Nimal Rajapakse

List of Publications by Year
in descending order

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141 papers	5,020 citations	61945 43 h-index	114418 63 g-index
143 all docs	143 docs citations	143 times ranked	2413 citing authors

#	Article	IF	Citations
1	Elastic field of an isotropic matrix with a nanoscale elliptical inhomogeneity. International Journal of Solids and Structures, 2007, 44, 7988-8005.	1.3	165
2	Analytical Solution for Size-Dependent Elastic Field of a Nanoscale Circular Inhomogeneity. Journal of Applied Mechanics, Transactions ASME, 2007, 74, 568-574.	1.1	144
3	Dynamic response of a pile in a multi-layered soil to transient torsional and axial loading. Geotechnique, 1999, 49, 91-109.	2.2	132
4	Green's Functions for Transversely Isotropic Elastic Half Space. Journal of Engineering Mechanics - ASCE, 1993, 119, 1724-1746.	1.6	115
5	Modeling and identification of tool holderâ€“spindle interface dynamics. International Journal of Machine Tools and Manufacture, 2007, 47, 1333-1341.	6.2	109
6	Atomistic and continuum modelling of temperature-dependent fracture of graphene. International Journal of Fracture, 2014, 187, 199-212.	1.1	106
7	Dynamic Axial Load Transfer from Elastic Bar to Poroelastic Medium. Journal of Engineering Mechanics - ASCE, 1999, 125, 1048-1055.	1.6	102
8	Dynamic response of a multi-layered poroelastic medium. Earthquake Engineering and Structural Dynamics, 1995, 24, 703-722.	2.5	100
9	Analytical solutions for a surface-loaded isotropic elastic layer with surface energy effects. International Journal of Engineering Science, 2009, 47, 1433-1444.	2.7	99
10	A coupled thermoporoelastic model with thermo-osmosis and thermal-filtration. International Journal of Solids and Structures, 1998, 35, 4659-4683.	1.3	97
11	On a plane crack in piezoelectric solids. International Journal of Solids and Structures, 2001, 38, 7643-7658.	1.3	97
12	Dynamic Green's Functions of Homogeneous Poroelastic Halfâ€Plane. Journal of Engineering Mechanics - ASCE, 1994, 120, 2381-2404.	1.6	96
13	Self-heat generation in piezoelectric stack actuators used in fuel injectors. Smart Materials and Structures, 2009, 18, 045008.	1.8	94
14	Torsional buckling of carbon nanotubes based on nonlocal elasticity shell models. Computational Materials Science, 2010, 48, 736-742.	1.4	84
15	Mechanical degradation of fuel cell membranes under fatigue fracture tests. Journal of Power Sources, 2015, 274, 1208-1216.	4.0	84
16	On the longitudinal harmonic motion of an elastic bar embedded in an elastic half-space. International Journal of Solids and Structures, 1987, 23, 267-285.	1.3	81
17	Fracture analysis of magnetoelectroelastic solids by using path independent integrals. International Journal of Fracture, 2005, 131, 311-335.	1.1	79
18	Influence of temperature and free edges on the mechanical properties of graphene. Modelling and Simulation in Materials Science and Engineering, 2013, 21, 065017.	0.8	76

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19	Exact stiffness method for quasi-statics of a multi-layered poroelastic medium. International Journal of Solids and Structures, 1995, 32, 1535-1553.	1.3	75
20	Transient response of a circular cavity in a poroelastic medium. International Journal for Numerical and Analytical Methods in Geomechanics, 1993, 17, 357-383.	1.7	74
21	Joint slip in steel electric transmission towers. Engineering Structures, 2003, 25, 779-788.	2.6	72
22	Molecular Dynamics Simulations and Continuum Modeling of Temperature and Strain Rate Dependent Fracture Strength of Graphene With Vacancy Defects. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	1.1	72
