Undamaged Extracellular Bone Tissue. MRS Advances, 2016, 1, 693-704.	0.5	8
52	Coupling multiscale X-ray physics and micromechanics for bone tissue composition and elasticity determination from micro-CT data, by example of femora from OVX and sham rats. International Journal for Computational Methods in Engineering Science and Mechanics, 2016, 17, 222-244.	1.4	7
53	Combined ultrasonic-mechanical characterization of orthotropic elastic properties of an unrefined bagasse fiber-polypropylene composite. Composites Part B: Engineering, 2016, 95, 96-104.	5.9	10
54	Discussion: Fracture safety of double-porous hydroxyapatite biomaterials. Bioinspired, Biomimetic and Nanobiomaterials, 2016, 5, 176-177.	0.7	3

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55	Densification of C-S-H is mainly driven by available precipitation space, as quantified through an analytical cement hydration model based on NMR data. Cement and Concrete Research, 2016, 88, 170-183.	4.6	54
56	Fracture safety of double-porous hydroxyapatite biomaterials. Bioinspired, Biomimetic and Nanobiomaterials, 2016, 5, 24-36.	0.7	7
57	Downscaling Based Identification of Nonaging Power-Law Creep of Cement Hydrates. Journal of Engineering Mechanics - ASCE, 2016, 142, .	1.6	50
58	Strength increase during ceramic biomaterial-induced bone regeneration: a micromechanical study. International Journal of Fracture, 2016, 202, 217-235.	1.1	14
59	Poromicromechanics reveals that physiological bone strains induce osteocyte-stimulating lacunar pressure. Biomechanics and Modeling in Mechanobiology, 2016, 15, 9-28.	1.4	71
60	How interface size, density, and viscosity affect creep and relaxation functions of matrix-interface composites: a micromechanical study. Acta Mechanica, 2016, 227, 229-252.	1.1	14
61	Elastic and creep properties of young cement paste, as determined from hourly repeated minute-long quasi-static tests. Cement and Concrete Research, 2016, 82, 36-49.	4.6	103
62	The fiber reorientation problem revisited in the context of Eshelbian micromechanics: theory and computations. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 39-42.	0.2	4
63	Mechanics of organic-inorganic biointerfacesâ€”Implications for strength and creep properties. MRS Bulletin, 2015, 40, 349-358.	1.7	31
64	Micromechanics of Hydrating Cement Pastes Considering C-S-H Gel Densification. , 2015, , .		0
65	X-ray physics- and bone composition-based estimation of thickness characteristics from clinical mandibular radiographs. Computerized Medical Imaging and Graphics, 2015, 45, 36-46.	3.5	5
66	Multiscale mechanics of biological, bioinspired, and biomedical materials. MRS Bulletin, 2015, 40, 309-313.	1.7	12
67	Extracellular bone matrix exhibits hardening elastoplasticity and more than double cortical strength: Evidence from homogeneous compression of non-tapered single micron-sized pillars welded to a rigid substrate. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 52, 51-62.	1.5	60
68	Is trabecular bone permeability governed by molecular ordering-induced fluid viscosity gain? Arguments from re-evaluation of experimental data in the framework of homogenization theory. Journal of Theoretical Biology, 2015, 365, 433-444.	0.8	35
69	Micro-poro-elasticity of baghdadite-based bone tissue engineering scaffolds: A unifying approach based on ultrasonics, nanoindentation, and homogenization theory. Materials Science and Engineering C, 2015, 46, 553-564.	3.8	35
70	"Anatomical simulation" of the biomechanical behavior of the human mandible. International Journal of Computerized Dentistry, 2015, 18, 333-42.	0.2	3
71	Layered water in crystal interfaces as source for bone viscoelasticity: arguments from a multiscale approach. Computer Methods in Biomechanics and Biomedical Engineering, 2014, 17, 48-63.	0.9	52
72	Micromechanics of ITZâ€“Aggregate Interaction in Concrete Part I: Stress Concentration. Journal of the American Ceramic Society, 2014, 97, 535-542.	1.9	71

