Elisabeth Smela

List of Publications by Year
in descending order

146 papers	7,679 citations	101384 36 h-index	62479 80 g-index
155 all docs	155 docs citations	155 times ranked	6539 citing authors

#	Article	IF	Citations
1	Adaptive Tracking Control of Soft Robots Using Integrated Sensing Skins and Recurrent Neural Networks. , 2021, , .		2
2	High resolution monitoring of chemotherapeutic agent potency in cancer cells using a CMOS capacitance biosensor. Biosensors and Bioelectronics, 2019, 142, 111501.	5.3	17
3	Recognizing Hemiparetic Ankle Deficits Using Wearable Pressure Sensors. IEEE Journal of Translational Engineering in Health and Medicine, 2019, 7, 1-3.	2.2	1
4	Correlation of Capacitance and Microscopy Measurements Using Image Processing for a Lab-on-CMOS Microsystem. IEEE Transactions on Biomedical Circuits and Systems, 2019, 13, 1214-1225.	2.7	9
5	System on a Chip for Automated Cell Assays using a Lab-on-CMOS Platform. , 2019, , .		0
6	An Imaging Platform for Real-Time In Vitro Microscopic Imaging for Lab-on-CMOS Systems. , 2019, , .		4
7	Characterization of a compliant multi-layer system for tactile sensing with enhanced sensitivity and range. Smart Materials and Structures, 2018, 27, 065005.	1.8	7
8	LTCC Packaged Ring Oscillator Based Sensor for Evaluation of Cell Proliferation. Sensors, 2018, 18, 3346.	2.1	11
9	Compliant multi-layer tactile sensing for enhanced identification of human touch. Smart Materials and Structures, 2018, 27, 125009.	1.8	11
10	Real-Time Measurements of Cell Proliferation Using a Lab-on-CMOS Capacitance Sensor Array. IEEE Transactions on Biomedical Circuits and Systems, 2018, 12, 510-520.	2.7	39
11	System Integration of IC chips for Lab-on-CMOS Applications. , 2018, , .		8
12	Challenges in realizing a self-contained hydraulically-driven contractile fiber actuator. Faraday Discussions, 2017, 199, 465-485.	1.6	1
13	Electroactuators: from understanding to micro-robotics and energy conversion: general discussion. Faraday Discussions, 2017, 199, 525-545.	1.6	2
14	Targeted Feature Recognition Using Mechanical Spatial Filtering with a Low-Cost Compliant Strain Sensor. Scientific Reports, 2017, 7, 5118.	1.6	6
15	Electrotunable wetting, and micro- and nanofluidics: general discussion. Faraday Discussions, 2017, 199, 195-237.	1.6	2
16	A New Multiscale Bioinspired Compliant Sensor. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 163-169.	0.3	1
17	Characterization of an active micro-electrode array with spike detection and asynchronous readout. , 2017, , .		1
18	Fabrication of a Miniature Paper-Based Electroosmotic Actuator. Polymers, 2016, 8, 400.	2.0	10