23	Elastodynamic Green's Functions of Orthotropic Half Plane. Journal of Engineering Mechanics - ASCE, 1991, 117, 588-604.	1.6	70
24	On singularities in composite piezoelectric wedges and junctions. International Journal of Solids and Structures, 2000, 37, 3253-3275.	1.3	70
25	Simulation of ionomer membrane fatigue under mechanical and hygrothermal loading conditions. Journal of Power Sources, 2015, 279, 55-63.	4.0	66
26	Decay in Mechanical Properties of Catalyst Coated Membranes Subjected to Combined Chemical and Mechanical Membrane Degradation. Fuel Cells, 2015, 15, 204-213.	1.5	66
27	Finite element modelling of nanoscale inhomogeneities in an elastic matrix. Computational Materials Science, 2007, 41, 44-53.	1.4	65
28	Thermo-electro-mechanical Performance of Piezoelectric Stack Actuators for Fuel Injector Applications. Journal of Intelligent Material Systems and Structures, 2009, 20, 387-399.	1.4	61
29	On the load transfer from a rigid cylindrical inclusion into an elastic half space. International Journal of Solids and Structures, 1985, 21, 1213-1229.	1.3	59
30	Impedance curves for an elastic pile. Soil Dynamics and Earthquake Engineering, 1989, 8, 145-152.	1.9	59
31	Vertical vibrations of a rigid disk embedded in a poroelastic medium. International Journal for Numerical and Analytical Methods in Geomechanics, 1999, 23, 2075-2095.	1.7	58
32	Mechanical properties of catalyst coated membranes for fuel cells. Journal of Power Sources, 2013, 234, 38-47.	4.0	58
33	Analytical solution for an arbitrarily oriented void/crack and fracture of piezoceramics. Acta Materialia, 1999, 47, 1735-1747.	3.8	57
34	On the constitutive relations for catalyst coated membrane applied to in-situ fuel cell modeling. Journal of Power Sources, 2014, 252, 176-188.	4.0	57
35	Continuum Models Incorporating Surface Energy for Static and Dynamic Response of Nanoscale Beams. IEEE Nanotechnology Magazine, 2010, 9, 422-431.	1.1	56
36	Fatigue properties of catalyst coated membranes for fuelÂcells:ÂEx-situ measurements supported by numerical simulations. International Journal of Hydrogen Energy, 2016, 41, 8992-9003.	3.8	53

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37	Finite Element Modeling of Beams With Surface Energy Effects. Journal of Applied Mechanics, Transactions ASME, 2011, 78, .	1.1	50
38	Nonlocal Continuum Modeling and Molecular Dynamics Simulation of Torsional Vibration of Carbon Nanotubes. IEEE Nanotechnology Magazine, 2012, 11, 34-43.	1.1	48
39	Fundamental Solutions for a Poroelastic Half-Space With Compressible Constituents. Journal of Applied Mechanics, Transactions ASME, 1993, 60, 847-856.	1.1	47
40	Analytical saturated domain orientation textures and electromechanical properties of ferroelectric ceramics due to electric/mechanical poling. Journal of Applied Physics, 2007, 101, 054110.	1.1	47
41	A constrained domain-switching model for polycrystalline ferroelectric ceramics. Part I: Model formulation and application to tetragonal materials. Acta Materialia, 2007, 55, 6472-6480.	3.8	47
42	On the lateral harmonic motion of an elastic bar embedded in an elastic half-space. International Journal of Solids and Structures, 1987, 23, 287-303.	1.3	45
43	Stress Analysis of Borehole in Poroelastic Medium. Journal of Engineering Mechanics - ASCE, 1993, 119, 1205-1227.	1.6	43
44	Toughening of conducting cracks due to domain switching. Acta Materialia, 2001, 49, 877-885.	3.8	43