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73	Micromechanics of <scp>ITZ</scp>â€Aggregate Interaction in Concrete Part <scp>II</scp>: Strength Upscaling. Journal of the American Ceramic Society, 2014, 97, 543-551.	1.9	58
74	Quantitative intravoxel analysis of microCT-scanned resorbing ceramic biomaterials â€“ Perspectives for computer-aided biomaterial design. Journal of Materials Research, 2014, 29, 2757-2772.	1.2	17
75	Viscous interfaces as source for material creep: A continuum micromechanics approach. European Journal of Mechanics, A/Solids, 2014, 45, 41-58.	2.1	46
76	A multiscale poromicromechanical approach to wave propagation and attenuation in bone. Ultrasonics, 2014, 54, 1251-1269.	2.1	42
77	Ultrasonic elasticity determination of 45S5 Bioglass Â® -based scaffolds: Influence of polymer coating and crosslinking treatment. Journal of the Mechanical Behavior of Biomedical Materials, 2014, 40, 85-94.	1.5	22
78	A multiscale analytical approach for bone remodeling simulations: Linking scales from collagen to trabeculae. Bone, 2014, 64, 303-313.	1.4	33
79	The role of endplate poromechanical properties on the nutrient availability in the intervertebral disc. Osteoarthritis and Cartilage, 2014, 22, 1053-1060.	0.6	63
80	Consistent quasistatic and acoustic elasticity determination of polyâ€<scp>L</scp>â€lactideâ€based rapidâ€prototyped tissue engineering scaffolds. Journal of Biomedical Materials Research - Part A, 2013, 101A, 138-144.	2.1	26
81	Modeling Ground-Shell Contact Forces in NATM Tunneling Based on Three-Dimensional Displacement Measurements. Journal of Geotechnical and Geoenvironmental Engineering - ASCE, 2013, 139, 444-457.	1.5	13
82	Coupling systems biology with multiscale mechanics, for computer simulations of bone remodeling. Computer Methods in Applied Mechanics and Engineering, 2013, 254, 181-196.	3.4	92
83	Fibrillar structure and elasticity of hydrating collagen: A quantitative multiscale approach. Journal of Theoretical Biology, 2013, 317, 384-393.	0.8	48
84	Ultrasonic contact pulse transmission for elastic wave velocity and stiffness determination: Influence of specimen geometry and porosity. Engineering Structures, 2013, 47, 115-133.	2.6	62
85	Intravoxel bone micromechanics for microCT-based finite element simulations. Journal of Biomechanics, 2013, 46, 2710-2721.	0.9	58
86	Mineralization-driven bone tissue evolution follows from fluid-to-solid phase transformations in closed thermodynamic systems. Journal of Theoretical Biology, 2013, 335, 185-197.	0.8	18
87	The influence of bone surface availability in bone remodellingâ€"A mathematical model including coupled geometrical and biomechanical regulations of bone cells. Engineering Structures, 2013, 47, 134-147.	2.6	63
88	Modeling Ground-Shell Contact Forces in NATM Tunneling, Based on 3D Displacement Measurements. Springer Series in Geomechanics and Geoengineering, 2013, , 293-296.	0.0	1
89	Effect of gelâ€“space ratio and microstructure on strength of hydrating cementitious materials: An engineering micromechanics approach. Cement and Concrete Research, 2013, 45, 55-68.	4.6	106
90	Strength Evolution of Hydrating Cement Pastes: the Counteracting Effects of Capillary Porosity and Unhydrated Clinker Reinforcements. , 2013, , .		1

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91	The Counteracting Effects of Capillary Porosity and of Unhydrated Clinker Grains on the Macroscopic Strength of Hydrating Cement Pasteâ€“A Multiscale Model. , 2013, , .		6
92	Micromechanics-Derived Scaling Relations for Poroelasticity and Strength of Brittle Porous Polycrystals. Journal of Applied Mechanics, Transactions ASME, 2013, 80, .	1.1	41
93	How do Porous Interfacial Transition Zones (ITZ) Trigger Elastic Limits of Concrete? - Micromechanics of ITZ Failure and ITZ-Aggregate Separation. , 2013, , .		0
94	A Multiscale Poromicromechanical Approach to Wave Propagation and Attenuation in Bone. , 2013, , .		0
95	Poromechanical Stimulation of Bone Remodeling: A Continuum Micromechanics-Based Mathematical Model and Experimental Validation. , 2013, , .		3
