Jose A Sanz-Herrera

List of Publications by Year
in descending order

#	Article	IF	Citations
1	On scaffold designing for bone regeneration: A computational multiscale approach. Acta Biomaterialia, 2009, 5, 219-229.	4.1	183
2	The pro-angiogenic properties of multi-functional bioactive glass composite scaffolds. Biomaterials, 2011, 32, 4096-4108.	5.7	176
3	Permeability evaluation of 45S5 BioglassÂ®-based scaffolds for bone tissue engineering. Journal of Biomechanics, 2009, 42, 257-260.	0.9	117
4	In vivo measurement of skin surface strain and sub-surface layer deformation induced by natural tissue stretching. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 62, 556-569.	1.5	111
5	A mathematical model for bone tissue regeneration inside a specific type of scaffold. Biomechanics and Modeling in Mechanobiology, 2008, 7, 355-366.	1.4	84
6	On the effect of substrate curvature on cell mechanics. Biomaterials, 2009, 30, 6674-6686.	5.7	83
7	Microâ€“macro numerical modelling of bone regeneration in tissue engineering. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 3092-3107.	3.4	60
8	Modelling bioactivity and degradation of bioactive glass based tissue engineering scaffolds. International Journal of Solids and Structures, 2011, 48, 257-268.	1.3	57
9	Cell-Biomaterial Mechanical Interaction in the Framework of Tissue Engineering: Insights, Computational Modeling and Perspectives. International Journal of Molecular Sciences, 2011, 12, 8217-8244.	1.8	50
10	Polymer scaffolds with interconnected spherical pores and controlled architecture for tissue engineering: Fabrication, mechanical properties, and finite element modeling. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2007, 81B, 448-455.	1.6	49
11	A novel method for visualising and quantifying through-plane skin layer deformations. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 14, 199-207.	1.5	46
12	Scaffold microarchitecture determines internal bone directional growth structure: A numerical study. Journal of Biomechanics, 2010, 43, 2480-2486.	0.9	43
13	A mathematical approach to bone tissue engineering. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 2055-2078.	1.6	40
14	Mechanical and flow characterization of SponceramÂ® carriers: Evaluation by homogenization theory and experimental validation. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2008, 87B, 42-48.	1.6	32
15	Chemical-diffusive modeling of the self-healing behavior in concrete. International Journal of Solids and Structures, 2015, 69-70, 392-402.	1.3	31
16	A new reliability-based data-driven approach for noisy experimental data with physical constraints. Computer Methods in Applied Mechanics and Engineering, 2018, 328, 752-774.	3.4	30
17	Three-dimensional BEM for piezoelectric fracture analysis. Engineering Analysis With Boundary Elements, 2005, 29, 586-596.	2.0	25
18	TFMLAB: A MATLAB toolbox for 4D traction force microscopy. SoftwareX, 2021, 15, 100723.	1.2	22

