Roman Lackner

List of Publications by Year
in descending order

109 papers	2,897 citations	147726 31 h-index	197736 49 g-index
114 all docs	114 docs citations	114 times ranked	2115 citing authors

#	Article	IF	Citations
1	How do polypropylene fibers improve the spalling behavior of in-situ concrete?. Cement and Concrete Research, 2006, 36, 929-942.	4.6	203
2	An anisotropic elastoplastic-damage model for plain concrete. International Journal for Numerical Methods in Engineering, 1998, 42, 703-727.	1.5	146
3	Strong discontinuity embedded approach with standard SOS formulation: Element formulation, energy-based crack-tracking strategy, and validations. Computer Methods in Applied Mechanics and Engineering, 2015, 287, 335-366.	3.4	135
4	Identification of four material phases in bitumen by atomic force microscopy. Road Materials and Pavement Design, 2004, 5, 9-24.	2.0	109
5	A multiscale micromechanics model for the autogenous-shrinkage deformation of early-age cement-based materials. Engineering Fracture Mechanics, 2007, 74, 34-58.	2.0	103
6	Identification of Microstructural Components of Bitumen by Means of Atomic Force Microscopy (AFM). Proceedings in Applied Mathematics and Mechanics, 2004, 4, 400-401.	0.2	90
7	Multiscale Prediction of Viscoelastic Properties of Asphalt Concrete. Journal of Materials in Civil Engineering, 2009, 21, 771-780.	1.3	83
8	Back analysis of model parameters in geotechnical engineering by means of soft computing. International Journal for Numerical Methods in Engineering, 2003, 57, 1943-1978.	1.5	78
9	Is Low-Temperature Creep of Asphalt Mastic Independent of Filler Shape and Mineralogy?â€”Arguments from Multiscale Analysis. Journal of Materials in Civil Engineering, 2005, 17, 485-491.	1.3	78
10	Impact of molecular structure of SBS on thermomechanical properties of polymer modified bitumen. European Polymer Journal, 2017, 96, 256-265.	2.6	74
11	Chemoplastic material model for the simulation of early-age cracking: From the constitutive law to numerical analyses of massive concrete structures. Cement and Concrete Composites, 2004, 26, 551-562.	4.6	66
12	Stability assessment of shallow tunnels subjected to fire load. Fire Safety Journal, 2005, 40, 745-763.	1.4	64
13	Artificial Ground Freezing of Fully Saturated Soil: Thermal Problem. Journal of Engineering Mechanics - ASCE, 2005, 131, 211-220.	1.6	64
14	Identification of viscoelastic properties by means of nanoindentation taking the real tip geometry into account. Meccanica, 2007, 42, 293-306.	1.2	55
15	Microstructure-based identification of bitumen performance. Road Materials and Pavement Design, 2006, 7, 111-142.	2.0	53
16	Fast assessing spalling risk of tunnel linings under RABT fire: From a coupled thermo-hydro-chemo-mechanical model towards an estimation method. Engineering Structures, 2017, 142, 1-19.	2.6	51
17	Stability analysis of shotcrete supported crown of NATM tunnels with discontinuity layout optimization. International Journal for Numerical and Analytical Methods in Geomechanics, 2018, 42, 1199-1216.	1.7	50
18	Model-based risk assessment of concrete spalling in tunnel linings under fire loading. Engineering Structures, 2014, 77, 207-215.	2.6	47

