Donald J Leo

List of Publications by Year in descending order

101 papers	3,140 citations	218592 26 h-index	168321 53 g-index
120 all docs	120 docs citations	120 times ranked	1711 citing authors

#	Article	IF	Citations
1	Development of a smartphone-based peanut data logging system. Precision Agriculture, 2021, 22, 1006-1018.	3.1	4
2	A skin-inspired soft material with directional mechanosensation. Bioinspiration and Biomimetics, 2021, 16, 046014.	1.5	5
3	The voltage-dependence of MscL has dipolar and dielectric contributions and is governed by local intramembrane electric field. Scientific Reports, 2018, 8, 13607.	1.6	6
4	Encapsulating Networks of Droplet Interface Bilayers in a Thermoreversible Organogel. Scientific Reports, 2018, 8, 6494.	1.6	19
5	Mechanics of Droplet Interface Bilayer â€œUnzippingâ€•Defines the Bandwidth for the Mechanotransduction Response of Reconstituted MscL. Advanced Materials Interfaces, 2017, 4, 1600805.	1.9	16
6	Flow field sensing with bio-inspired artificial hair cell arrays. Sensors and Actuators B: Chemical, 2016, 236, 805-814.	4.0	10
7	Bioderived Smart Materials. , 2016, , 238-251.		0
8	The Gating Mechanism of Mechanosensitive Channels in Droplet Interface Bilayers. Materials Research Society Symposia Proceedings, 2015, 1722, 32.	0.1	0
9	Multifunctional, Micropipette-based Method for Incorporation And Stimulation of Bacterial Mechanosensitive Ion Channels in Droplet Interface Bilayers. Journal of Visualized Experiments, 2015, , .	0.2	5
10	Activation of bacterial channel MscL in mechanically stimulated droplet interface bilayers. Scientific Reports, 2015, 5, 13726.	1.6	43
11	Deterministic model of biomolecular networks with stimuli-responsive properties. Journal of Intelligent Material Systems and Structures, 2015, 26, 921-930.	1.4	10
12	Mechanosensitive Channels Activity in a Droplet Interface Bilayer System. Materials Research Society Symposia Proceedings, 2014, 1621, 171-176.	0.1	7
13	Multi-scale modeling of ion transport in high-strain ionomers with conducting powder electrodes. Journal of Intelligent Material Systems and Structures, 2014, 25, 1196-1210.	1.4	2
14	Biomolecular hydrogel-based lipid bilayer array system. Proceedings of SPIE, 2013, , .	0.8	0
15	Softening and heating effects in ionic polymer transducers: An experimental investigation. Journal of Intelligent Material Systems and Structures, 2013, 24, 1266-1277.	1.4	3
16	Dynamic Characterization of Biomimetic Artificial Hair Cells. , 2013, , .		0
17	Using cellular energy conversion and storage mechanics for bio-inspired energy harvesting. Proceedings of SPIE, 2013, , .	0.8	2
18	Network modeling of membrane-based artificial cellular systems. Proceedings of SPIE, 2013, , .	0.8	0

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19	Biomimetic jellyfish-inspired underwater vehicle actuated by ionic polymer metal composite actuators. Smart Materials and Structures, 2012, 21, 094026.	1.8	111
20	Experimental demonstration of the active area model in extensional ionic polymer transducers. Smart Materials and Structures, 2012, 21, 105034.	1.8	6
21	Formation, encapsulation, and validation of membrane-based artificial hair cell sensors. Proceedings of SPIE, 2012, , .	0.8	1
22	Bioadhesives. , 2012, , 194-201.		0
23	Bacterial Electrical Conduction. , 2012, , 173-173.		0
24	Hair cell inspired mechanotransduction with a gel-supported, artificial lipid membrane. Soft Matter, 2011, 7, 4644.	1.2	62
25	Membrane-based biomolecular smart materials. Smart Materials and Structures, 2011, 20, 094018.	1.8	28
26	Hair cell sensing with encapsulated interface bilayers. Proceedings of SPIE, 2011, , .	0.8	5
27	Single channel conductance modeling of the peptide alamethicin in synthetically formed bilayers. Proceedings of SPIE, 2011, , .	0.8	0
28	Formation and Encapsulation of Biomolecular Arrays for Developing Arrays of Membrane-Based Artificial Hair Cell Sensors. , 2011, , .		2
29	High surface area electrodes in ionic polymer transducers: Numerical and experimental investigations of the electro-chemical behavior. Journal of Applied Physics, 2011, 109, .	1.1	46
30	Biomolecular material systems with encapsulated interface bilayers. Materials Research Society Symposia Proceedings, 2011, 1301, 267.	0.1	1
31	Modeling and optimization of IPMC actuator for autonomous jellyfish vehicle (AJV). Proceedings of SPIE, 2011, , .	0.8	2
32	Design and Development of a Biomimetic Jellyfish Robot That Features Ionic Polymer Metal Composites Actuators. , 2011, , .		8
33	Cell-inspired electroactive polymer materials incorporating biomolecular materials. , 2011, , .		0
34	Physical encapsulation and controlled assembly of lipid bilayers within flexible substrates. Proceedings of SPIE, 2010, , .	0.8	0
35	Modeling bilayer systems as electrical networks. Proceedings of SPIE, 2010, , .	0.8	0
36	Oligomeric A₂+ B₃synthesis of highly branched polysulfone ionomers: novel candidates for ionic polymer transducers. Polymer International, 2010, 59, 25-35.	1.6	18