45	Quasi-static thermo-electro-mechanical behaviour of piezoelectric stack actuators. Smart Materials and Structures, 2008, 17, 015049.	1.8	43
46	Influence of Bolted-Joint Slippage on the Response of Transmission Towers Subjected to Frost-Heave. Advances in Structural Engineering, 2009, 12, 1-17.	1.2	42
47	Suctions, stresses and strengths in unsaturated sandâ€“bentonite. Engineering Geology, 2002, 64, 147-156.	2.9	41
48	Coupled consolidation of a porous medium with a cylindrical or a spherical cavity. International Journal for Numerical and Analytical Methods in Geomechanics, 1998, 22, 449-475.	1.7	40
49	A theoretical study of branched cracks in piezoelectrics. Acta Materialia, 2000, 48, 1865-1882.	3.8	39
50	Vertical vibration of an embedded rigid foundation in a poroelastic soil. Soil Dynamics and Earthquake Engineering, 2006, 26, 626-636.	1.9	38
51	Dynamics of rigid strip foundations embedded in orthotropic elastic soils. Earthquake Engineering and Structural Dynamics, 1991, 20, 927-947.	2.5	36
52	Simulation of pseudoelastic behaviour of SMA under cyclic loading. Computational Materials Science, 2003, 28, 663-674.	1.4	34
53	Influence of hydrogen functionalization on the fracture strength of graphene and the interfacial properties of grapheneâ€“polymer nanocomposite. Carbon, 2015, 93, 830-842.	5.4	34
54	Boundary element modeling of cracks in piezoelectric solids. Engineering Analysis With Boundary Elements, 2001, 25, 771-781.	2.0	33

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55	Domain switching induced fracture toughness variation in ferroelectrics. Smart Materials and Structures, 2001, 10, 203-211.	1.8	33
56	Modeling of the cyclic thermomechanical response of SMA wires at different strain rates. Smart Materials and Structures, 2007, 16, 2091-2101.	1.8	33
57	In-situ simulation of membrane fatigue in polymer electrolyte fuel cells. International Journal of Hydrogen Energy, 2017, 42, 11838-11844.	3.8	32
58	Torsion of a long cylindrical elastic bar partially embedded in a layered elastic half space. International Journal of Solids and Structures, 1984, 20, 1-11.	1.3	31
59	Response of an axially loaded elastic pile in a Gibson soil. Geotechnique, 1990, 40, 237-249.	2.2	31
60	An Exact Stiffness Method for Elastodynamics of a Layered Orthotropic Half-Plane. Journal of Applied Mechanics, Transactions ASME, 1994, 61, 339-348.	1.1	31
61	On the performance of Mindlin plate elements in modelling plate-elastic medium interaction: A comparative study. International Journal for Numerical Methods in Engineering, 1986, 23, 1229-1244.	1.5	30
62	Dislocations and internal loading in a semi-infinite elastic medium with surface stresses. Engineering Fracture Mechanics, 2010, 77, 3592-3603.	2.0	30
63	Three-dimensional extended Kantorovich solution for Levy-type rectangular laminated plates with edge effects. Composite Structures, 2014, 107, 167-176.	3.1	30
64	Ex situ measurement and modelling of crack propagation in fuel cell membranes under mechanical fatigue loading. International Journal of Hydrogen Energy, 2017, 42, 19257-19271.	3.8	30
65	Coupled Heat-Moisture-Air Transfer in Deformable Unsaturated Media. Journal of Engineering Mechanics - ASCE, 1998, 124, 1090-1099.	1.6	29
66	Elastostatic Infinite Elements for Layered Half Spaces. Journal of Engineering Mechanics - ASCE, 1985, 111, 1144-1158.	1.6	28
67	An efficient elastodynamic infinite element. International Journal of Solids and Structures, 1986, 22, 643-657.	1.3	27
68	Response of circular footings and anchor plates in non-homogeneous elastic soils. International Journal for Numerical and Analytical Methods in Geomechanics, 1991, 15, 457-470.	1.7	27
