Francesco Lanza di Scalea

List of Publications by Year
in descending order

102 papers	3,969 citations	159585 30 h-index	128289 60 g-index
109 all docs	109 docs citations	109 times ranked	2370 citing authors

#	Article	IF	Citations
1	Modeling wave propagation in damped waveguides of arbitrary cross-section. Journal of Sound and Vibration, 2006, 295, 685-707.	3.9	524
2	Performance assessment and validation of piezoelectric active-sensors in structural health monitoring. Smart Materials and Structures, 2006, 15, 1673-1683.	3.5	215
3	Stretchable ultrasonic transducer arrays for three-dimensional imaging on complex surfaces. Science Advances, 2018, 4, eaar3979.	10.3	204
4	Temperature effects in ultrasonic Lamb wave structural health monitoring systems. Journal of the Acoustical Society of America, 2008, 124, 161-174.	1.1	159
5	A semi-analytical finite element formulation for modeling stress wave propagation in axisymmetric damped waveguides. Journal of Sound and Vibration, 2008, 318, 488-505.	3.9	149
6	Modeling guided wave propagation with application to the long-range defect detection in railroad tracks. NDT and E International, 2005, 38, 325-334.	3.7	138
7	Stress Measurement and Defect Detection in Steel Strands by Guided Stress Waves. Journal of Materials in Civil Engineering, 2003, 15, 219-227.	2.9	136
8	Macro-fiber composite piezoelectric rosettes for acoustic source location in complex structures. Smart Materials and Structures, 2007, 16, 1489-1499.	3.5	129
9	On the existence of antisymmetric or symmetric Lamb waves at nonlinear higher harmonics. Journal of Sound and Vibration, 2009, 323, 932-943.	3.9	105
10	Propagation of ultrasonic guided waves in lap-shear adhesive joints: Case of incident a0 Lamb wave. Journal of the Acoustical Society of America, 2004, 115, 146-156.	1.1	96
11	Ultrasonic guided wave monitoring of composite wing skin-to-spar bonded joints in aerospace structures. Journal of the Acoustical Society of America, 2005, 118, 2240-2252.	1.1	94
12	The response of rectangular piezoelectric sensors to Rayleigh and Lamb ultrasonic waves. Journal of the Acoustical Society of America, 2007, 121, 175-187.	1.1	90
13	Isogeometric Fatigue Damage Prediction in Large-Scale Composite Structures Driven by Dynamic Sensor Data. Journal of Applied Mechanics, Transactions ASME, 2015, 82, .	2.2	88
14	Wavelet-based outlier analysis for guided wave structural monitoring: Application to multi-wire strands. Journal of Sound and Vibration, 2007, 307, 52-68.	3.9	79
15	Wave propagation in multi-wire strands by wavelet-based laser ultrasound. Experimental Mechanics, 2004, 44, 407-415.	2.0	76
16	Acoustic emission monitoring of carbon-fiber-reinforced-polymer bridge stay cables in large-scale testing. Experimental Mechanics, 2001, 41, 282-290.	2.0	66
17	Guided-wave Health Monitoring of Aircraft Composite Panels under Changing Temperature. Journal of Intelligent Material Systems and Structures, 2009, 20, 1079-1090.	2.5	58
18	Ultrasonic inspection of multi-wire steel strands with the aid of the wavelet transform. Smart Materials and Structures, 2005, 14, 685-695.	3.5	55