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37	Chemoelectrical Energy Conversion of Adenosine Triphosphate using ATPases. Journal of Intelligent Material Systems and Structures, 2010, 21, 201-212.	1.4	6
38	Encapsulated Interface Bilayers for Durable Biomolecular Materials. , 2010, , .		0
39	Bilayer Formation between Lipid-Encased Hydrogels Contained in Solid Substrates. ACS Applied Materials & Interfaces, 2010, 2, 3654-3663.	4.0	35
40	Effect of Ionic Liquid on Mechanical Properties and Morphology of Zwitterionic Copolymer Membranes. Macromolecules, 2010, 43, 790-796.	2.2	61
41	Regulated Attachment Method for Reconstituting Lipid Bilayers of Prescribed Size within Flexible Substrates. Analytical Chemistry, 2010, 82, 959-966.	3.2	81
42	Tailored Currentâ€"Voltage Relationships of Droplet-Interface Bilayers Using Biomolecules and External Feedback Control. Journal of Intelligent Material Systems and Structures, 2009, 20, 1233-1247.	1.4	29
43	Electromechanical performance and membrane stability of novel ionic polymer transducers constructed in the presence of ionic liquids. , 2009, , .		2
44	Forced and free displacement characterization of ionic polymer transducers. , 2009, , .		1
45	Ionomer design for augmented charge transport in novel ionic polymer transducers. Smart Materials and Structures, 2009, 18, 104005.	1.8	19
46	Thermodynamical Modeling of the Electromechanical Behavior of Ionic Polymer Metal Composites. Journal of Intelligent Material Systems and Structures, 2009, 20, 741-750.	1.4	49
47	Electrochemical response in ionic polymer transducers: An experimental and theoretical study. Composites Science and Technology, 2008, 68, 1173-1180.	3.8	103
48	Beyond Nafion: Charged Macromolecules Tailored for Performance as Ionic Polymer Transducers. Macromolecules, 2008, 41, 7765-7775.	2.2	124
49	Single-Walled Carbon Nanotubes â€" Ionic Polymer Electroactive Hybrid Transducers. Journal of Intelligent Material Systems and Structures, 2008, 19, 905-915.	1.4	56
50	Characterization and Modeling of the Nonlinear Response of Ionic Polymer Actuators. JVC/Journal of Vibration and Control, 2008, 14, 1151-1173.	1.5	13
51	Modeling the electrical impedance response of ionic polymer transducers. Journal of Applied Physics, 2008, 104, 014512.	1.1	28
52	A correlation between extensional displacement and architecture of ionic polymer transducers. Proceedings of SPIE, 2008, , .	0.8	0
53	High surface area electrodes in ionic polymer transducers: numerical and experimental investigations of the chemo-electric behavior. , 2008, , .		2
54	Optimization of active electrodes for novel ionomer-based ionic polymer transducers. Proceedings of SPIE, 2008, , .	0.8	2

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55	Transport modeling in ionomeric polymer transducers and its relationship to electromechanical coupling. Journal of Applied Physics, 2007, 101, 024912.	1.1	109
56	Position Control of a Square-plate Ionic Polymer Actuator Using Output Feedback. Journal of Intelligent Material Systems and Structures, 2007, 18, 219-234.	1.4	4
57	Counterion and Diluent Effects on the Response of Ionic Polymer Transducers. Journal of Intelligent Material Systems and Structures, 2007, 18, 677-692.	1.4	4
58	Chemo-electric characterization and modeling of the high surface area electrodes in ionic polymer transducers. , 2007, , .		2
59	Characterization and Variational Modeling of Ionic Polymer Transducers. Journal of Vibration and Acoustics, Transactions of the ASME, 2007, 129, 113-120.	1.0	21
60	Monte Carlo simulation of ion transport of the high strain ionomer with conducting powder electrodes. , 2007, , .		0
61	Development of ionic polymer transducers as flow shear stress sensors: effects of electrode architecture. , 2007, , .		4
62	Characterization and modeling of extensional and bending actuation in ionomeric polymer transducers. Smart Materials and Structures, 2007, 16, 1348-1360.	1.8	51
63	Deformation of bilayer lipid membranes in bioâ€inspired materials and systems. Proceedings in Applied Mathematics and Mechanics, 2007, 7, 4020023-4020024.	0.2	1
64	Direct assembly process: a novel fabrication technique for large strain ionic polymer transducers. Journal of Materials Science, 2007, 42, 7031-7041.	1.7	110
65	Variational modeling of ionic polymer plate structures. , 2006, , .		0
66	Microhydraulic Actuation Using Biological Ion Transporters Reconstituted on Artificial BLM. Materials Research Society Symposia Proceedings, 2006, 944, 1.	0.1	1
67	Dynamic modeling of the nonlinear response of ionic polymer actuators. , 2006, 6166, 182.		1
68	High-strain ionomericâ€“ionic liquid electroactive actuators. Sensors and Actuators A: Physical, 2006, 126, 173-181.	2.0	222
69	A model of charge transport and electromechanical transduction in ionic liquid-swollen Nafion membranes. Polymer, 2006, 47, 6782-6796.	1.8	110
70	Bioenergetics and mechanical actuation analysis with membrane transport experiments for use in biomimetic nastic structures. Journal of Materials Research, 2006, 21, 2058-2067.	1.2	20
71	Modeling of Ion Transport in High Strain Ionomers by Monte Carlo Simulation Compared to Continuum Model. , 2006, , .		2
72	A Design Model for Bending and Extensional Ionic Polymer Transducers. , 2006, , .		0