96	Liquid Crystal Interface Micromechanics of Creeping (Geo- and Bio-) Materials. , 2013, , .		0
97	Extending 2D Mandibular Radiographs into 3D, based on the X-Ray Physics of Composite Materials. , 2013, , .		0
98	Micromechanics of Viscous Interfaces in Hydrated (Bio-)Materials. , 2013, , .		0
99	Micro CT-based multiscale elasticity of double-porous (pre-cracked) hydroxyapatite granules for regenerative medicine. Journal of Biomechanics, 2012, 45, 1068-1075.	0.9	32
100	Quantification of structural and material failure mechanisms across different length scales: from instability to brittle-ductile transitions. Acta Mechanica, 2012, 223, 1937-1957.	1.1	3
101	Anisotropic tissue elasticity in human lumbar vertebra, by means of a coupled ultrasound-micromechanics approach. Materials Letters, 2012, 78, 154-158.	1.3	27
102	Influence of shotcrete composition on loadâ€level estimation in NATMâ€tunnel shells: Micromechanicsâ€based sensitivity analyses. International Journal for Numerical and Analytical Methods in Geomechanics, 2012, 36, 1151-1180.	1.7	15
103	Computational Simulation of the Mechanobiological Regulation of Bone Remodeling by Means of a Coupled Systems Biology-Micromechanical Approach. , 2012, , .		2
104	From Micro-CT to Multiscale Mechanics of Double-Porous Hydroxyapatite Granules for Regenerative Medicine. , 2012, , .		0
105	Consistent Quasi-Static and Ultrasonic Elasticity Determination of PLLA-based Rapid-Prototyped Tissue Engineering Scaffolds. , 2012, , .		0
106	X-Ray-Electron Interactions in Fibrillar Bone Ultrastructure: A Quantitative Electrodynamics Approach. , 2012, , .		0
107	Layered Water in Crystal Interfaces as Source for Bone Viscoelasticity: Arguments from a Multiscale Approach. , 2012, , .		0
108	Multiscale Homogenization Theory: An Analysis Tool for Revealing Mechanical Design Principles in Bone and Bone Replacement Materials. Biological and Medical Physics Series, 2011, , 81-103.	0.3	5

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109	Bone fibrillogenesis and mineralization: Quantitative analysis and implications for tissue elasticity. Journal of Theoretical Biology, 2011, 287, 115-130.	0.8	55
110	The poroelastic role of water in cell walls of the hierarchical composite â€œsoftwoodâ€• Acta Mechanica, 2011, 217, 75-100.	1.1	40
111	Upscaling quasi-brittle strength of cement paste and mortar: A multi-scale engineering mechanics model. Cement and Concrete Research, 2011, 41, 467-476.	4.6	233
112	Experimental poromechanics of trabecular bone strength: Role of Terzaghi's effective stress and of tissue level stress fluctuations. Journal of Biomechanics, 2011, 44, 501-508.	0.9	17
113	Computational Multiscale Model for NATM Tunnels: Micromechanics-Supported Hybrid Analyses. Lecture Notes in Applied and Computational Mechanics, 2011, , 305-328.	2.0	1
114	STRENGTH OF GEOMATERIALS: MULTISCALE THEORIES AND EXPERIMENTS AT APPROPRIATE PROBLEM-DEPENDENT LENGTH SCALES. Springer Series in Geomechanics and Geoengineering, 2011, , 49-52.	0.0	1
115	Porosity-Dependent Elasticity and Strength of Ceramic Bone Biomaterials: Micromechanics-based Assessment of Power Functions. , 2011, , .		0
116	The role of disc-type crystal shape for micromechanical predictions of elasticity and strength of hydroxyapatite biomaterials. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 1913-1935.	1.6	31
117	Characterization of the deformation behavior of intermediate porosity interconnected Ti foams using micro-computed tomography and direct finite element modeling. Acta Biomaterialia, 2010, 6, 2342-2351.	4.1	69
118	Micromechanical Explanation of Elasticity and Strength of Gypsum: From Elongated Anisotropic Crystals to Isotropic Porous Polycrystals. Journal of Engineering Mechanics - ASCE, 2010, 136, 239-253.	1.6	54
119	Estimation of Influence Tensors for Eigenstressed Multiphase Elastic Media with Nonaligned Inclusion Phases of Arbitrary Ellipsoidal Shape. Journal of Engineering Mechanics - ASCE, 2010, 136, 1043-1053.	1.6	54
