Stefano Mariani

List of Publications by Year
in descending order

155 papers	3,107 citations	126907 33 h-index	197818 49 g-index
166 all docs	166 docs citations	166 times ranked	1748 citing authors

#	Article	IF	Citations
1	Extended finite element method for quasi-brittle fracture. International Journal for Numerical Methods in Engineering, 2003, 58, 103-126.	2.8	172
2	Parameter identification in explicit structural dynamics: performance of the extended Kalman filter. Computer Methods in Applied Mechanics and Engineering, 2004, 193, 3807-3835.	6.6	139
3	Unscented Kalman filtering for nonlinear structural dynamics. Nonlinear Dynamics, 2007, 49, 131-150.	5.2	138
4	An extended FE strategy for transition from continuum damage to mode I cohesive crack propagation. International Journal for Numerical and Analytical Methods in Geomechanics, 2007, 31, 213-238.	3.3	109
5	An unsupervised learning approach by novel damage indices in structural health monitoring for damage localization and quantification. Structural Health Monitoring, 2018, 17, 325-345.	7.5	100
6	Big Data Analytics and Structural Health Monitoring: A Statistical Pattern Recognition-Based Approach. Sensors, 2020, 20, 2328.	3.8	91
7	Impact induced composite delamination: state and parameter identification via joint and dual extended Kalman filters. Computer Methods in Applied Mechanics and Engineering, 2005, 194, 5242-5272.	6.6	67
8	Extended finite element simulation of quasi-brittle fracture in functionally graded materials. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 4013-4026.	6.6	65
9	Data-driven damage diagnosis under environmental and operational variability by novel statistical pattern recognition methods. Structural Health Monitoring, 2019, 18, 1416-1443.	7.5	64
10	Multi-scale Analysis of MEMS Sensors Subject to Drop Impacts. Sensors, 2007, 7, 1817-1833.	3.8	63
11	Investigation of computational and accuracy issues in POD-based reduced order modeling of dynamic structural systems. Engineering Structures, 2013, 54, 150-167.	5.3	58
12	Model Order Reduction and domain decomposition strategies for the solution of the dynamic elasticâ€"plastic structural problem. Computer Methods in Applied Mechanics and Engineering, 2015, 290, 127-155.	6.6	55
13	Damage Detection in Flexible Plates through Reduced-Order Modeling and Hybrid Particle-Kalman Filtering. Sensors, 2016, 16, 2.	3.8	54
14	Early damage assessment in large-scale structures by innovative statistical pattern recognition methods based on time series modeling and novelty detection. Advances in Engineering Software, 2020, 150, 102923.	3.8	54
15	Fast unsupervised learning methods for structural health monitoring with large vibration data from dense sensor networks. Structural Health Monitoring, 2020, 19, 1685-1710.	7.5	49
16	Modeling Impact-induced Failure of Polysilicon MEMS: A Multi-scale Approach. Sensors, 2009, 9, 556-567.	3.8	47
17	Online damage detection in structural systems via dynamic inverse analysis: A recursive Bayesian approach. Engineering Structures, 2018, 159, 28-45.	5.3	46
18	Numerical modeling of rate-dependent debonding processes in composites. Composite Structures, 2003, 61, 39-50.	5.8	45