69	An indirect boundary integral equation method for poroelasticity. International Journal for Numerical and Analytical Methods in Geomechanics, 1995, 19, 587-614.	1.7	26
70	A constrained domain-switching model for polycrystalline ferroelectric ceramics. Part II: Combined switching and application to rhombohedral materials. Acta Materialia, 2007, 55, 6481-6488.	3.8	26
71	Seasonal variation in material properties of a flexible pavement. Canadian Journal of Civil Engineering, 2000, 27, 44-54.	0.7	25
72	Modeling of Shape Memory Alloys Based on Microplane Theory. Journal of Intelligent Material Systems and Structures, 2008, 19, 541-550.	1.4	25

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73	Penny-shaped crack in elastic medium with surface energy effects. Acta Mechanica, 2017, 228, 617-630.	1.1	25
74	Torsional vibrations of elastic foundations embedded in an elastic half-space. Earthquake Engineering and Structural Dynamics, 1987, 15, 279-297.	2.5	24
75	Dynamic Response of Elastic Plates on Viscoelastic Half Space. Journal of Engineering Mechanics - ASCE, 1989, 115, 1867-1881.	1.6	24
76	Dynamic interaction between flexible strip foundations. Earthquake Engineering and Structural Dynamics, 1991, 20, 441-454.	2.5	24
77	Stress analysis of piezoceramic cylinders. Smart Materials and Structures, 1997, 6, 169-177.	1.8	24
78	Multi-dimensional constitutive modeling of SMA during unstable pseudoelastic behavior. International Journal of Solids and Structures, 2007, 44, 6473-6490.	1.3	24
79	One-dimensional thermomechanical model for dynamic pseudoelastic response of shape memory alloys. Smart Materials and Structures, 2006, 15, 996-1008.	1.8	22
80	Microplane modelling of shape memory alloys. Physica Scripta, 2007, T129, 329-334.	1.2	22
81	A temperature-dependent two-step domain-switching model for ferroelectric materials. Acta Materialia, 2009, 57, 6135-6145.	3.8	22
82	A Model for Large Deflections of Nanobeams and Experimental Comparison. IEEE Nanotechnology Magazine, 2012, 11, 247-254.	1.1	22
83	Three-dimensional static analysis of Levy-type functionally graded plate with in-plane stiffness variation. Composite Structures, 2017, 168, 780-791.	3.1	22
84	A note on the elastodynamic load transfer problem. International Journal of Solids and Structures, 1988, 24, 963-972.	1.3	21
85	Transient response of an orthotropic elastic medium with a cavity. Wave Motion, 1995, 21, 231-252.	1.0	21
86	Eshelby tensor for piezoelectric inclusion and application to modeling of domain switching and evolution. Acta Materialia, 2003, 51, 4121-4134.	3.8	21
87	Electroelastic field of a piezoelectric annular finite cylinder. International Journal of Solids and Structures, 2005, 42, 3487-3508.	1.3	21
88	Time-Dependent Response of an Axially Loaded Elastic Bar in a Multilayered Poroelastic Medium. Journal of Engineering Mechanics - ASCE, 2007, 133, 578-587.	1.6	20
89	A Size-Dependent Continuum Model for Nanoscale Circular Plates. IEEE Nanotechnology Magazine, 2013, 12, 13-20.	1.1	19
90	Fracture parameters of a penny-shaped crack at the interface of a piezoelectric bi-material system. International Journal of Fracture, 2006, 141, 37-48.	1.1	18

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91	Field intensity factors of a penny-shaped crack in a magnetoelectroelastic layer. Journal of Alloys and Compounds, 2008, 449, 161-171.	2.8	18
92	BEM Analysis of Two-Dimensional Elastodynamic Problems of Anisotropic Solids. Journal of Engineering Mechanics - ASCE, 2001, 127, 149-156.	1.6	17