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19	Multi-phase hydration model for prediction of hydration-heat release of blended cements. Cement and Concrete Research, 2008, 38, 794-802.	4.6	46
20	Experimental insight into spalling behavior of concrete tunnel linings under fire loading. Acta Geotechnica, 2008, 3, 295-308.	2.9	44
21	Assessment of test methods for characterizing the hydrophobic nature of surface-treated High Performance Concrete. Construction and Building Materials, 2016, 110, 145-153.	3.2	43
22	Comparative studies of 3D-constitutive models for concrete: application to mixed-mode fracture. International Journal for Numerical Methods in Engineering, 2004, 60, 549-570.	1.5	42
23	Identification of Logarithmicâ€Type Creep of Calciumâ€Silicateâ€Hydrates by Means of Nanoindentation. Strain, 2009, 45, 17-25.	1.4	41
24	Thermo-hydro-chemical couplings considered in safety assessment of shallow tunnels subjected to fire load. Fire Safety Journal, 2008, 43, 83-95.	1.4	40
25	A multiscale creep model as basis for simulation of early-age concrete behavior. Computers and Concrete, 2008, 5, 295-328.	0.7	39
26	Artificial Ground Freezing of Fully Saturated Soil: Viscoelastic Behavior. Journal of Engineering Mechanics - ASCE, 2008, 134, 1-11.	1.6	38
27	Cracking in shotcrete tunnel shells. Engineering Fracture Mechanics, 2003, 70, 1047-1068.	2.0	36
28	Safety Assessment of Concrete Tunnel Linings under Fire Load. Journal of Structural Engineering, 2006, 132, 961-969.	1.7	35
29	Upscaling of viscoelastic properties of highly-filled composites: Investigation of matrixâ€“inclusion-type morphologies with power-law viscoelastic material response. Composites Science and Technology, 2009, 69, 2410-2420.	3.8	34
30	The Effect of Styrene-Butadiene-Styrene Modification on the Characteristics and Performance of Bitumen. Monatshefte FÃ¼r Chemie, 2007, 138, 301-307.	0.9	33
31	Influence of curing temperature dependent microstructure on early-age concrete strength development. Cement and Concrete Research, 2017, 102, 48-59.	4.6	33
32	Hybrid Method for Analysis of Segmented Shotcrete Tunnel Linings. Journal of Geotechnical and Geoenvironmental Engineering - ASCE, 2002, 128, 298-308.	1.5	32
33	Effect of Styreneâ€“Butadiene Rubber Latex on Mechanical Properties of Cementitious Materials Highlighted by Means of Nanoindentation. Strain, 2011, 47, 117-126.	1.4	32
34	Microscale characterization of bitumen â€“ back-analysis of viscoelastic properties by means of nanoindentation. International Journal of Materials Research, 2007, 98, 404-413.	0.1	32
35	Constitutive modeling of cementitious materials in the framework of chemoplasticity. International Journal for Numerical Methods in Engineering, 2002, 53, 2357-2388.	1.5	31
36	Scale Transition in Steel-Concrete Interaction. I: Model. Journal of Engineering Mechanics - ASCE, 2003, 129, 393-402.	1.6	28

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37	Failure modes and effective strength of two-phase materials determined by means of numerical limit analysis. Acta Mechanica, 2008, 195, 185-202.	1.1	28
38	Identification of residual gas-transport properties of concrete subjected to high temperatures. Cement and Concrete Research, 2008, 38, 699-716.	4.6	28
39	Underground concrete frame structures subjected to fire loading: Part I â€“ Large-scale fire tests. Engineering Structures, 2014, 58, 175-187.	2.6	28
40	Differential-scheme based dissolution/diffusion model for calcium leaching in cement-based materials accounting for mix design and binder composition. Cement and Concrete Research, 2012, 42, 686-699.	4.6	27
41	Micromechanics-based multifield framework for early-age concrete. Engineering Structures, 2013, 47, 16-24.	2.6	27
42	Friction Between Steel and Snow in Dependence of the Steel Roughness. Tribology Letters, 2015, 59, 1.	1.2	23
43	Multiscale Model for Creep of Shotcrete - From Logarithmic-Type Viscous Behavior of CSH at the Î¼m-Scale to Macroscopic Tunnel Analysis. Journal of Advanced Concrete Technology, 2008, 6, 91-110.	0.8	22
44	Shapes of loading surfaces of concrete models and their influence on the peak load and failure mode in structural analyses. International Journal of Engineering Science, 2003, 41, 1649-1665.	2.7	20
45	Underground concrete frame structures subjected to fire loading: Part II â€“ Re-analysis of large-scale fire tests. Engineering Structures, 2014, 58, 188-196.	2.6	18
46	On the effect of pore-space properties and water saturation on explosive spalling of fire-loaded concrete. Construction and Building Materials, 2020, 231, 117150.	3.2	18
47	Multiscale fatigue model for bituminous mixtures. International Journal of Fatigue, 2011, 33, 1435-1450.	2.8	17
48	Apparent power-law fluid behavior of vibrated fresh concrete: Engineering arguments based on Stokes-type sphere viscometer measurements. Journal of Non-Newtonian Fluid Mechanics, 2017, 240, 44-55.	1.0	17
49	Thermochemomechanical Assessment of Ground Improvement by Jet Grouting in Tunneling. Journal of Engineering Mechanics - ASCE, 2003, 129, 951-962.	1.6	16
50	Finerâ€Scale Extraction of Viscoelastic Properties from Nanoindentation Characterised by Viscoelasticâ€“Plastic Response. Strain, 2009, 45, 45-54.	1.4	16
51	Real-scale CFD simulations of fire in single- and double-track railway tunnels of arched and rectangular shape under different ventilation conditions. Engineering Structures, 2014, 77, 193-206.	2.6	15
52	Experimental Investigation of Strain Behaviour of Heated Cement Paste and Concrete. Strain, 2013, 49, 249-256.	1.4	14
53	On the performance of film formers versus penetrants as water-repellent treatment of High-Performance Concrete (HPC) surfaces. Construction and Building Materials, 2019, 203, 481-490.	3.2	14
54	Adaptive FE Analysis of RC Shells.â€ƒII: Applications. Journal of Engineering Mechanics - ASCE, 2001, 127, 1213-1222.	1.6	13