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19	Numerical analysis of rate-dependent dynamic composite delamination. Composites Science and Technology, 2006, 66, 766-775.	7.8	45
20	Multi-scale analysis of polysilicon MEMS sensors subject to accidental drops: Effect of packaging. Microelectronics Reliability, 2009, 49, 340-349.	1.7	45
21	Strengthening and rehabilitation of exterior RC beam–column joints using carbon-FRP jacketing. Materials and Structures/Materiaux Et Constructions, 2016, 49, 5067-5083.	3.1	44
22	Structural health monitoring by a new hybrid feature extraction and dynamic time warping methods under ambient vibration and non-stationary signals. Measurement: Journal of the International Measurement Confederation, 2019, 134, 548-568.	5.0	41
23	Title is missing!. International Journal of Fracture, 2000, 104, 349-373.	2.2	40
24	Parameter identification of a time-dependent elastic-damage interface model for the simulation of debonding in composites. Composites Science and Technology, 2001, 61, 191-203.	7.8	40
25	A three-scale FE approach to reliability analysis of MEMS sensors subject to impacts. Meccanica, 2008, 43, 469-483.	2.0	40
26	Cost–Benefit Optimization of Structural Health Monitoring Sensor Networks. Sensors, 2018, 18, 2174.	3.8	40
27	Polysilicon MEMS accelerometers exposed to shocks: numerical–experimental investigation. Journal of Micromechanics and Microengineering, 2009, 19, 035023.	2.6	39
28	Parallelized sigma-point Kalman filtering for structural dynamics. Computers and Structures, 2012, 92-93, 193-205.	4.4	39
29	Monte carlo simulation of micro-cracking in polysilicon MEMS exposed to shocks. International Journal of Fracture, 2011, 167, 83-101.	2.2	38
30	Dual estimation of partially observed nonlinear structural systems: A particle filter approach. Mechanics Research Communications, 2012, 46, 54-61.	1.8	38
31	Damage localization under ambient excitations and non-stationary vibration signals by a new hybrid algorithm for feature extraction and multivariate distance correlation methods. Structural Health Monitoring, 2019, 18, 347-375.	7.5	38
32	Structural damage detection by a new iterative regularization method and an improved sensitivity function. Journal of Sound and Vibration, 2017, 399, 285-307.	3.9	36
33	Simulation of damage in composites by means of interface models: parameter identification. Composites Science and Technology, 2001, 61, 2299-2315.	7.8	35
34	OVERALL ELASTIC PROPERTIES OF POLYSILICON FILMS: A STATISTICAL INVESTIGATION OF THE EFFECTS OF POLYCRYSTAL MORPHOLOGY. International Journal for Multiscale Computational Engineering, 2011, 9, 327-346.	1.2	34
35	Optimization of sensor placement to detect damage in flexible plates. Engineering Optimization, 2013, 45, 659-676.	2.6	32
36	Structural Health Monitoring Sensor Network Optimization through Bayesian Experimental Design. ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2018, 4, .	1.7	32

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37	Stochastic system identification via particle and sigma-point Kalman filtering. Scientia Iranica, 2012, 19, 982-991.	0.4	31
38	Online damage detection via a synergy of proper orthogonal decomposition and recursive Bayesian filters. Nonlinear Dynamics, 2017, 89, 1489-1511.	5.2	30
39	Fully convolutional networks for structural health monitoring through multivariate time series classification. Advanced Modeling and Simulation in Engineering Sciences, 2020, 7, .	1.7	30
40	Two-Scale Simulation of Drop-Induced Failure of Polysilicon MEMS Sensors. Sensors, 2011, 11, 4972-4989.	3.8	29
41	Online structural health monitoring by model order reduction and deep learning algorithms. Computers and Structures, 2021, 255, 106604.	4.4	29
42	Non-parametric empirical machine learning for short-term and long-term structural health monitoring. Structural Health Monitoring, 2022, 21, 2700-2718.	7.5	29
43	Domain decomposition and model order reduction methods applied to the simulation of multi-physics problems in MEMS. Computers and Structures, 2013, 122, 113-127.	4.4	27
44	Mechanical Characterization of Polysilicon MEMS: A Hybrid TMCMC/POD-Kriging Approach. Sensors, 2018, 18, 1243.	3.8	25
45	MEMS-based surface mounted health monitoring system for composite laminates. Microelectronics Journal, 2013, 44, 598-605.	2.0	23
46	Simplified modelling of continous buried pipelines subject to earthquake fault rupture. Earthquake and Structures, 2010, 1, 253-267.	1.0	23
47	Micromechanical Characterization of Polysilicon Films through On-Chip Tests. Sensors, 2016, 16, 1191.	3.8	22
48	Mechanical characterization of Ti–5Al–2.5Sn ELI alloy at cryogenic and room temperatures. International Journal of Fracture, 2007, 146, 61-77.	2.2	21
49	SHM under varying environmental conditions: an approach based on model order reduction and deep learning. Computers and Structures, 2022, 266, 106790.	4.4	21
50	Simplified modeling of beam vibrations induced by a moving mass by regression analysis. Acta Mechanica, 2015, 226, 2147-2157.	2.1	20
51	Uncertainty Quantification of Microstructure–Governed Properties of Polysilicon MEMS. Micromachines, 2017, 8, 248.	2.9	20
52	Geometry optimization of a Lorentz force, resonating MEMS magnetometer. Microelectronics Reliability, 2014, 54, 1192-1199.	1.7	18
53	An Efficient Earth Magnetic Field MEMS Sensor: Modeling, Experimental Results, and Optimization. Journal of Microelectromechanical Systems, 2015, 24, 887-895.	2.5	18
54	Overall elastic domain of thin polysilicon films. Computational Materials Science, 2011, 50, 2993-3004.	3.0	17