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73	Electrical impedance modeling of ionic polymer transducers. , 2005, 5761, 69.		6
74	Computational models of ionic transport and electromechanical transduction in ionomeric polymer transducers (Invited Paper). , 2005, , .		21
75	<title>A variational model of ionomeric polymer actuators and sensors</title>. , 2005, , .		1
76	Characterization of the solvent-induced nonlinear response of ionic polymer actuators. , 2005, , .		4
77	Application of Rotational Isomeric State Theory to Ionic Polymer Stiffness Predictions. Journal of Materials Research, 2005, 20, 2443-2455.	1.2	13
78	Bandwidth Characterization in the Micropositioning of Ionic Polymer Actuators. Journal of Intelligent Material Systems and Structures, 2005, 16, 3-13.	1.4	16
79	Identification of the Nonlinear Response of Ionic Polymer Actuators using the Volterra Series. JVC/Journal of Vibration and Control, 2005, 11, 519-541.	1.5	20
80	Computational analysis of ionic polymer cluster energetics. Journal of Applied Physics, 2005, 97, 013541.	1.1	27
81	Ionic polymer cluster energetics: Computational analysis of pendant chain stiffness and charge imbalance. Journal of Applied Physics, 2005, 97, 123530.	1.1	16
82	Investigation of Extensional Actuation Strain in Ionomeric Polymer Transducers. , 2005, , .		1
83	Electromechanical transduction in multilayer ionic transducers. Smart Materials and Structures, 2004, 13, 1081-1089.	1.8	29
84	on the relationship between the electric double layer and actuation in ionomeric polymer transducers. Materials Research Society Symposia Proceedings, 2004, 855, 87.	0.1	2
85	Electromechanical Model of an Active Polymer Thin Circular Disk. , 2004, , 171.		3
86	High-Strain Ionomeric-Ionic Liquid Composites via Electrode Tailoring. , 2004, , 145.		4
87	Modeling of electromechanical charge sensing in ionic polymer transducers. Mechanics of Materials, 2004, 36, 421-433.	1.7	180
88	Ionic liquids as stable solvents for ionic polymer transducers. Sensors and Actuators A: Physical, 2004, 115, 79-90.	2.0	338
89	Electrostatic analysis of cluster response to electrical and mechanical loading in ionic polymers with cluster morphology. Smart Materials and Structures, 2004, 13, 323-336.	1.8	20
90	Nonlinear identification of ionic polymer actuator systems. , 2004, , .		1

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91	Effects of electrode morphology on the performance of BPSH and PATS ionic polymer transducers. , 2004, , .		9
92	Ionic liquids as novel solvents for ionic polymer transducers. , 2004, , .		10
93	Effects of counter-ion, solvent type, and loading condition on the material response of ionic polymer transducers. , 2004, , .		5
94	The Use of Active Ionic Polymers in Dynamic Skin Friction Measurements. , 2004, , 667.		6
95	Hybrid Actuation in Coupled Ionic / Conducting Polymer Devices. Materials Research Society Symposia Proceedings, 2003, 785, 821.	0.1	2
96	Electromechanical modeling of charge sensing in ionic polymers. , 2003, 5053, 13.		4
97	Linear constitutive model of ionic polymer bender transducers. , 2003, 5051, 88.		1
98	Feedback-controlled oscillatory motor using ionic polymer materials. , 2003, , .		0
99	Electroactive Polymers Based on Novel Ionomers. , 2003, , .		4
100	Electromechanical Modeling and Characterization of Ionic Polymer Benders. Journal of Intelligent Material Systems and Structures, 2002, 13, 51-60.	1.4	132
101	Feedback Control of the Bending Response of Ionic Polymer Actuators. Journal of Intelligent Material Systems and Structures, 2001, 12, 143-155.	1.4	85