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19	Numerical and experimental study of guided waves for detection of defects in the rail head. NDT and E International, 2011, 44, 93-100.	3.7	55
20	Noncontact ultrasonic guided wave inspection of rails. Structural Health Monitoring, 2013, 12, 539-548.	7.5	52
21	Noncontact Air-Coupled Guided Wave Ultrasonics for Detection of Thinning Defects in Aluminum Plates. Research in Nondestructive Evaluation, 2001, 13, 61-77.	1.1	51
22	Structural health monitoring by extraction of coherent guided waves from diffuse fields. Journal of the Acoustical Society of America, 2008, 123, EL8-EL13.	1.1	51
23	Feature Extraction for Defect Detection in Strands by Guided Ultrasonic Waves. Structural Health Monitoring, 2006, 5, 297-308.	7.5	47
24	Nonlinear guided wave propagation in prestressed plates. Journal of the Acoustical Society of America, 2015, 137, 1529-1540.	1.1	46
25	Measuring high-frequency wave propagation in railroad tracks by joint timeâ€“frequency analysis. Journal of Sound and Vibration, 2004, 273, 637-651.	3.9	44
26	Nondestructive measurement of neutral temperature in continuous welded rails by nonlinear ultrasonic guided waves. Journal of the Acoustical Society of America, 2014, 136, 2561-2574.	1.1	44
27	Monitoring load levels in multi-wire strands by nonlinear ultrasonic waves. Structural Health Monitoring, 2011, 10, 617-629.	7.5	41
28	On the identification of the elastic properties of composites by ultrasonic guided waves and optimization algorithm. Composite Structures, 2019, 223, 110969.	5.8	39
29	Nonlinear wave propagation in constrained solids subjected to thermal loads. Journal of Sound and Vibration, 2014, 333, 541-554.	3.9	37
30	Whole-field strain measurement in a pin-loaded plate by electronic speckle pattern interferometry and the finite element method. Experimental Mechanics, 1998, 38, 55-60.	2.0	34
31	A Study on the Effects of Clearance and Interference Fits in a Pin-Loaded Cross-Ply FGRP Laminate. Journal of Composite Materials, 1998, 32, 783-802.	2.4	31
32	Use of Interwire Ultrasonic Leakage to Quantify Loss of Prestress in Multiwire Tendons. Journal of Engineering Mechanics - ASCE, 2011, 137, 324-333.	2.9	30
33	On the Elastic Behavior of a Cross-Ply Composite Pin-Joint with Clearance Fits. Journal of Thermoplastic Composite Materials, 1999, 12, 13-22.	4.2	28
34	Ultrasonic Guided Wave Inspection of Bonded Lap Joints: Noncontact Method and Photoelastic Visualization. Research in Nondestructive Evaluation, 2001, 13, 153-171.	1.1	28
35	EFFECT OF FREQUENCY ON THE ACOUSTOELASTIC RESPONSE OF STEEL BARS. Experimental Techniques, 2003, 27, 40-43.	1.5	28
36	Field Test Performance of Noncontact Ultrasonic Rail Inspection System. Journal of Transportation Engineering Part A: Systems, 2017, 143, .	1.4	28

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37	On the existence of longitudinal or flexural waves in rods at nonlinear higher harmonics. Journal of Sound and Vibration, 2010, 329, 1499-1506.	3.9	27
38	Non-Destructive Inspection of Impact Damage in Composite Aircraft Panels by Ultrasonic Guided Waves and Statistical Processing. Materials, 2017, 10, 616.	2.9	27
39	Detection of Initial Yield and Onset of Failure in Bonded Posttensioned Concrete Beams. Journal of Bridge Engineering, 2012, 17, 966-974.	2.9	26
40	Damage imaging in skin-stringer composite aircraft panel by ultrasonic-guided waves using deep learning with convolutional neural network. Structural Health Monitoring, 2022, 21, 1123-1138.	7.5	26
41	Application of damage detection methods using passive reconstruction of impulse response functions. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20140070.	3.4	24
42	Sensitivity to Axial Stress of Electro-Mechanical Impedance Measurements. Experimental Mechanics, 2016, 56, 1599-1610.	2.0	24
43	Wavelet-based feature extraction for automatic defect classification in strands by ultrasonic structural monitoring. Smart Structures and Systems, 2006, 2, 253-274.	1.9	24
44	Higher harmonic generation in nonlinear waveguides of arbitrary cross-section. Journal of the Acoustical Society of America, 2010, 127, 2790-2796.	1.1	23
45	Health Monitoring of Prestressing Tendons in Posttensioned Concrete Bridges. Transportation Research Record, 2011, 2220, 21-27.	1.9	23
46	Acoustic Emission Damage Assessment of Steel/CFRP Bonds for Rehabilitation. Journal of Composites for Construction, 2006, 10, 265-274.	3.2	22
47	Ultrasonic Guided Waves-Based Monitoring of Rail Head: Laboratory and Field Tests. Advances in Civil Engineering, 2010, 2010, 1-13.	0.7	22
48	Predictions of defect detection performance of air-coupled ultrasonic rail inspection system. Structural Health Monitoring, 2018, 17, 684-705.	7.5	22
49	Modeling 3D heat flow interaction with defects in composite materials for infrared thermography. NDT and E International, 2014, 66, 1-7.	3.7	21
50	ADVANCES IN NON-CONTACT ULTRASONIC INSPECTION OF RAILROAD TRACKS. Experimental Techniques, 2000, 24, 23-26.	1.5	20
51	Determination of Defect Depth and Size Using Virtual Heat Sources in Pulsed Infrared Thermography. Experimental Mechanics, 2013, 53, 661-671.	2.0	20
52	Nonlinear Semianalytical Finite-Element Algorithm for the Analysis of Internal Resonance Conditions in Complex Waveguides. Journal of Engineering Mechanics - ASCE, 2014, 140, 502-522.	2.9	20
53	Damage location by ultrasonic Lamb waves and piezoelectric rosettes. Journal of Intelligent Material Systems and Structures, 2015, 26, 1477-1490.	2.5	20
54	Detection of defects in wind turbine composite blades using statistically enhanced Lock-In Thermography. Structural Health Monitoring, 2013, 12, 566-574.	7.5	19