120	Hierarchical Biomaterials Mechanics of Bone and Bone Substitutes. Materials Research Society Symposia Proceedings, 2009, 1239, 1.	0.1	0
121	Mechanics of Biological and Bioinspired Materials and Structures. Journal of Engineering Mechanics - ASCE, 2009, 135, 365-366.	1.6	2
122	Multiscale Elasticity of Tissue Engineering Scaffolds with Tissue-Engineered Bone: A Continuum Micromechanics Approach. Journal of Engineering Mechanics - ASCE, 2009, 135, 395-412.	1.6	17
123	Multiporoelasticity of Hierarchically Structured Materials: Micromechanical Foundations and Application to Bone. Journal of Engineering Mechanics - ASCE, 2009, 135, 382-394.	1.6	43
124	Mechanical behavior of hydroxyapatite biomaterials: An experimentally validated micromechanical model for elasticity and strength. Journal of Biomedical Materials Research - Part A, 2009, 88A, 149-161.	2.1	92
125	Spherical and acicular representation of hydrates in a micromechanical model for cement paste: prediction of early-age elasticity and strength. Acta Mechanica, 2009, 203, 137-162.	1.1	120
126	Micromechanics of bone tissue-engineering scaffolds, based on resolution error-cleared computer tomography. Biomaterials, 2009, 30, 2411-2419.	5.7	61

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127	Finite Volume model for diffusion- and activation-controlled pitting corrosion of stainless steel. Computer Methods in Applied Mechanics and Engineering, 2009, 198, 2898-2910.	3.4	90
128	Computational mechanics of materials and structures. Engineering Structures, 2009, 31, 1288-1297.	2.6	6
129	Ultrasonic Characterisation of Porous Biomaterials Across Different Frequencies. Strain, 2009, 45, 34-44.	1.4	38
130	Ductile sliding between mineral crystals followed by rupture of collagen crosslinks: Experimentally supported micromechanical explanation of bone strength. Journal of Theoretical Biology, 2009, 260, 230-252.	0.8	174
131	Continuum Microviscoelasticity Model for Aging Basic Creep of Early-Age Concrete. Journal of Engineering Mechanics - ASCE, 2009, 135, 307-323.	1.6	103
132	From micron-sized needle-shaped hydrates to meter-sized shotcrete tunnel shells: micromechanical upscaling of stiffness and strength of hydrating shotcrete. Acta Geotechnica, 2008, 3, 273-294.	2.9	75
133	Micromechanics-Based Conversion of CT Data into Anisotropic Elasticity Tensors, Applied to FE Simulations of a Mandible. Annals of Biomedical Engineering, 2008, 36, 108-122.	1.3	108
134	Semi-probabilistic design of rockfall protection layers. Computational Mechanics, 2008, 42, 327-336.	2.2	4
135	Acoustical and Poromechanical Characterisation of Titanium Scaffolds for Biomedical Applications. Strain, 2008, 44, 153-163.	1.4	16
136	An Experimentally Validated Micromechanical Model for Elasticity and Strength of Hydroxyapatite Biomaterials. Materials Research Society Symposia Proceedings, 2008, 1132, 1.	0.1	0
137	Micromechanics-based conversion of CT data into anisotropic elasticity tensors, applied to FE simulations of a mandible. Materials Research Society Symposia Proceedings, 2008, 1132, 1.	0.1	0
138	Subject-Specific p-FE Analysis of the Proximal Femur Utilizing Micromechanics-Based Material Properties. International Journal for Multiscale Computational Engineering, 2008, 6, 483-498.	0.8	25
139	Micromechanical modeling of solid-type and plate-type deformation patterns within softwood materials. A review and an improved approach. Holzforschung, 2007, 61, 343-351.	0.9	73
140	Stable pitting corrosion of stainless steel as diffusion-controlled dissolution process with a sharp moving electrode boundary. Corrosion Science, 2007, 49, 319-346.	3.0	127
141	A combined fracture-micromechanics model for tensile strain-softening in brittle materials, based on propagation of interacting microcracks. International Journal for Numerical and Analytical Methods in Geomechanics, 2007, 31, 111-132.	1.7	48