93	Be analysis of dynamics of rigid foundations embedded in transversely isotropic soils. Journal of the Chinese Institute of Engineers, Transactions of the Chinese Institute of Engineers,Series A/Chung-kuo Kung Ch'eng Hsuch K'an, 2000, 23, 275-288.	0.6	16
94	A torsion load transfer problem for a class of non-homogeneous elastic solids. International Journal of Solids and Structures, 1988, 24, 139-151.	1.3	15
95	ON COUPLED HEATâ€"MOISTURE TRANSFER IN DEFORMABLE POROUS MEDIA. Quarterly Journal of Mechanics and Applied Mathematics, 1994, 47, 53-68.	0.5	15
96	Impedances of embedded rigid strip foundations. Earthquake Engineering and Structural Dynamics, 1988, 16, 255-273.	2.5	14
97	Torsion of foundations embedded in a non-homogeneous soil with a weathered crust. Geotechnique, 1989, 39, 485-496.	2.2	14
98	Static and dynamic analyses of nanoscale rectangular plates incorporating surface energy. Acta Mechanica, 2017, 228, 2849-2863.	1.1	14
99	A VERTICAL LOAD IN THE INTERIOR OF A NON-HOMOGENEOUS INCOMPRESSIBLE ELASTIC HALF-SPACE. Quarterly Journal of Mechanics and Applied Mathematics, 1990, 43, 1-14.	0.5	13
100	Coupled fields in a deformable unsaturated medium. International Journal of Solids and Structures, 1999, 36, 4841-4868.	1.3	13
101	The interaction between a circular elastic plate and a transversely isotropic elastic half-space. International Journal for Numerical and Analytical Methods in Geomechanics, 1988, 12, 419-436.	1.7	12
102	Finite-Element Modeling of Circular Nanoplates. Journal of Nanomechanics & Micromechanics, 2013, 3, 59-66.	1.4	11
103	Atomistic Modelling of Size-Dependent Mechanical Properties and Fracture of Pristine and Defective Cove-Edged Graphene Nanoribbons. Nanomaterials, 2020, 10, 1422.	1.9	11
104	Atomic-scale finite element modelling of mechanical behaviour of graphene nanoribbons. International Journal of Mechanics and Materials in Design, 2019, 15, 145-157.	1.7	10
105	Indentation of a nanolayer on a substrate by a rigid cylinder in adhesive contact. Acta Mechanica, 2020, 231, 3235-3246.	1.1	9
106	Vertical Vibration of Multiple Flexible Strip Foundations on Multilayered Transversely Isotropic Poroelastic Soils. International Journal of Geomechanics, 2021, 21, .	1.3	9
107	Torsional stiffness of non-uniform and hollow rigid piers embedded in isotropic elastic media. International Journal for Numerical and Analytical Methods in Geomechanics, 1985, 9, 525-539.	1.7	8
108	Variational Scheme for Analysis of Torsion of Embedded Nonuniform Elastic Bars. Journal of Engineering Mechanics - ASCE, 1987, 113, 1534-1550.	1.6	8

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109	Dynamic response of a frame with SMA bracing. , 2003, , .		8
110	An improved theoretical process-zone model for delayed hydride cracking initiation at a blunt V-notch. Engineering Fracture Mechanics, 2018, 192, 262-275.	2.0	8
111	Atomistic simulation of tensile strength properties of graphene with complex vacancy and topological defects. Acta Mechanica, 2020, 231, 3387-3404.	1.1	8
112	Dynamics of a rigid strip bonded to a multilayered poroelastic medium. Solid Mechanics and Its Applications, 1996, , 353-369.	0.1	8
113	Rigid Inclusion in Nonhomogeneous Incompressible Elastic Halfâ€Space. Journal of Engineering Mechanics - ASCE, 1990, 116, 399-410.	1.6	6
114	Computational analysis of creep in ice and frozen soil based on Fish's unified model. Canadian Journal of Civil Engineering, 1993, 20, 120-132.	0.7	6
115	Effect of electric boundary conditions on crack propagation in ferroelectric ceramics. Acta Mechanica Sinica/Lixue Xuebao, 2014, 30, 153-160.	1.5	6