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19	Stretchable touch-sensing skin over padding for co-robots. Smart Materials and Structures, 2016, 25, 055006.	1.8	18
20	System-on-Chip Considerations for Heterogeneous Integration of CMOS and Fluidic Bio-Interfaces. IEEE Transactions on Biomedical Circuits and Systems, 2016, 10, 1129-1142.	2.7	28
21	Olfaction on a chip. Sensors and Actuators B: Chemical, 2016, 235, 74-78.	4.0	14
22	Lab-on-CMOS capacitance sensor array for real-time cell viability measurements with I2C readout. , 2016, , .		13
23	Low Temperature Co-fired Ceramic Package for Lab-on-CMOS Applied in Cell Viability Monitoring. Procedia Engineering, 2015, 120, 1079-1082.	1.2	6
24	Thermal imaging using polymer nanocomposite temperature sensors. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2239-2245.	0.8	18
25	Bubbleâ€free electrokinetic flow with propylene carbonate. Electrophoresis, 2015, 36, 2622-2629.	1.3	4
26	Microbumpers maintain superhydrophobicity of nanostructured surfaces upon touch. Applied Surface Science, 2015, 349, 705-714.	3.1	11
27	Design of bending multi-layer electroactive polymer actuators. Smart Materials and Structures, 2015, 24, 045032.	1.8	23
28	Mechanics of Compliant Multifunctional Robotic Structures. Conference Proceedings of the Society for Experimental Mechanics, 2015, , 59-66.	0.3	1
29	An active micro-electrode array with spike detection and asynchronous readout. , 2014, , .		3
30	High-throughput particle separation and concentration using spiral inertial filtration. Biomicrofluidics, 2014, 8, 024105.	1.2	31
31	System-on-chip considerations for CMOS fluidic and biointerface applications. , 2014, , .		2
32	Characterization of Conjugated Polymer Actuation under Cerebral Physiological Conditions. Advanced Healthcare Materials, 2014, 3, 1026-1035.	3.9	18
33	Multiplex Quantitative Measurement of mRNAs From Fixed Tissue Microarray Sections. Applied Immunohistochemistry and Molecular Morphology, 2014, 22, 323-330.	0.6	1
34	Packaging commercial CMOS chips for lab on a chip integration. Lab on A Chip, 2014, 14, 1753.	3.1	58
35	Mechanics of Multifunctional Skin Structures. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 107-114.	0.3	1
36	Stable electroosmotically driven actuators. Proceedings of SPIE, 2013, , .	0.8	4

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37	New compliant strain gauges for self-sensing dynamic deformation of flapping wings on miniature air vehicles. Smart Materials and Structures, 2013, 22, 085031.	1.8	30
38	Navigating conjugated polymer actuated neural probes in a brain phantom. , 2012, , .		2
39	Polymer filters for ultraviolet-excited integrated fluorescence sensing. Journal of Micromechanics and Microengineering, 2012, 22, 095018.	1.5	5
40	Design of compliant meanders for applications in MEMS, actuators, and flexible electronics. Smart Materials and Structures, 2012, 21, 075033.	1.8	13
41	A novel surface modification technique for forming porous polymer monoliths in poly(dimethylsiloxane). Biomicrofluidics, 2012, 6, 016506.	1.2	14
42	Edge Effects Determine the Direction of Bilayer Bending. Nano Letters, 2011, 11, 2280-2285.	4.5	127
43	Quantifying mRNA levels across tissue sections with 2D-RT-qPCR. Analytical and Bioanalytical Chemistry, 2011, 400, 3383-3393.	1.9	3
44	Elastomers filled with exfoliated graphite as compliant electrodes. Carbon, 2010, 48, 2409-2417.	5.4	126
45	PDMS/graphite stretchable electrodes for dielectric elastomer actuators. Proceedings of SPIE, 2010, , .	0.8	7
46	Mechanical characterization of conducting polymer actuated neural probes under physiological settings. , 2010, , .		1
47	Challenges in the microfabrication of dielectric elastomer actuators. Proceedings of SPIE, 2010, , .	0.8	10
48	Abstract 2999: Assessment of microRNA expression in two-dimensional histopathological fields of breast cancer. , 2010, , .		0
49	Post-CMOS packaging methods for integrated biosensors. , 2009, , .		10
50	A new EAP based on electroosmotic flow: nastic actuators. , 2009, , .		3
51	Electroosmotically driven microfluidic actuators. Sensors and Actuators B: Chemical, 2009, 141, 263-269.	4.0	28
52	Chronoamperometric Study of Conformational Relaxation in PPy(DBS). Journal of Physical Chemistry B, 2009, 113, 1277-1293.	1.2	56
53	Experimental Studies of Ion Transport in PPy(DBS). Journal of Physical Chemistry C, 2009, 113, 369-381.	1.5	80
54	Color and Volume Change in PPy(DBS). Journal of Physical Chemistry C, 2009, 113, 359-368.	1.5	74