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55	Damage detection in structural systems by improved sensitivity of modal strain energy and Tikhonov regularization method. International Journal of Dynamics and Control, 2014, 2, 509-520.	2.5	17
56	An iterative order determination method for time-series modeling in structural health monitoring. Advances in Structural Engineering, 2018, 21, 300-314.	2.4	17
57	Health Monitoring of Large-Scale Civil Structures: An Approach Based on Data Partitioning and Classical Multidimensional Scaling. Sensors, 2021, 21, 1646.	3.8	17
58	Structural health monitoring of civil structures: A diagnostic framework powered by deep metric learning. Computers and Structures, 2022, 271, 106858.	4.4	17
59	Numerical modeling of the interaction of pressurized large diameter gas buried pipelines with normal fault ruptures. Soil Dynamics and Earthquake Engineering, 2017, 101, 105-115.	3.8	16
60	Modeling of shock absorption in athletics track surfaces. Sports Engineering, 2015, 18, 1-10.	1.1	15
61	AN OPTIMAL SENSOR PLACEMENT METHOD FOR SHM BASED ON BAYESIAN EXPERIMENTAL DESIGN AND POLYNOMIAL CHAOS EXPANSION. , 2016, , .		15
62	Identification of a constitutive model for the simulation of time-dependent interlaminar debonding processes in composites. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 1861-1894.	6.6	14
63	Physically-Based Reduced Order Modelling of a Uni-Axial Polysilicon MEMS Accelerometer. Sensors, 2012, 12, 13985-14003.	3.8	14
64	Optimal design of sensor networks for damage detection. Procedia Engineering, 2017, 199, 1864-1869.	1.2	14
65	Damage Detection in Largely Unobserved Structures under Varying Environmental Conditions: An AutoRegressive Spectrum and Multi-Level Machine Learning Methodology. Sensors, 2022, 22, 1400.	3.8	14
66	Towards Safer Helmets: Characterisation, Modelling and Monitoring. Procedia Engineering, 2016, 147, 478-483.	1.2	13
67	Seismic control of buildings with active tuned mass damper through interval type-2 fuzzy logic controller including soil–structure interaction. Asian Journal of Civil Engineering, 2018, 19, 177-188.	1.6	13
68	Anisotropic behaviour of porous, ductile media. International Journal of Solids and Structures, 2001, 38, 2427-2451.	2.7	12
69	Sensor deployment over damage-containing plates: A topology optimization approach. Journal of Intelligent Material Systems and Structures, 2013, 24, 1105-1122.	2.5	12
70	Investigation of the Effectiveness and Robustness of an MEMS-Based Structural Health Monitoring System for Composite Laminates. IEEE Sensors Journal, 2014, 14, 2208-2215.	4.7	12
71	Effect of Imperfections Due to Material Heterogeneity on the Offset of Polysilicon MEMS Structures. Sensors, 2019, 19, 3256.	3.8	12
72	Stochastic Effects on the Dynamics of the Resonant Structure of a Lorentz Force MEMS Magnetometer. Actuators, 2019, 8, 36.	2.3	12