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55	Optimization of jet-grouted support in NATM tunnelling. International Journal for Numerical and Analytical Methods in Geomechanics, 2004, 28, 781-796.	1.7	13
56	Sesqui-power scaling of plateau strength of closed-cell foams. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 580, 313-321.	2.6	13
57	Adaptivity in computational mechanics of concrete structures. International Journal for Numerical and Analytical Methods in Geomechanics, 2001, 25, 711-739.	1.7	12
58	Effect of Different Bearing Ratios on the Friction between Ultrahigh Molecular Weight Polyethylene Ski Bases and Snow. ACS Applied Materials & Interfaces, 2016, 8, 12552-12557.	4.0	12
59	Analysis on the influence of grain size and grain layer thickness on the sorption kinetics of grained wood at low relative humidity with the use of water vapour sorption experiments. Wood Science and Technology, 2018, 52, 753-776.	1.4	12
60	RUC-based multi-scale model for braid-reinforced polymers: Application to coil springs. Composites Part B: Engineering, 2018, 155, 431-443.	5.9	12
61	Adaptive FE Analysis of RC Shells.â€ƒI: Theory. Journal of Engineering Mechanics - ASCE, 2001, 127, 1203-1212.	1.6	11
62	Multi-level homogenization of strength properties of hierarchical-organized matrixâ€“inclusion materials. Mechanics of Materials, 2015, 89, 98-118.	1.7	11
63	Gradient-based adaptive discontinuity layout optimization for the prediction of strength properties in matrixâ€“inclusion materials. International Journal of Solids and Structures, 2015, 63, 82-98.	1.3	11
64	Consideration of arbitrary inclusion shapes in the framework of isotropic continuum micromechanics: The replacement Eshelby tensor approach. Mechanics of Materials, 2018, 126, 126-139.	1.7	11
65	A posteriori error estimation in non-linear FE analyses of shell structures. International Journal for Numerical Methods in Engineering, 2002, 53, 2329-2355.	1.5	10
66	Ground-Shotcrete Interaction of NATM Tunnels with High Overburden. Journal of Geotechnical and Geoenvironmental Engineering - ASCE, 2005, 131, 886-897.	1.5	10
67	New approach for an industrial low-temperature roll-to-roll CI(G)Se hybrid sputter coevaporation deposition process. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2020, 38, 033201.	0.9	10
68	Scale Transition in Steel-Concrete Interaction. II:â€‚Applications. Journal of Engineering Mechanics - ASCE, 2003, 129, 403-413.	1.6	9
69	Hybrid analysis method for on-line quantification of stress states in tunnel shells. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 5361-5376.	3.4	9
70	Scaling relations for viscoelastic â€“ cohesive conical indentation. International Journal of Materials Research, 2008, 99, 836-846.	0.1	9
71	Concrete Subjected to Triaxial Stress States: Application to Pull-Out Analyses. Journal of Engineering Mechanics - ASCE, 2004, 130, 1486-1498.	1.6	8
72	Creep response of bituminous mixturesâ€”rheological model and microstructural interpretation. Meccanica, 2014, 49, 2687-2698.	1.2	8

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73	Power-law scaling of thermal conductivity of highly porous ceramics. Journal of the European Ceramic Society, 2015, 35, 1933-1941.	2.8	8
74	Thin-Shell Model for Effective Thermal and Electrical Conductivity of Highly Porous Closed-Cell Metal Foams. Transport in Porous Media, 2016, 113, 629-638.	1.2	8
75	Closed-form expressions for effective viscoelastic properties of fiber-reinforced composites considering fractional matrix behavior. Mechanics of Materials, 2018, 127, 14-25.	1.7	8
76	Mesh generation and mesh refinement procedures for the analysis of concrete shells. Advances in Engineering Software, 2002, 33, 389-402.	1.8	7
77	Low-temperature performance prediction of asphalt mixtures used for LLPâ€"new approach based on fundamental test methods and numerical modeling. International Journal of Pavement Engineering, 2006, 7, 121-132.	2.2	7
78	Identification of viscoelastic model parameters by means of cyclic nanoindentation testing. International Journal of Materials Research, 2008, 99, 829-835.	0.1	7
79	Mechanical performance of textile-reinforced hoses assessed by a truss-based unit cell model. International Journal of Engineering Science, 2019, 141, 47-66.	2.7	7
80	Acrylic surface treatment applied to architectural High-Performance Concrete (HPC): Identification of potential pitfalls on the way to long-lasting protection. Construction and Building Materials, 2020, 237, 117415.	3.2	7
81	Computational mechanics of materials and structures. Engineering Structures, 2009, 31, 1288-1297.	2.6	6
82	Engineering hydration model for ordinary Portland cement based on heat flow calorimetry data. Journal of Thermal Analysis and Calorimetry, 2019, 138, 2283-2288.	2.0	6
83	Effect of substrate moisture on the weatherability of surface treatment for High - Performance Concrete (HPC). Cement and Concrete Composites, 2017, 83, 57-65.	4.6	5
84	Viscoelastic Response of Closed-Cell Polyurethane Foams From Half Hour-Long Creep Tests: Identification of Lomnitz Behavior. Journal of Engineering Materials and Technology, Transactions of the ASME, 2019, 141, .	0.8	5
85	On the Effect of Recycled Polyolefins on the Thermorheological Performance of Polymer-Modified Bitumen Used for Roofing-Applications. Sustainability, 2021, 13, 3284.	1.6	5
86	Quantification of stress states in shotcrete shells. , 2003, , 225-248.		5
87	A Finiteâ€Element Approach to Predict Permanent Deformation Behaviour of Hot Mix Asphalt Based on Fundamental Material Tests and Advanced Rheological Models. Strain, 2009, 45, 3-16.	1.4	4
88	Holistic Analysis of Underground Infrastructure Subjected to Fire. Procedia Engineering, 2011, 14, 41-51.	1.2	4
89	Sesqui-power scaling of elasticity of closed-cell foams. Materials Letters, 2012, 73, 212-215.	1.3	4
90	Micromechanics-based assessment of the effective viscosity of suspensions of generalized-Newtonian fluids embedding noncolloidal angular/spheroidal pores and particles. Journal of Rheology, 2020, 64, 899-913.	1.3	4

