Robert Cimrman

List of Publications by Year
in descending order

36 papers	19,824 citations	840776 11 h-index	454955 30 g-index
38 all docs	38 docs citations	38 times ranked	29152 citing authors

#	Article	IF	Citations
1	SciPy 1.0: fundamental algorithms for scientific computing in Python. Nature Methods, 2020, 17, 261-272.	19.0	17,539
2	SymPy: symbolic computing in Python. PeerJ Computer Science, 0, 3, e103.	4.5	830
3	Modeling and estimation of the cardiac electromechanical activity. Computers and Structures, 2006, 84, 1743-1759.	4.4	142
4	Cardiac function estimation from MRI using a heart model and data assimilation: Advances and difficulties. Medical Image Analysis, 2006, 10, 642-656.	11.6	132
5	Multiscale modeling of a fluid saturated medium with double porosity: Relevance to the compact bone. Journal of the Mechanics and Physics of Solids, 2012, 60, 857-881.	4.8	63
6	Multiscale finite element calculations in Python using SfePy. Advances in Computational Mathematics, 2019, 45, 1897-1921.	1.6	44
7	The contribution of vascular smooth muscle, elastin and collagen on the passive mechanics of porcine carotid arteries. Physiological Measurement, 2012, 33, 1335-1351.	2.1	33
8	Numerical modelling and homogenized constitutive law of large deforming fluid saturated heterogeneous solids. Computers and Structures, 2006, 84, 1095-1114.	4.4	24
9	Microcontinuum approach in biomechanical modeling. Mathematics and Computers in Simulation, 2003, 61, 249-260.	4.4	20
10	Two-Scale Modeling of Tissue Perfusion Problem Using Homogenization of Dual Porous Media. International Journal for Multiscale Computational Engineering, 2010, 8, 81-102.	1.2	19
11	How to asses, visualize and compare the anisotropy of linear structures reconstructed from optical sectionsâ€"A study based on histopathological quantification of human brain microvessels. Journal of Theoretical Biology, 2011, 286, 67-78.	1.7	16
12	Multiscale FE simulation of diffusion-deformation processes in homogenized dual-porous media. Mathematics and Computers in Simulation, 2012, 82, 1744-1772.	4.4	12
13	On modelling the parallel diffusion flow in deforming porous media. Mathematics and Computers in Simulation, 2007, 76, 34-43.	4.4	10
14	A preliminary study into the correlation of stiffness of the laminar junction of the equine hoof with the length density of its secondary lamellae. Equine Veterinary Journal, 2013, 45, 170-175.	1.7	10
15	Segmental differences in the orientation of smooth muscle cells in the tunica media of porcine aortae. Biomechanics and Modeling in Mechanobiology, 2015, 14, 315-332.	2.8	10
16	The histological microstructure and in vitro mechanical properties of the human female postmenopausal perineal body. Menopause, 2019, 26, 66-77.	2.0	10
17	Hierarchical homogenization of fluid saturated porous solid with multiple porosity scales. Comptes Rendus - Mecanique, 2012, 340, 688-694.	2.1	9
18	Isogeometric analysis in electronic structure calculations. Mathematics and Computers in Simulation, 2018, 145, 125-135.	4.4	9

#	Article	IF	Citations
19	Mechanical and structural properties of human aortic and pulmonary allografts do not deteriorate in the first 10Âyears of cryopreservation and storage in nitrogen. Cell and Tissue Banking, 2019, 20, 221-241.	1.1	8
20	The time has come to extend the expiration limit of cryopreserved allograft heart valves. Cell and Tissue Banking, 2021, 22, 161-184.	1.1	8
21	A mathematical model of the carp heart ventricle during the cardiac cycle. Journal of Theoretical Biology, 2015, 373, 12-25.	1.7	7
22	Convergence study of isogeometric analysis based on BÃ©zier extraction in electronic structure calculations. Applied Mathematics and Computation, 2018, 319, 138-152.	2.2	7
23	Thermal conductivity analysis of delaminated thin films by scanning thermal microscopy. Measurement Science and Technology, 2014, 25, 044022.	2.6	6
24	On identification of the arterial model parameters from experiments applicable â€œin vivoâ€• Mathematics and Computers in Simulation, 2010, 80, 1232-1245.	4.4	5
25	Microstructure Oriented Modelling of Hierarchically Perfused Porous Media for Cerebral Blood Flow Evaluation. Key Engineering Materials, 0, 465, 286-289.	0.4	5
26	Evaluating Hellmannâ€“Feynman forces within non-local pseudopotentials. Computer Physics Communications, 2020, 250, 107034.	7.5	5
27	Modelling heart tissue using a composite muscle model with blood perfusion. , 2003, , 1642-1646.		4
28	Modelling response of phononic Reissnerâ€“Mindlin plates using a spectral decomposition. Applied Mathematics and Computation, 2015, 258, 617-630.	2.2	4
29	The histological microstructure and in vitro mechanical properties of pregnant and postmenopausal ewe perineal body. Menopause, 2019, 26, 1289-1301.	2.0	4
30	Fast evaluation of finite element weak forms using python tensor contraction packages. Advances in Engineering Software, 2021, 159, 103033.	3.8	3
31	Microcracks and Mechanical Behaviour of Corio-Epidermal Junction of Equine Hoof. Key Engineering Materials, 0, 465, 342-345.	0.4	2
32	Identification of the LLDPE Constitutive Material Model for Energy Absorption in Impact Applications. Polymers, 2021, 13, 1537.	4.5	2
33	Python-based finite element code used as a universal and modular tool for electronic structure calculation. , 2013, , .		0
34	Wave propagation and band gaps in homogenized phononic plates - modelling by spectral decomposition. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 717-718.	0.2	0
35	Modelling of acoustic waves in homogenized fluid-saturated deforming poroelastic periodic structures under permanent flow. Journal of Computational and Applied Mathematics, 2021, 394, 113536.	2.0	0
36	Modelling wave dispersion in fluid saturating periodic scaffolds. Applied Mathematics and Computation, 2021, 410, 126256.	2.2	0