Sylvain Calloch

List of Publications by Year
in descending order

71 papers	2,271 citations	172386 29 h-index	214721 47 g-index
71 all docs	71 docs citations	71 times ranked	1313 citing authors

#	Article	IF	Citations
1	A phenomenological model for pseudoelasticity of shape memory alloys under multiaxial proportional and nonproportional loadings. European Journal of Mechanics, A/Solids, 2004, 23, 37-61.	2.1	172
2	Digital image correlation used to analyze the multiaxial behavior of rubber-like materials. European Journal of Mechanics, A/Solids, 2001, 20, 169-187.	2.1	149
3	A 3D super-elastic model for shape memory alloys taking into account progressive strain under cyclic loadings. Mechanics of Materials, 2009, 41, 12-26.	1.7	122
4	Ratchetting under tensionâ€"torsion loadings: experiments and modelling. International Journal of Plasticity, 2000, 16, 303-335.	4.1	116
5	Analysis of a multiaxial test on a C/C composite by using digital image correlation and a damage model. Experimental Mechanics, 2002, 42, 318-328.	1.1	112
6	A probabilistic two-scale model for high-cycle fatigue life predictions. Fatigue and Fracture of Engineering Materials and Structures, 2005, 28, 279-288.	1.7	111
7	Experimental comparison of classical PID and model-free control: Position control of a shape memory alloy active spring. Control Engineering Practice, 2011, 19, 433-441.	3.2	82
8	A general cyclic plasticity model taking into account yield surface distortion for multiaxial ratchetting. International Journal of Plasticity, 2004, 20, 1817-1850.	4.1	80
9	Experimental and numerical determinations of the initial surface of phase transformation under biaxial loading in some polycrystalline shape-memory alloys. Journal of the Mechanics and Physics of Solids, 2002, 50, 2717-2735.	2.3	79
10	Fast prediction of the WÃ¶hler curve from heat build-up measurements on Short Fiber Reinforced Plastic. International Journal of Fatigue, 2013, 47, 259-267.	2.8	78
11	Mechanical Behavior of a Cu-Al-Be Shape Memory Alloy Under Multiaxial Proportional and Nonproportional Loadings. Journal of Engineering Materials and Technology, Transactions of the ASME, 2002, 124, 112-124.	0.8	77
12	Determination of high cycle fatigue properties of a wide range of steel sheet grades from self-heating measurements. International Journal of Fatigue, 2014, 63, 46-61.	2.8	77
13	Fast evaluation of the fatigue lifetime of rubber-like materials based on a heat build-up protocol and micro-tomography measurements. International Journal of Fatigue, 2010, 32, 1582-1590.	2.8	63
14	Experimental study of the phase transformation plasticity of 16MND5 low carbon steel under multiaxial loading. International Journal of Plasticity, 2002, 18, 1707-1727.	4.1	62
15	About modelling the shape memory alloy behaviour based on the phase transformation surface identification under proportional loading and anisothermal conditions. International Journal of Solids and Structures, 2006, 43, 613-626.	1.3	58
16	Fatigue performance of superelastic NiTi near stress-induced martensitic transformation. International Journal of Fatigue, 2017, 95, 76-89.	2.8	58
17	Triaxial tensionâ€"compression tests for multiaxial cyclic plasticity. International Journal of Plasticity, 1999, 15, 521-549.	4.1	55
18	Identification of the scatter in high cycle fatigue from temperature measurements. Comptes Rendus - Mecanique, 2004, 332, 795-801.	2.1	54