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55	Patterning PDMS using a combination of wet and dry etching. Journal of Micromechanics and Microengineering, 2009, 19, 047002.	1.5	76
56	Development of a Model for Charge Transport in Conjugated Polymers. Journal of Physical Chemistry C, 2009, 113, 382-401.	1.5	54
57	2D-PCR: a method of mapping DNA in tissue sections. Lab on A Chip, 2009, 9, 3526.	3.1	5
58	In situ electrochemical control of electroactive polymer films on a CMOS chip. Sensors and Actuators B: Chemical, 2008, 129, 699-704.	4.0	17
59	The design of dielectrophoretic flow-through sorters using a figure of merit. Journal of Micromechanics and Microengineering, 2008, 18, 015001.	1.5	7
60	Parasitic trap cancellation using multiple frequency dielectrophoresis, demonstrated by loading cells into cages. Lab on A Chip, 2008, 8, 550.	3.1	22
61	Conjugated Polymer Actuators. MRS Bulletin, 2008, 33, 197-204.	1.7	74
62	Bending Actuators with Maximum Curvature and Force and Zero Interfacial Stress. Journal of Intelligent Material Systems and Structures, 2007, 18, 181-186.	1.4	45
63	Compliant electrodes based on platinum salt reduction in a urethane matrix. Smart Materials and Structures, 2007, 16, S272-S279.	1.8	10
64	Integrated cell-based sensors and cell clinics utilizing conjugated polymer actuators. , 2007, , .		5
65	Improving PPy Adhesion by Surface Roughening. Journal of Physical Chemistry C, 2007, 111, 11329-11338.	1.5	47
66	Optical filtering technologies for integrated fluorescence sensors. Lab on A Chip, 2007, 7, 955.	3.1	146
67	Stretchable Electrodes with High Conductivity and Photoâ€Patternability. Advanced Materials, 2007, 19, 2629-2633.	11.1	56
68	Multiple frequency dielectrophoresis. Electrophoresis, 2007, 28, 3145-3155.	1.3	67
69	Integrated Fluorescence Sensing for Lab-on-a-chip Devices. , 2006, , .		8
70	Cell Clinics Technology Platform for Cell-Based Sensing. , 2006, , .		0
71	Benchtop Polymer MEMS. Journal of Microelectromechanical Systems, 2006, 15, 1108-1120.	1.7	30
72	BioLabs-On-A-Chip: Monitoring Cells using CMOS Biosensors. , 2006, , .		1

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73	Cycling conjugated polymers with different cations. , 2006, , .		4
74	Fast switching of conjugated polymer films. , 2006, , .		3
75	Modeling charge transport in conjugated polymers. , 2006, , .		3
76	Characterization and modeling of PPy bilayer microactuators. Sensors and Actuators B: Chemical, 2006, 115, 596-609.	4.0	104
77	Modeling the performance of a long-period Bragg grating ambient-index sensor. Smart Materials and Structures, 2006, 15, 821-828.	1.8	4
78	Novel compliant electrodes based on platinum salt reduction. , 2006, 6168, 474.		5
79	Polypyrrole/gold bilayer microactuators: response time and temperature effects. , 2006, , .		0
80	Understanding ion transport in conjugated polymers. , 2005, 5759, 414.		2
81	Improving adhesion of polypyrrole to gold for long-term actuation. , 2005, , .		3
82	Polaron-induced conformation change in single polypyrrole chain: An intrinsic actuation mechanism. International Journal of Quantum Chemistry, 2005, 102, 980-985.	1.0	52
83	Integrating conjugated polymer microactuators with CMOS sensing circuitry for studying living cells. , 2005, , .		9
84	Polypyrrole/gold bilayer characterization. , 2005, , .		2
85	Polyaniline actuators. Synthetic Metals, 2005, 151, 43-48.	2.1	32
86	Polyaniline actuators. Synthetic Metals, 2005, 151, 25-42.	2.1	132
87	Effects of monomer and electrolyte concentrations on actuation of PPy(DBS) bilayers. Synthetic Metals, 2005, 155, 18-26.	2.1	50
88	Cell-lab on a chip: a CMOS-based microsystem for culturing and monitoring cells. , 2004, 2004, 2534-7.		11
89	Visualizing Ion Currents in Conjugated Polymers. Advanced Materials, 2004, 16, 1605-1609.	11.1	82
90	Development of Solid-in-Hollow Electrochemical Linear Actuators Using Highly Conductive Polyaniline. Chemistry of Materials, 2004, 16, 1615-1621.	3.2	94