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73	Structural Health Monitoring for Condition Assessment Using Efficient Supervised Learning Techniques. Proceedings (mdpi), 2020, 42, 17.	0.2	12
74	An Autoencoder-Based Deep Learning Approach for Load Identification in Structural Dynamics. Sensors, 2021, 21, 4207.	3.8	12
75	Combined effects of temperature and humidity on the mechanical properties of polyurethane foams. Journal of Rheology, 2020, 64, 161-176.	2.6	11
76	Condition Assessment of Civil Structures for Structural Health Monitoring Using Supervised Learning Classification Methods. Iranian Journal of Science and Technology - Transactions of Civil Engineering, 2020, 44, 51-66.	1.9	11
77	On-Chip Testing: A Miniaturized Lab to Assess Sub-Micron Uncertainties in Polysilicon MEMS. Micro and Nanosystems, 2018, 10, 84-93.	0.6	10
78	Damage detection by updating structural models based on linear objective functions. Journal of Civil Structural Health Monitoring, 2014, 4, 165-176.	3.9	9
79	A one-dimensional variational formulation for quasibrittle fracture. Journal of Mechanics of Materials and Structures, 2006, 1, 1323-1343.	0.6	8
80	Experimental assessment of ductile damage in P91 steel at high temperature. International Journal of Damage Mechanics, 2014, 23, 567-587.	4.2	8
81	Statistical Investigation of the Mechanical and Geometrical Properties of Polysilicon Films through On-Chip Tests. Micromachines, 2018, 9, 53.	2.9	8
82	Analysis of ductile fracture in damaged pipelines by a geometric parameter method. Engineering Structures, 1999, 21, 924-936.	5.3	7
83	A Finite Element Flux-Corrected Transport Method for Wave Propagation in Heterogeneous Solids. Algorithms, 2009, 2, 1-18.	2.1	7
84	Coupled domain decomposition–proper orthogonal decomposition methods for the simulation of quasi-brittle fracture processes. Advanced Modeling and Simulation in Engineering Sciences, 2016, 3, .	1.7	7
85	Optimal Sensor Placement through Bayesian Experimental Design: Effect of Measurement Noise and Number of Sensors. Proceedings (mdpi), 2016, 1, .	0.2	7
86	Applying a new systematic fuzzy FMEA technique for risk management in light steel frame systems. Journal of Asian Architecture and Building Engineering, 2022, 21, 2481-2502.	2.0	7
87	Failure Assessment of Layered Composites Subject to Impact Loadings: a Finite Element, Sigma-Point Kalman Filter Approach. Algorithms, 2009, 2, 808-827.	2.1	6
88	Recent Advances in Computational Methods for Microsystems. Advanced Materials Research, 2013, 745, 13-25.	0.3	6
89	Microsystems and Mechanics. Procedia IUTAM, 2014, 10, 138-160.	1.2	6
90	Cost-Benefit Optimization of Sensor Networks for SHM Applications. Proceedings (mdpi), 2018, 2, 132.	0.2	6

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91	Fluid damping in compliant, comb-actuated torsional micromirrors. , 2014, , .		5
92	Multi-Scale Modeling of Shock-Induced Failure of Polysilicon MEMS. , 2007, , .		4
93	Smart sensing of damage in flexible plates through MEMS. International Journal of Mechanisms and Robotic Systems, 2014, 2, 67.	0.1	4
94	Modelling the cushioning properties of athletic tracks. Sports Engineering, 2018, 21, 453-463.	1.1	4
95	Boundary characteristic orthogonal polynomials method in the vibration analysis of multi-span plates acting upon a moving mass. Heliyon, 2019, 5, e01919.	3.2	4
96	Assessment of the shock adsorption properties of bike helmets: a numerical/experimental approach. Computer Methods in Biomechanics and Biomedical Engineering, 2020, 23, 169-181.	1.6	4
97	Mechanical Characterization of Polysilicon MEMS Devices: a Stochastic, Deep Learning-based Approach. , 2020, , .		4
98	Structural Integrity Assessment of a Pipeline Subjected to an Underwater Explosion. , 2011, , .		3
99	A multi-scale approach to wafer to wafer metallic bonding in MEMS. , 2013, , .		3
100	Optimal design of a resonating MEMS magnetometer: A multi-physics approach. , 2013, , .		3
101	An efficient earth magnetic field MEMS sensor: Modelling and experimental results. , 2014, , .		3
102	A Multiscale Approach to the Smart Deployment of Micro-Sensors over Lightweight Structures. Sensors, 2017, 17, 1632.	3.8	3
103	Estimation of Air Damping in Out-of-Plane Comb-Drive Actuators. Micromachines, 2019, 10, 263.	2.9	3
104	Identification of strength and toughness of quasi-brittle materials from spall tests: a Sigma-point Kalman filter approach. Inverse Problems in Science and Engineering, 2019, 27, 1318-1346.	1.2	3
105	A Hybrid Structural Health Monitoring Approach Based on Reduced-Order Modelling and Deep Learning. Proceedings (mdpi), 2020, 42, 67.	0.2	3
106	Stochastic Mechanical Characterization of Polysilicon MEMS: A Deep Learning Approach. Proceedings (mdpi), 2019, 42, .	0.2	3
107	Machine Learning-Based Prediction of the Seismic Bearing Capacity of a Shallow Strip Footing over a Void in Heterogeneous Soils. Algorithms, 2021, 14, 288.	2.1	3
108	Thermal, Mechanical and MultiPhysics Simulation and Experiments in Microelectronics and Microsystems (EUROSIME'2006). Sensor Letters, 2008, 6, 1-2.	0.4	3