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19	Probabilistic multiscale models and measurements of self-heating under multiaxial high cycle fatigue. Journal of the Mechanics and Physics of Solids, 2010, 58, 578-593.	2.3	53
20	Identification of heat source fields from infrared thermography: Determination of â€˜self-heatingâ€™ in a dual-phase steel by using a dog bone sample. Mechanics of Materials, 2010, 42, 55-62.	1.7	52
21	Determination of an HCF criterion by thermal measurements under biaxial cyclic loading. International Journal of Fatigue, 2007, 29, 748-757.	2.8	48
22	Thermomechanical cyclic behavior modeling of Cu-Al-Be SMA materials and structures. International Journal of Solids and Structures, 2012, 49, 1088-1102.	1.3	40
23	Influence of hardening type on self-heating of metallic materials under cyclic loadings at low amplitude. European Journal of Mechanics, A/Solids, 2009, 28, 233-240.	2.1	35
24	Experimental characterisation of three-phase NiTi wires under tension. Mechanics of Materials, 2014, 79, 85-101.	1.7	34
25	A new approach to characterizing and modeling the high cycle fatigue properties of cast materials based on self-heating measurements under cyclic loadings. International Journal of Fatigue, 2013, 47, 232-243.	2.8	32
26	Phase proportioning in CuAlBe shape memory alloys during thermomechanical loadings using electric resistance variation. International Journal of Plasticity, 2010, 26, 258-272.	4.1	30
27	Evaluation of the fatigue defect population in an elastomer using Xâ€ray computed microâ€tomography. Polymer Engineering and Science, 2011, 51, 1253-1263.	1.5	30
28	Comparative analysis of torsional and bending behavior through finite-element models of 5 Niâ€"Ti endodontic instruments. Oral Surgery Oral Medicine Oral Pathology Oral Radiology and Endodontics, 2011, 111, 115-121.	1.6	29
29	Identification of the micro-plasticity mechanisms at the origin of self-heating under cyclic loading with low stress amplitude. International Journal of Fatigue, 2017, 103, 122-135.	2.8	29
30	An Improvement of Multiaxial Ratchetting Modeling Via Yield Surface Distortion. Journal of Engineering Materials and Technology, Transactions of the ASME, 2002, 124, 402-411.	0.8	23
31	Prediction of self-heating measurements under proportional and non-proportional multiaxial cyclic loadings. Comptes Rendus - Mecanique, 2007, 335, 81-86.	2.1	21
32	Fatigue analysis of shape memory alloys by self-heating method. International Journal of Mechanical Sciences, 2019, 156, 329-341.	3.6	16
33	Investigation of NiTi based damper effects in bridge cables vibration response: Damping capacity and stiffness changes. Engineering Structures, 2018, 165, 184-197.	2.6	15
34	R-phase shape memory alloy helical spring based actuators: Modeling and experiments. Sensors and Actuators A: Physical, 2019, 289, 65-76.	2.0	15
35	An improved model of 3-dimensional finite element analysis of mechanical behavior of endodontic instruments. Oral Surgery Oral Medicine Oral Pathology Oral Radiology and Endodontics, 2010, 109, e111-e121.	1.6	14
36	Variation in electric resistivity in metastable alloys during thermomechanical loading: Effects of temperature, elasticity, plasticity and phase transformation. Mechanics of Materials, 2014, 71, 1-9.	1.7	13

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37	Analysis of a Multiaxial Test on a C/C Composite by Using Digital Image Correlation and a Damage Model. Experimental Mechanics, 2002, 42, 318-328.	1.1	12
38	A uniaxial constitutive model for superelastic NiTi SMA including R-phase and martensite transformations and thermal effects. Smart Materials and Structures, 2017, 26, 025007.	1.8	11
39	Self-heating of metastable 304L austenitic stainless steel under cyclic loading: Influence of initial martensite volume fraction, testing temperature and pre-strain. Mechanics of Materials, 2020, 151, 103596.	1.7	11
40	Super-elastic behavior of shape memory alloys under proportional cyclic loadings. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 481-482, 174-177.	2.6	10
41	A new control strategy for shape memory alloys actuators. , 2009, , .		10
42	Model-Free Control of Shape Memory Alloys Antagonistic Actuators. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 4458-4463.	0.4	8
43	Validation of a high-cycle fatigue model via calculation/test comparisons at structural scale: Application to copper alloy sand-cast ship propellers. International Journal of Fatigue, 2015, 74, 38-45.	2.8	8
44	Investigation of self-heating and dissipative effects in ferroelectric ceramics subjected to compressive mechanical cyclic loading. Acta Materialia, 2021, 221, 117386.	3.8	8
45	Fast Fatigue Properties Identification by â€œSelf-heatingâ€•Method: Application to Automotive Welded Joints. Procedia Engineering, 2013, 66, 676-683.	1.2	7
46	Taking residual stresses into account in low-cycle fatigue design using the adjustable localisation operator method. International Journal of Fatigue, 2021, 150, 106322.	2.8	7
47	Rotary bending fatigue analysis of shape memory alloys. Journal of Intelligent Material Systems and Structures, 2018, 29, 1183-1195.	1.4	6
48	A probabilistic approach for high cycle fatigue of Wire and Arc Additive Manufactured parts taking into account process-induced pores. Additive Manufacturing, 2021, 42, 101989.	1.7	6
49	Experimental Validation of Numerical Simulations of a New-Generation NiTi Endodontic File Under Bending. Journal of Materials Engineering and Performance, 2018, 27, 5856-5864.	1.2	5
50	An original simplified method based on the use of an adjustable localization operator for low-cycle fatigue life predictions in the case of confined plasticity. Theoretical and Applied Fracture Mechanics, 2019, 104, 102383.	2.1	5
51	<title>Analysis of mechanical behavior and in-situ observations of Cu-Al-Be SMA under biaxial compressive tests by using DIC</title>. , 2002, , .		4
52	Coupling of Forming Process and Fatigue Design Computations: A Local Approach. Advanced Engineering Materials, 2009, 11, 736-741.	1.6	4
53	Rapid determination of the high cycle fatigue properties of high temperature aeronautical alloys by self-heating measurements. MATEC Web of Conferences, 2018, 165, 22022.	0.1	4
54	Determination of the First Stress Tensor Invariant of a Complex Steel Sheet Structure from Thermoelastic Stress Analysis. Procedia Engineering, 2015, 133, 736-745.	1.2	3