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19	In silico design of magnesium implants: Macroscopic modeling. Journal of the Mechanical Behavior of Biomedical Materials, 2018, 79, 181-188.	1.5	18
20	Mathematical formulation and parametric analysis of in vitro cell models in microfluidic devices: application to different stages of glioblastoma evolution. Scientific Reports, 2020, 10, 21193.	1.6	17
21	Structural optimization of 3D-printed patient-specific ceramic scaffolds for in vivo bone regeneration in load-bearing defects. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 121, 104613.	1.5	16
22	In silico dynamic characterization of the femur: Physiological versus mechanical boundary conditions. Medical Engineering and Physics, 2018, 58, 80-85.	0.8	14
23	A multiscale data-driven approach for bone tissue biomechanics. Computer Methods in Applied Mechanics and Engineering, 2020, 368, 113136.	3.4	14
24	Inverse method based on 3D nonlinear physically constrained minimisation in the framework of traction force microscopy. Soft Matter, 2021, 17, 10210-10222.	1.2	14
25	Fast multipole method applied to 3-D frequency domain elastodynamics. Engineering Analysis With Boundary Elements, 2008, 32, 787-795.	2.0	13
26	Analysis of cracked piezoelectric solids by a mixed three-dimensional BE approach. Engineering Analysis With Boundary Elements, 2009, 33, 271-282.	2.0	13
27	Advanced in silico validation framework for three-dimensional traction force microscopy and application to an in vitro model of sprouting angiogenesis. Acta Biomaterialia, 2021, 126, 326-338.	4.1	13
28	A PGD-based multiscale formulation for non-linear solid mechanics under small deformations. Computer Methods in Applied Mechanics and Engineering, 2016, 305, 806-826.	3.4	12
29	An unsupervised data completion method for physically-based data-driven models. Computer Methods in Applied Mechanics and Engineering, 2019, 344, 120-143.	3.4	12
30	A rotating bed system bioreactor enables cultivation of primary osteoblasts on wellâ€characterized sponceramÂ® regarding structural and flow properties. Biotechnology Progress, 2010, 26, 671-678.	1.3	11
31	Prediction and identification of physical systems by means of Physically-Guided Neural Networks with meaningful internal layers. Computer Methods in Applied Mechanics and Engineering, 2021, 381, 113816.	3.4	11
32	Novel 3D biomaterials for tissue engineering based on collagen and macroporous ceramics. Materialwissenschaft Und Werkstofftechnik, 2009, 40, 54-60.	0.5	9
33	Numerical investigation of the coupled mechanical behavior of self-healing materials under cyclic loading. International Journal of Solids and Structures, 2019, 160, 232-246.	1.3	9
34	Multiscale simulation of particle-reinforced elasticâ€"plastic adhesives at small strains. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 2211-2222.	3.4	8
35	Continuum Modeling and Simulation in Bone Tissue Engineering. Applied Sciences (Switzerland), 2019, 9, 3674.	1.3	8
36	Computational Multiscale Solvers for Continuum Approaches. Materials, 2019, 12, 691.	1.3	7

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37	Mechanical Influence of Surrounding Soft Tissue on Bone Regeneration Processes: A Bone Lengthening Study. Annals of Biomedical Engineering, 2021, 49, 642-652.	1.3	7
38	Data-Driven Computational Simulation in Bone Mechanics. Annals of Biomedical Engineering, 2021, 49, 407-419.	1.3	6
39	Multiscale Characterisation of Cortical Bone Tissue. Applied Sciences (Switzerland), 2019, 9, 5228.	1.3	4
40	Simulation of Bone Remodelling and Bone Ingrowth within Scaffolds. Key Engineering Materials, 2008, 377, 225-273.	0.4	3
41	Understanding glioblastoma invasion using physically-guided neural networks with internal variables. PLoS Computational Biology, 2022, 18, e1010019.	1.5	3
42	Model of dissolution in the framework of tissue engineering and drug delivery. Biomechanics and Modeling in Mechanobiology, 2018, 17, 1331-1341.	1.4	2
43	Special Issue on â€œBiomaterials for Bone Tissue Engineeringâ€• Applied Sciences (Switzerland), 2020, 10, 2660.	1.3	2
44	Modelling bone tissue engineering. Towards an understanding of the role of scaffold design parameters. Computational Methods in Applied Sciences (Springer), 2011, , 71-90.	0.1	2
45	Cellâ€“Material Communication: Mechanosensing Modelling for Design in Tissue Engineering. Studies in Mechanobiology, Tissue Engineering and Biomaterials, 2010, , 451-462.	0.7	1
46	Analysis of the Parametric Correlation in Mathematical Modeling of In Vitro Glioblastoma Evolution Using Copulas. Mathematics, 2021, 9, 27.	1.1	1
47	Bone-Cement Interface Micromechanical Model under Cyclic Loading. Key Engineering Materials, 0, 488-489, 391-394.	0.4	0