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109	Hybrid Model-Based and Data-Driven Solution for Uncertainty Quantification at the Microscale. Micro and Nanosystems, 2022, 14, 281-286.	0.6	3
110	A Deep Neural Network, Multi-fidelity Surrogate Model Approach forÂBayesian Model Updating inÂSHM. Lecture Notes in Civil Engineering, 2023, , 1076-1086.	0.4	3
111	A multiscale-stochastic finite element approach to shock-induced polysilicon MEMS failure. , 2009, , .		2
112	Towards real-time health monitoring of structural systems via recursive Bayesian filtering and reduced order modelling. International Journal of Sustainable Materials and Structural Systems, 2015, 2, 27.	0.1	2
113	A 3D Numerical Model for the Optimization of Running Tracks Performance. Procedia Engineering, 2016, 147, 854-859.	1.2	2
114	Assessment of Micromechanically-Induced Uncertainties in the Electromechanical Response of MEMS Devices. Proceedings (mdpi), 2016, 1, .	0.2	2
115	A Stochastic Model to Describe the Scattering in the Response of Polysilicon MEMS. Engineering Proceedings, 2020, 2, 95.	0.4	2
116	Preliminary Valorization of Climatic Conditions Effects on Curing of Air Lime-Based Mortars for Restorative Applications in the Pasargadae and Persepolis World Heritage Sites. Applied Sciences (Switzerland), 2021, 11, 7925.	2.5	2
117	Experimental-Numerical Assessment of Impact-Induced Damage in Cross-Ply Laminates. Advanced Structured Materials, 2010, , 493-504.	0.5	2
118	Health Monitoring of Flexible Structures Via Surface-mounted Microsensors: Network Optimization and Damage Detection. , 2020, , .		2
119	Two-Scale Deep Learning Model for Polysilicon MEMS Sensors. , 2021, 2, .		2
120	Health Monitoring of Civil Structures: A MCMC Approach Based on a Multi-Fidelity Deep Neural Network Surrogate. , 2021, 2, .		2
121	Mechanics of Microsystems: A Recent Journey in a Fascinating Branch of Mechanics. , 2022, , 419-435.		2
122	Two-scale vs three-scale FE analyses of shock-induced failure in polysilicon MEMS. , 2010, , .		1
123	Damage localization in shear buildings by direct updating of physical properties. International Journal of Advanced Structural Engineering, 2014, 6, 1-12.	1.3	1
124	Online Damage Detection in Plates via Vibration Measurements. Conference Proceedings of the Society for Experimental Mechanics, 2015, , 85-91.	0.5	1
125	A Multiscale Approach to the Smart Deployment of Micro-Sensors over Flexible Plates. Proceedings (mdpi), 2016, 1, .	0.2	1
126	Origami-Inspired Smart Building Skin. Proceedings (mdpi), 2017, 1, 42.	0.2	1