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55	Global-Local model for guided wave scattering problems with application to defect characterization in built-up composite structures. International Journal of Solids and Structures, 2020, 182-183, 267-280.	2.7	19
56	Quantitative Structural Health Monitoring by Ultrasonic Guided Waves. Journal of Engineering Mechanics - ASCE, 2010, 136, 937-944.	2.9	18
57	Thermal Stress Measurement in Continuous Welded Rails Using the Hole-Drilling Method. Experimental Mechanics, 2017, 57, 165-178.	2.0	18
58	High-sensitivity laser-based ultrasonic C-scan system for materials inspection. Experimental Mechanics, 1999, 39, 329-334.	2.0	17
59	WAVELET TRANSFORM FOR CHARACTERIZING LONGITUDINAL AND LATERAL TRANSIENT VIBRATIONS OF RAILROAD TRACKS. Research in Nondestructive Evaluation, 2004, 15, 87-98.	1.1	15
60	Toward a Computational Steering Framework for Large-Scale Composite Structures Based on Continually and Dynamically Injected Sensor Data. Procedia Computer Science, 2012, 9, 1149-1158.	2.0	15
61	A Hybrid Non-Contact Ultrasonic System for Sensing Bond Quality in Tow-Placed Thermoplastic Composites. Journal of Composite Materials, 2000, 34, 1860-1880.	2.4	14
62	System for in Situ Measurement of Neutral Temperature in Continuous-Welded Rail. Transportation Research Record, 2013, 2374, 154-161.	1.9	14
63	Impact monitoring in stiffened composite aerospace panels by wave propagation. Structural Health Monitoring, 2015, 14, 547-557.	7.5	14
64	Minimum-Variance Imaging in Plates Using Guided-Wave-Mode Beamforming. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2019, 66, 1906-1919.	3.0	14
65	Noncontact Ultrasonic Guided Wave Detection of Rail Defects. Transportation Research Record, 2009, 2117, 77-84.	1.9	13
66	Higher-Harmonic Generation Analysis in Complex Waveguides via a Nonlinear Semianalytical Finite Element Algorithm. Mathematical Problems in Engineering, 2012, 2012, 1-16.	1.1	13
67	Passive-only damage detection by reciprocity of Greenâ€™s functions reconstructed from diffuse acoustic fields with application to wind turbine blades. Journal of Intelligent Material Systems and Structures, 2015, 26, 1251-1258.	2.5	13
68	Stress Dependence of Ultrasonic Guided Waves in Rails. Transportation Research Record, 2010, 2159, 91-97.	1.9	12
69	Passive Extraction of Dynamic Transfer Function From Arbitrary Ambient Excitations: Application to High-Speed Rail Inspection From Wheel-Generated Waves. Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, 2018, 1, .	0.9	12
70	On the Effect of Interference Fits in Composite Pin-Joints. Journal of Thermoplastic Composite Materials, 1999, 12, 23-32.	4.2	11
71	Ultrasonic Imaging in Solids Using Wave Mode Beamforming. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2017, 64, 602-616.	3.0	11
72	High-Speed Defect Detection in Rails by Noncontact Guided Ultrasonic Testing. Transportation Research Record, 2005, 1916, 66-77.	1.9	10