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91	Conjugated Polymer Actuators for Biomedical Applications. Advanced Materials, 2003, 15, 481-494.	11.1	1,121
92	Direct Strain Measurement of Polypyrrole Actuators Controlled by the Polymer/Gold Interface. Chemistry of Materials, 2003, 15, 916-922.	3.2	82
93	<title>In-situ measurement of conducting polymers on evaporated and electrochemically deposited Au surfaces</title>. , 2002, , .		2
94	Use of Ionic Liquids for pi -Conjugated Polymer Electrochemical Devices. Science, 2002, 297, 983-987.	6.0	1,155
95	Volume Change in Polypyrrole Studied by Atomic Force Microscopy. Journal of Physical Chemistry B, 2001, 105, 9395-9405.	1.2	206
96	Electrochemical actuation of gilded polyaniline bilayers in aqueous acid solutions. , 2001, , .		3
97	The effects of varying deposition current density on bending behaviour in PPy(DBS)-actuated bending beams. Sensors and Actuators A: Physical, 2001, 89, 175-184.	2.0	60
98	Microfabricating Conjugated Polymer Actuators. , 2000, 290, 1540-1545.		848
99	Characteristics of polythiophene surface light emitting diodes. Synthetic Metals, 2000, 113, 103-114.	2.1	38
100	<title>Applications of polypyrrole microactuators</title>. , 1999, 3669, 377.		5
101	On-chip microelectrodes for electrochemistry with moveable PPy bilayer actuators as working electrodes. Sensors and Actuators B: Chemical, 1999, 56, 73-78.	4.0	44
102	Surprising Volume Change in PPy(DBS): An Atomic Force Microscopy Study. Advanced Materials, 1999, 11, 953-957.	11.1	213
103	Microfabrication of PPy microactuators and other conjugated polymer devices. Journal of Micromechanics and Microengineering, 1999, 9, 1-18.	1.5	298
104	Polypyrrole micro actuators. Synthetic Metals, 1999, 102, 1309-1310.	2.1	87
105	Electrochemically driven polypyrrole bilayers for moving and positioning bulk micromachined silicon plates. Journal of Microelectromechanical Systems, 1999, 8, 373-383.	1.7	140
106	The effect of pH on polymerization and volume change in PPy(DBS). Electrochimica Acta, 1998, 44, 219-238.	2.6	85
107	A General-Purpose Conjugated-Polymer Device Array for Imaging. Advanced Materials, 1998, 10, 233-237.	11.1	27
108	Sensitivity of Polythiophene Planar Light-Emitting Diodes to Oxygen. Advanced Materials, 1998, 10, 765-769.	11.1	48