142	Micromechanics of crystal interfaces in polycrystalline solid phases of porous media: fundamentals and application to strength of hydroxyapatite biomaterials. Journal of Materials Science, 2007, 42, 8824-8837.	1.7	42
143	â€˜Universalâ€™ microstructural patterns in cortical and trabecular, extracellular and extravascular bone materials: Micromechanics-based prediction of anisotropic elasticity. Journal of Theoretical Biology, 2007, 244, 597-620.	0.8	281
144	Entropy and Material Instability in the Quasi-Static Mechanics of Granular Media. , 2007, , 245-276.		3

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145	Porous polycrystals built up by uniformly and axisymmetrically oriented needles: homogenization of elastic properties. Comptes Rendus - Mecanique, 2006, 334, 151-157.	2.1	62
146	Loading of soil-covered oil and gas pipelines due to adverse soil settlements â€“ Protection against thermal dilatation-induced wear, involving geosynthetics. Computers and Geotechnics, 2006, 33, 371-380.	2.3	14
147	Consideration of anisotropic elasticity minimizes volumetric rather than shear deformation in human mandible. Computer Methods in Biomechanics and Biomedical Engineering, 2006, 9, 91-101.	0.9	17
148	Loading of a Gravel-Buried Steel Pipe Subjected to Rockfall. Journal of Geotechnical and Geoenvironmental Engineering - ASCE, 2006, 132, 1465-1473.	1.5	26
149	Load Carrying Mechanisms in Wood at Different Observation Scales: A Combined Random-Periodic Multistep Homogenization Scheme. Materials Research Society Symposia Proceedings, 2006, 975, 1.	0.1	0
150	Universal Microstructural Patterns in Bone: Micromechanics-Based Prediction of Anisotropic Material Behavior. Materials Research Society Symposia Proceedings, 2006, 975, 1.	0.1	1
151	Impact of rocks onto gravel Design and evaluation of experiments. International Journal of Impact Engineering, 2005, 31, 559-578.	2.4	109
152	Development and experimental validation of a continuum micromechanics model for the elasticity of wood. European Journal of Mechanics, A/Solids, 2005, 24, 1030-1053.	2.1	184
153	Assessment of Protection Systems for Buried Steel Pipelines Endangered by Rockfall. Computer-Aided Civil and Infrastructure Engineering, 2005, 20, 331-342.	6.3	11
154	Drained and Undrained Poroelastic Properties of Healthy and Pathological Bone: A Poro-Micromechanical Investigation. Transport in Porous Media, 2005, 58, 243-268.	1.2	61
155	Shotcrete Elasticity Revisited in the Framework of Continuum Micromechanics: From Submicron to Meter Level. Journal of Materials in Civil Engineering, 2005, 17, 246-256.	1.3	43
156	Microporodynamics of Bones: Prediction of the â€œFrenkelâ€“Biotâ€•Slow Compressional Wave. Journal of Engineering Mechanics - ASCE, 2005, 131, 918-927.	1.6	30
157	Microelasticity of Bone. , 2005, , 289-331.		13
158	Poro-Micromechanics of Bone: Impact Loading and Wave Propagation. Materials Research Society Symposia Proceedings, 2004, 844, 1.	0.1	1
159	Can the diverse elastic properties of trabecular and cortical bone be attributed to only a few tissue-independent phase properties and their interactions?. Biomechanics and Modeling in Mechanobiology, 2004, 2, 219-38.	1.4	117
160	Mineralâ€“collagen interactions in elasticity of bone ultrastructure â€“ a continuum micromechanics approach. European Journal of Mechanics, A/Solids, 2004, 23, 783-810.	2.1	183
161	Microscopic effects on chloride diffusivity of cement pastesâ€”a scale-transition analysis. Cement and Concrete Research, 2004, 34, 2251-2260.	4.6	125
162	Average hydroxyapatite concentration is uniform in the extracollagenous ultrastructure of mineralized tissues: evidence at the 1?10-?m scale. Biomechanics and Modeling in Mechanobiology, 2003, 2, 21-36.	1.4	75

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163	Homogenization of bone elasticity based on tissue-independent (â€˜universalâ€™) phase properties. Proceedings in Applied Mathematics and Mechanics, 2003, 3, 56-59.	0.2	2
164	Quantification of stress states in shotcrete shells. , 2003, , 225-248.		5
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