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73	A match coefficient approach for damage imaging in structural components by ultrasonic synthetic aperture focus. Procedia Engineering, 2017, 199, 1544-1549.	1.2	10
74	Experimental observation of the intrusive effect of a contact transducer on ultrasound propagation. Ultrasonics, 1999, 37, 179-183.	3.9	9
75	COMPENSATION OF THERMAL OUTPUT OF STRAIN GAGES ON ORTHOTROPIC MATERIALS: CASE OF ONE COMPENSATING GAGE FOR MULTIPLE ACTIVE ONES. Experimental Techniques, 1998, 22, 30-33.	1.5	8
76	Detection of major impact damage to composite aerospace structures by ultrasonic guided waves and statistical signal processing. Procedia Engineering, 2017, 199, 1550-1555.	1.2	8
77	Robust passive reconstruction of dynamic transfer function in dual-output systems. Journal of the Acoustical Society of America, 2018, 143, 1019-1028.	1.1	8
78	Noncontact Ultrasonic Guided-Wave System for Rail Inspection. Transportation Research Record, 2011, 2261, 143-147.	1.9	7
79	Robust non-destructive inspection of composite aerospace structures by extraction of ultrasonic guided-wave transfer function in single-input dual-output scanning systems. Journal of Intelligent Material Systems and Structures, 2020, 31, 651-664.	2.5	7
80	Identification of Elastic Properties of Composites by Inversion of Ultrasonic Guided Wave Data. Experimental Mechanics, 2021, 61, 803-816.	2.0	7
81	Ultrasonic Characterization and Inspection of Open Cell Foams. Journal of Engineering Mechanics - ASCE, 2005, 131, 1200-1208.	2.9	6
82	Wavelet-Aided Multivariate Outlier Analysis to Enhance Defect Contrast in Thermal Images. Experimental Techniques, 2014, 38, 28-37.	1.5	6
83	Globalâ€“local model for three-dimensional guided wave scattering with application to rail flaw detection. Structural Health Monitoring, 2022, 21, 370-386.	7.5	6
84	Actuation stress modelling of piezoceramic transducers under variable temperature field. Journal of Intelligent Material Systems and Structures, 2016, 27, 337-349.	2.5	5
85	Ultrasonic synthetic aperture imaging with interposed transducerâ€“medium coupling path. Structural Health Monitoring, 2019, 18, 1543-1556.	7.5	5
86	Noncontact Air-Coupled Guided Wave Ultrasonics for Detection of Thinning Defects in Aluminum Plates. Research in Nondestructive Evaluation, 2001, 13, 61-77.	1.1	5
87	Health monitoring of UCSD's I-5/Gilman advanced technology bridge. Smart Materials Bulletin, 2000, 2000, 6-10.	0.0	4
88	Modeling of Nonlinear Guided Waves and Applications to Structural Health Monitoring. Journal of Computing in Civil Engineering, 2015, 29, .	4.7	4
89	Wave Propagation in Multi-Wire Strands by Wavelet-Based Laser Ultrasound. Experimental Mechanics, 2004, 44, 407-415.	2.0	4
90	A fast lock-in infrared thermography implementation to detect defects in composite structures like wind turbine blades. AIP Conference Proceedings, 2013, , .	0.4	3

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91	Passive-Only Defect Detection and Imaging in Composites Using Diffuse Fields. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 67-72.	0.5	3
92	Laserâ€“Air-Coupled Hybrid Noncontact System for Defect Detection in Rail Tracks. Transportation Research Record, 2006, 1943, 57-64.	1.9	2
93	Monitoring Prestress Level in Seven Wire Prestressing Tendons by Inter Wire Ultrasonic Wave Propagation. Advances in Science and Technology, 2008, 56, 200-205.	0.2	2
94	Improved global-local model to predict guided-wave scattering patterns from discontinuities in complex parts. , 2019, , .		2
95	Non-destructive damage localization in built-up composite aerospace structures by ultrasonic guided-wave multiple-output scanning. Composite Structures, 2022, 292, 115670.	5.8	2
96	STRAIN IN ISOTROPIC PIN-JOINTS: EXPERIMENTAL AND NUMERICAL ANALYSIS. Experimental Techniques, 1998, 22, 25-27.	1.5	1
97	NONLINEAR GUIDED WAVES IN CONTINUOUSLY WELDED RAILS FOR BUCKLING PREDICTION. , 2011, , .		1
98	Distributed Strain Sensing Using Electrical Time Domain Reflectometry With Nanocomposites. IEEE Sensors Journal, 2018, 18, 9515-9525.	4.7	1
99	High-speed non-contact ultrasound system for rail track integrity evaluation. , 2018, , .		1
100	Ultrasonic Tomography for Three-Dimensional Imaging of Internal Rail Flaws. Transportation Research Record, 2013, 2374, 162-168.	1.9	0
101	Passive extraction of Green's function of solids and application to high-speed rail inspection. , 2019, , .		0
102	Ultrasonic guided wave imaging of plates containing defects and inclusions. , 2020, , .		0