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109	Thiol-Modified Pyrrole Monomers:Â 1. Synthesis, Characterization, and Polymerization of 1-(2-Thioethyl)pyrrole and 3-(2-Thioethyl)pyrrole. Langmuir, 1998, 14, 2970-2975.	1.6	20
110	Thioethylpyrrole Monolayers on Gold. A Spectroscopic Study in Ultrahigh Vacuum. Journal of Physical Chemistry B, 1998, 102, 6529-6538.	1.2	9
111	Thiol-Modified Pyrrole Monomers:Â 2. As-Deposited Monolayers of 1-(2-Thioethyl)pyrrole and 3-(2-Thioethyl)pyrrole. Langmuir, 1998, 14, 2976-2983.	1.6	9
112	Thiol-Modified Pyrrole Monomers:Â 4. Electrochemical Deposition of Polypyrrole over 1-(2-Thioethyl)pyrrole. Langmuir, 1998, 14, 2996-3002.	1.6	32
113	Thiol-Modified Pyrrole Monomers:Â 3. Electrochemistry of 1-(2-Thioethyl)pyrrole and 3-(2-Thioethyl)pyrrole Monolayers in Propylene Carbonate. Langmuir, 1998, 14, 2984-2995.	1.6	19
114	Planar microfabricated polymer light-emitting diodes. Semiconductor Science and Technology, 1998, 13, 433-439.	1.0	18
115	New Devices Made from Combining Silicon Microfabrication and Conducting Polymers. , 1996, , 189-213.		3
116	Effect of substrate preparation on smectic liquid crystal alignment. II. Further results and modeling. Journal of Applied Physics, 1995, 77, 1923-1929.	1.1	15
117	Effect of substrate preparation on smectic liquidâ€crystal alignment. III. The significance of thermal history. Journal of Applied Physics, 1995, 77, 1930-1933.	1.1	10
118	Controlled Folding of Micrometer-Size Structures. Science, 1995, 268, 1735-1738.	6.0	550
119	‹title›Structure of liquid crystals in a confined geometry‹/title›. , 1994, , .		2
120	Electrochemical muscles: Micromachining fingers and corkscrews. Advanced Materials, 1993, 5, 630-632.	11.1	120
121	Gas-sensing characteristics of ZnO-NiO junction structures with intervening ultrathin SiO2 layer. Sensors and Actuators B: Chemical, 1993, 14, 598-599.	4.0	10
122	X-ray study of substrate-induced alignment of a smectic A liquid crystal. Liquid Crystals, 1993, 14, 1877-1883.	0.9	11
123	Effect of substrate preparation on smectic liquid crystal alignment: A structural study. Journal of Applied Physics, 1993, 73, 3299-3304.	1.1	35
124	X-Ray Study of Liquid Crystal Alignment: Evidence for an Alternate Mesophase at the Free Surface?. Molecular Crystals and Liquid Crystals, 1991, 203, 1-8.	0.7	1
125	A versatile twisted optical fiber sensor. Sensors and Actuators, 1988, 13, 117-129.	1.8	13
126	Fabrication of folding microstructures actuated by polypyrrole/gold bilayer. , 0, , .		2

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127	Thermally Driven Hydrogel Actuator for Controllable Flow Rate Pump in Long-Term Drug Delivery. , 0, , 89-99.		1
128	Conjugated Polymer Actuators: Fundamentals. , 0, , 193-227.		16
129	Nanostructured Conducting Polymer Biomaterials and their Applications in Controlled Drug Delivery. , 0, , 279-299.		2
130	Microfabricated Conjugated Polymer Actuators for Microvalves, Cell Biology, and Microrobotics. , 0, , 249-264.		4
131	Stimuli-Responsive andâ€˜Activeâ€™ Polymers in Drug Delivery. , 0, , 61-88.		0
132	IPMC Assisted Infusion Micropumps. , 0, , 175-191.		1
133	IPMC Based Tactile Displays for Pressure and Texture Presentation on a Human Finger. , 0, , 161-174.		3
134	Dynamic Splint-Like Hand Orthosis for Finger Rehabilitation. , 0, , 443-461.		6
135	Actuated Pins for Braille Displays. , 0, , 265-277.		7
136	Bio-Responsive Hydrogels for Biomedical Applications. , 0, , 43-59.		4
137	Biomedical Applications of Dielectric Elastomer Actuators. , 0, , 395-410.		3
138	Active Microcatheter and Biomedical Soft Devices Based on IPMC Actuators. , 0, , 121-136.		9
139	Miniature High Frequency Focused Ultrasonic Transducers for Minimally Invasive Imaging Procedures. , 0, , 335-356.		1
140	Catheters for Thrombosis Sample Exfoliation in Blood Vessels Using Piezoelectric Polymer Fibers. , 0, , 357-368.		0
141	Piezoelectric Poly(Vinylidene) Fluoride (PVDF) in Biomedical Ultrasound Exposimetry. , 0, , 369-383.		1
142	Dielectric Elastomer Actuators: Fundamentals. , 0, , 385-393.		1
143	MRI Compatible Device for Robotic Assisted Interventions to Prostate Cancer. , 0, , 411-425.		6
144	A Braille Display System for the Visually Disabled Using a Polymer Based Soft Actuator. , 0, , 427-442.		6

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145	Piezoelectric and Electrostrictive Polymer Actuators: Fundamentals. , 0, , 317-334.		3
146	IPMC Actuators: Fundamentals. , 0, , 101-119.		1