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91	MULTISCALE VISCOELASTICâ^'VISCOPLASTIC MODEL FOR THE PREDICTION OF PERMANENT DEFORMATION IN FLEXIBLE PAVEMENTS. International Journal for Multiscale Computational Engineering, 2012, 10, 615-634.	0.8	3
92	Upscaling of Permeability of Porous Materials: First Insight into the Effect of Pore-Space Characteristics. International Journal for Multiscale Computational Engineering, 2010, 8, 103-112.	0.8	3
93	Thermo-chemo-mechanical characterization, modeling, and analysis of hydration of calcium-sulfoaluminate cement paste. Construction and Building Materials, 2022, 319, 125747.	3.2	3
94	Extending chemo-thermal quality assessment for jet grouting. Proceedings of the Institution of Civil Engineers: Ground Improvement, 2016, 169, 264-274.	0.7	2
95	Thermochemical assessment of the load-bearing capacity of steel-reinforced elastomeric bearings subjected to fire loading. Engineering Structures, 2018, 160, 12-23.	2.6	2
96	Underground Structures under Fire â€“ From Material Modeling of Concrete Under Combined Thermal and Mechanical Loading to Structural Safety Assessment. , 2009, , 71-78.		2
97	Application of Hyperspectral Imaging for identification of aging state of Styreneâ€“Butadieneâ€“Styrene. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2022, 271, 120918.	2.0	2
98	A posteriori error estimation and adaptive mesh refinement in chemoplastic analyses of shotcrete tunnel linings. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 363-372.	3.4	1
99	Mechanical and Transport Properties of Concrete at High Temperatures. Applied Mechanics and Materials, 0, 24-25, 1-11.	0.2	1
100	A Coupled Thermo-Hygro-Chemo-Mechanical Model for the Simulation of Spalling of Concrete Subjected to Fire Loading. , 2013, , .		1
101	Multifunctional Optimization of Viscoelastic Materials Subjected to Spherical Impact. Journal of Applied Mechanics, Transactions ASME, 2015, 82, .	1.1	1
102	Phase development in RbInSe2 thin films â€“ a temperature series. Scripta Materialia, 2021, 202, 113999.	2.6	1
103	Material model for soil and applications. , 2003, , 83-116.		1
104	Identification of model parameters from elastic/elasto-plastic spherical indentation. International Journal of Materials Research, 2009, 100, 926-932.	0.1	1
105	Micromechanics-based modelling of post-yield behavior of porous materials and its effect on hardness properties from conical indentation. Journal of the Mechanics and Physics of Solids, 2013, 61, 1655-1669.	2.3	0
106	Synthesis and Crystal Structures of 1,1â€²-Methylene-bis(imidazolidine-2,4-dione) and Alkali Metal Salts. Crystals, 2014, 4, 1-10.	1.0	0
107	Introduction: New advances in the analysis of structures subjected to fire: Part II. Engineering Structures, 2014, 77, 171.	2.6	0
108	Identification of macroscopic material properties of multi-composed materials from finer scales of observation. , 2004, , 173-194.		0

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109	Highlighting the Effect of Gel-Pore Diffusivity on the Effective Diffusivity of Cement Paste â€" A Multiscale Investigation. , 2009, , 973-981.		0