116	Axial stiffness of anchoring rods embedded in elastic media. Canadian Journal of Civil Engineering, 1990, 17, 321-328.	0.7	5
117	Angular distribution of energy release rates and fracture of piezoelectric solids. Smart Materials and Structures, 2004, 13, 519-527.	1.8	5
118	Numerical modelling of piezoelectric actuators exposed to hydrogen. Acta Mechanica, 2014, 225, 2943-2957.	1.1	5
119	Effects of free edges and vacancy defects on the mechanical properties of graphene. , 2014, , .		5
120	Performance of piezoelectric actuators in a hydrogen environment: Experimental study and finite element modelling. International Journal of Hydrogen Energy, 2015, 40, 3370-3380.	3.8	5
121	First principles study of hydrogen in lead zirconate titanate. Smart Materials and Structures, 2019, 28, 034002.	1.8	5
122	Numerical Modeling of Structureâ€Frozen Soil/Ice Interaction. Journal of Cold Regions Engineering - ASCE, 1990, 4, 133-151.	0.5	4
123	Mechanistic Models for Nanobeams with Surface Stress Effects. Journal of Engineering Mechanics - ASCE, 2018, 144, .	1.6	4
124	Practical stress solutions for single-edge V-notched tension specimen. Theoretical and Applied Fracture Mechanics, 2019, 102, 193-209.	2.1	4
125	A coupled analytical model for hydrostatic response of 1-3 piezocomposites. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2008, 55, 1847-1858.	1.7	3
126	Finite element simulation of strain rate effects on localized unstable pseudoelastic response of shape memory alloys. Journal of Mechanics of Materials and Structures, 2008, 3, 1811-1829.	0.4	3

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127	Finite element modelling of pressuremeter tests and footings on frozen soils. International Journal for Numerical and Analytical Methods in Geomechanics, 1992, 16, 351-375.	1.7	2
128	Creep response of laterally loaded piles in ice and permafrost. Geotechnique, 1993, 43, 223-240.	2.2	2
129	Closed-Form Solutions for Edge Dislocations in Piezoelectric Solids. Mechanics of Advanced Materials and Structures, 1999, 6, 97-115.	0.4	2
130	Coupled finite element modeling of piezothermoelastic materials. , 2007, 6526, 116.		2
131	Modelling of the cyclic behaviour of shape memory alloys during localized unstable mechanical response. Smart Materials and Structures, 2009, 18, 074005.	1.8	2
132	Electric Charge Loading of a Piezoelectric Solid Cylinder. , 2005, , 164-174.		2
133	Closed cracks in piezoelectric media subjected to electric field. , 2001, 4333, 231.		1
134	Dynamic thermo-electro-mechanical performance of piezoelectric stack actuators. , 2007, , .		1
135	Vertical vibrations of a rigid disk embedded in a poroelastic medium. International Journal for Numerical and Analytical Methods in Geomechanics, 1999, 23, 2075-2095.	1.7	1
136	<title>Stress and electric field concentrations in piezoelectrics with defects</title>. , 1998, , .		0
137	<title>Stress analysis of piezoceramics with defects</title>. , 1998, 3321, 644.		0
138	<title>Modeling of electrode-ceramic interaction in a multilayered ferroelectric actuator</title>. , 2002, , .		0
139	Discussion of â€œBEM Analysis of Two-Dimensional Elastodynamic Problems of Anisotropic Solidsâ€•by S. Ahmad, F. Leyte, and R. K. N. D. Rajapakse. Journal of Engineering Mechanics - ASCE, 2003, 129, 132-133.	1.6	0
140	Multi-dimensional thermomechanical model for pseudoelastic response of SMA. , 2006, , .		0
141	Variational Formulation of Interaction between Elastic Plate and Elastic Medium under the Influence of Surface Energy. MATEC Web of Conferences, 2018, 206, 01012.	0.1	0