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127	On the relationship between force reduction, loading rate and energy absorption in athletics tracks. Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology, 2018, 232, 71-78.	0.7	1
128	Optimal Placement of MEMS Sensors for Damage Detection in Composite Plates. Micro and Nanosystems, 2018, 10, 65-74.	0.6	1
129	SHM and Efficient Strategies for Reduced-Order Modeling. Engineering Proceedings, 2020, 2, 98.	0.4	1
130	Unscented Kalman Filter Empowered by Bayesian Model Evidence for System Identification in Structural Dynamics. , 2021, 2, .		1
131	The Effects of MTMD and HBI on the Performance of a Benchmark Building Against Near-Field Earthquakes Using Fuzzy Logic. Iranian Journal of Science and Technology - Transactions of Civil Engineering, 0, , 1.	1.9	1
132	Numerical-experimental comparison of low-g and high-g tests on a polysilicon MEMS accelerometer. , 2008, , .		0
133	Effect of Microstructure Evolution on the Overall Response of Porous-Plastic Solids. Materials, 2010, 3, 1031-1048.	2.9	0
134	A three-scale approach to the numerical simulation of metallic bonding for MEMS packaging. Microelectronics Reliability, 2014, 54, 2039-2043.	1.7	0
135	Uncertainty quantification in polysilicon MEMS through on-chip testing and reduced-order modelling. , 2017, , .		0
136	Health Monitoring of Composite Structures via MEMS Sensor Networks: Numerical and Experimental Results. Proceedings (mdpi), 2017, 1, 749.	0.2	0
137	Foreword: Proceedings of the 3rd International Electronic Conference on Sensors and Applications. Proceedings (mdpi), 2017, 1, .	0.2	0
138	Preface: Proceedings of the 4th International Electronic Conference on Sensors and Applications. Proceedings (mdpi), 2018, 2, .	0.2	0
139	Preface: Proceedings of the 5th International Electronic Conference on Sensors and Applications. Proceedings (mdpi), 2019, 4, 52.	0.2	0
140	Polysilicon MEMS Sensors: Sensitivity to Sub-Micron Imperfections. Proceedings (mdpi), 2018, 4, .	0.2	0
141	A Time Series Autoencoder for Load Identification via Dimensionality Reduction of Sensor Recordings. , 0, , .		0
142	Preface: Proceedings of the 6th International Electronic Conference on Sensors and Applications. Proceedings (mdpi), 2020, 42, .	0.2	0
143	A Deep Learning Approach for Polycrystalline Microstructure-Statistical Property Prediction. Lecture Notes in Computer Science, 2021, , 549-561.	1.3	0
144	Early Damage Detection for Partially Observed Structures with an Autoregressive Spectrum and Distance-Based Methodology. Lecture Notes in Civil Engineering, 2021, , 427-437.	0.4	0

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145	Preface: Proceedings of the 7th International Electronic Conference on Sensors and Applications. Engineering Proceedings, 2020, 2, 97.	0.4	0
146	On-Chip Assessment of Scattering in the Response of Si-Based Microdevices. , 0, , .		0
147	A Deep Learning-Based Approach to Uncertainty Quantification for Polysilicon MEMS. Engineering Proceedings, 2021, 4, 27.	0.4	0
148	Piezoelectric Ultrasonic Micromotor. , 0, , .		0
149	A Piezo-MEMS Device for Fatigue Testing of Thin Metal Layers. , 0, , .		0
150	Time-Fluid Field-Based Coordination. Lecture Notes in Computer Science, 2020, , 193-210.	1.3	0
151	Extended Fe Simulations of Crack Growth in Layered and Functionally Graded Materials. , 2006, , 931-932.		0
152	Impact Induced Composite Delamination: State and Parameter Identification via Unscented Kalman Filter. , 2006, , 1251-1252.		0
153	Preface: Proceedings of the 8th International Electronic Conference on Sensors and Applications. Engineering Proceedings, 2022, 10, .	0.4	0
154	Learning the Link between Architectural Form and Structural Efficiency: A Supervised Machine Learning Approach. , 2021, 2, .		0
155	A Generative Adversarial Network Based Autoencoder for Structural Health Monitoring. , 2021, 2, .		0