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55	Effect of mechanical (monotonic and cyclic) stress on the corrosion resistance of chromium-plated steel rods. Procedia Engineering, 2018, 213, 598-605.	1.2	3
56	Study of load history effects on the high cycle fatigue properties of high-strength low-alloy steel from self-heating measurements. MATEC Web of Conferences, 2018, 165, 14016.	0.1	2
57	Effect of mechanical pre-loadings on corrosion resistance of chromium-electroplated steel rods in marine environment. Materials Research Express, 2018, 5, 036522.	0.8	1
58	Utilisation de lâ€™imagerie IR pour lâ€™Ã©tude de la fatigue des aciers. PremiÃ¨res observations dâ€™effets de surface. Instrumentation Mesure Metrologie, 2012, 12, 107-129.	0.2	1
59	Extension of the Adjustable Localization Operator Method to Anisotropic Elasto-Plastic Behavior for Low-Cycle Fatigue Life Prediction. Journal of Engineering Materials and Technology, Transactions of the ASME, 2022, 144, .	0.8	1
60	<title>Experiments of transformation-induced plasticity under multiaxial loadings for a 16MND5 low-carbon steel</title>. , 2002, 4537, 115.		0
61	Relation between martensite volume fraction and equivalent transformation strain in an anisotropic CuAlBe shape memory alloy. , 2007, , .		0
62	A cyclic model for superelastic shape memory alloys. , 2007, , .		0
63	ContrÃ´ler une machine d'essai avec une camÃ©ra. Mecanique Et Industries, 2008, 9, 447-457.	0.2	0
64	Electric Resistivity as Phase Volume Fractions Indicator in Metastable Alloys. Materials Science Forum, 2013, 738-739, 56-61.	0.3	0
65	Mechanical Behavior Study of NiTi Endodontic Files Taking into Account Anatomic Shape of Root Canals. Materials Science Forum, 2013, 738-739, 549-553.	0.3	0
66	A Self-Heating Approach to Characterize Anisotropy Effects in Fatigue Behaviour: Application to a Nineteenth Century Puddled Iron from a French Railway Bridge. Advanced Materials Research, 0, 891-892, 136-142.	0.3	0
67	Residual Stress Measurement Methods Comparison in High-Strength Steel for Naval Application. Advanced Materials Research, 2014, 996, 343-348.	0.3	0
68	Experimental Comparison of In-Depth Residual Stresses Measured with Neutron and X-Ray Diffraction with a Numerical Stress Relaxation Correction Method. Materials Science Forum, 2017, 905, 131-136.	0.3	0
69	Two new in-plane torsion tests for the investigation of self-heating under pure shear cyclic loading. International Journal of Fatigue, 2021, 149, 106256.	2.8	0
70	Multiaxial One Way Shape Memory Effect and Superelasticity. , 2007, , 389-390.		0
71	A Cyclic Model for Thermomechanical Behavior of Shape Memory Alloys. , 0, , 473-480.		0