Heiko Andrae

List of Publications by Year
in descending order

38 papers	1,597 citations	687363 13 h-index	414414 32 g-index
38 all docs	38 docs citations	38 times ranked	1237 citing authors

#	Article	IF	Citations
1	Digital rock physics benchmarks—Part I: Imaging and segmentation. Computers and Geosciences, 2013, 50, 25-32.	4.2	493
2	Digital rock physics benchmarks—part II: Computing effective properties. Computers and Geosciences, 2013, 50, 33-43.	4.2	442
3	A new algorithm for topology optimization using a level-set method. Journal of Computational Physics, 2006, 216, 573-588.	3.8	263
4	Fiber orientation interpolation for the multiscale analysis of short fiber reinforced composite parts. Computational Mechanics, 2018, 61, 729-750.	4.0	56
5	An enhanced finite element model considering multi strengthening and damage mechanisms in particle reinforced metal matrix composites. Composite Structures, 2019, 226, 111281.	5.8	40
6	Numerical prediction of the stiffness and strength of medium density fiberboards. Mechanics of Materials, 2014, 79, 73-84.	3.2	34
7	Modelling the microstructure and computing effective elastic properties of sand core materials. International Journal of Solids and Structures, 2018, 143, 1-17.	2.7	27
8	Electro-chemo-mechanical simulation for lithium ion batteries across the scales. International Journal of Solids and Structures, 2020, 184, 24-39.	2.7	27
9	A computational multi-scale model for the stiffness degradation of short-fiber reinforced plastics subjected to fatigue loading. Computer Methods in Applied Mechanics and Engineering, 2021, 373, 113522.	6.6	27
10	Multiscale modeling of macroscopic and microscopic residual stresses in metal matrix composites using 3D realistic digital microstructure models. Composite Structures, 2016, 137, 18-32.	5.8	25
11	Additive Manufacturing of Information Carriers Based on Shape Memory Polyester Urethane. Polymers, 2019, 11, 1005.	4.5	17
12	Fast FFT based solver for rate-dependent deformations of composites and nonwovens. International Journal of Solids and Structures, 2018, 154, 33-42.	2.7	15
13	A fast numerical method of introducing the strengthening effect of residual stress and strain to tensile behavior of metal matrix composites. Journal of Materials Science and Technology, 2021, 87, 167-175.	10.7	15
14	Virtual characterization of MDF fiber network. European Journal of Wood and Wood Products, 2017, 75, 397-407.	2.9	13
15	A multiscale high-cycle fatigue-damage model for the stiffness degradation of fiber-reinforced materials based on a mixed variational framework. Computer Methods in Applied Mechanics and Engineering, 2022, 388, 114198.	6.6	13
16	Highly Shrinkable Objects as Obtained from 4D Printing. Macromolecular Materials and Engineering, 2022, 307, 2100619.	3.6	11
17	A space-time upscaling technique for modeling high-cycle fatigue-damage of short-fiber reinforced composites. Composites Science and Technology, 2022, 222, 109340.	7.8	11
18	Integration of singular integrals for the Galerkin-type boundary element method in 3D elasticity. Computer Methods in Applied Mechanics and Engineering, 1998, 157, 239-249.	6.6	10

#	Article	IF	Citations
19	Estimation of fiber orientation and fiber bundles of MDF. Materials and Structures/Materiaux Et Constructions, 2016, 49, 4003-4012.	3.1	10
20	A contact algorithm for voxel-based meshes using an implicit boundary representation. Computer Methods in Applied Mechanics and Engineering, 2019, 352, 276-299.	6.6	8
21	Voxel-based fast solution of the Lippmann-Schwinger equation with smooth material interfaces. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 579-580.	0.2	6
22	Optimal design of shape changing mechanical metamaterials at finite strains. International Journal of Solids and Structures, 2022, 252, 111769.	2.7	6
23	Structural Simulation of a Bone-Prosthesis System of the Knee Joint. Sensors, 2008, 8, 5897-5926.	3.8	5
24	The topological gradient in anisotropic elasticity with an eye towards lightweight design. Mathematical Methods in the Applied Sciences, 2014, 37, 1624-1641.	2.3	5
25	Material Characterization and Compression Molding Simulation of CF-SMC Materials in a Press Rheometry Test. Key Engineering Materials, 0, 809, 467-472.	0.4	4
26	A fast immersed interface method for the Cahn–Hilliard equation with arbitrary boundary conditions in complex domains. Computational Materials Science, 2017, 140, 22-31.	3.0	3
27	An efficient semi-implicit solver for solid electrolyte interphase growth in Li-ion batteries. Applied Mathematical Modelling, 2022, 109, 741-759.	4.2	3
28	Efficient Multiscale Methods for Viscoelasticity and Fatigue of Short Fiber-Reinforced Polymers. Key Engineering Materials, 2019, 809, 473-479.	0.4	2
29	Parametric optimization of the effective thermal conductivity for a three-phase particle-filled composite. Computational Materials Science, 2022, 205, 111214.	3.0	2
30	Fluid-structure interaction in porous media for loaded filter pleats. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 489-490.	0.2	1
31	An accelerated simulation method of medium density wood fiber boards. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 555-556.	0.2	1
32	Kombination von Thermografieaufnahmen mit numerischen Strömungssimulationen zur Bestimmung des Volumenstroms durch Leckagen. Bauphysik, 2016, 38, 222-230.	0.5	1
33	Domain decomposition preconditioners for multiscale problems in linear elasticity. Numerical Linear Algebra With Applications, 2018, 25, e2171.	1.6	1
34	Microsopic Simulation of Thermally-Induced 2nd Order Eigenstresses in AlSi-Alloys. Proceedings in Applied Mathematics and Mechanics, 2014, 14, 165-166.	0.2	0
35	Numerical Solution of Contact Problems using Level Set Methods on Voxel Discretizations. Proceedings in Applied Mathematics and Mechanics, 2016, 16, 541-542.	0.2	0
36	Contact Mechanics in Computational Homogenization. Proceedings in Applied Mathematics and Mechanics, 2017, 17, 607-608.	0.2	0

#	Article	IF	Citations
37	Optimal design of unit‐cell based programmable materials. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000010.	0.2	0
38	A multi‐scale fatigue‐damage model for fiber‐reinforced polymers. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000091.	0.2	0