Mehran Mehregany

List of Publications by Year
in descending order

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148	5,707	87888 38	82547 72
papers	citations	h-index	g-index

153	153	153	3831
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Nanodevice motion at microwave frequencies. Nature, 2003, 421, 496-496.	27.8	505
2	Silicon carbide MEMS for harsh environments. Proceedings of the IEEE, 1998, 86, 1594-1609.	21.3	393
3	SiC MEMS: opportunities and challenges for applications in harsh environments. Thin Solid Films, 1999, 355-356, 518-524.	1.8	267
4	Monocrystalline silicon carbide nanoelectromechanical systems. Applied Physics Letters, 2001, 78, 162-164.	3.3	263
5	Microfabricated structures for theinsitumeasurement of residual stress, Youngâ€™s modulus, and ultimate strain of thin films. Applied Physics Letters, 1987, 51, 241-243.	3.3	261
6	Epitaxial growth of 3Câ€“SiC films on 4 in. diam (100) silicon wafers by atmospheric pressure chemical vapor deposition. Journal of Applied Physics, 1995, 78, 5136-5138.	2.5	234
7	Electromechanical Computing at 500Â°C with Silicon Carbide. Science, 2010, 329, 1316-1318.	12.6	185
8	Low Voltage Nanoelectromechanical Switches Based on Silicon Carbide Nanowires. Nano Letters, 2010, 10, 2891-2896.	9.1	163
9	Microfabricated electrohydrodynamic pumps. Sensors and Actuators A: Physical, 1990, 21, 193-197.	4.1	161
10	A SiC MEMS Resonant Strain Sensor for Harsh Environment Applications. IEEE Sensors Journal, 2007, 7, 568-576.	4.7	151
11	Personal Navigation via High-Resolution Gait-Corrected Inertial Measurement Units. IEEE Transactions on Instrumentation and Measurement, 2010, 59, 3018-3027.	4.7	142
12	Silicon carbide for microelectromechanical systems. International Materials Reviews, 2000, 45, 85-108.	19.3	132
13	Mechanical properties of 3C silicon carbide. Applied Physics Letters, 1992, 60, 2992-2994.	3.3	117
14	VHF, UHF and microwave frequency nanomechanical resonators. New Journal of Physics, 2005, 7, 247-247.	2.9	106
15	Fabrication and testing of bulk micromachined silicon carbide piezoresistive pressure sensors for high temperature applications. IEEE Sensors Journal, 2006, 6, 316-324.	4.7	101
16	Extreme temperature 6Hâ€SiC JFET integrated circuit technology. Physica Status Solidi (A) Applications and Materials Science, 2009, 206, 2329-2345.	1.8	101
17	Electrothermal tuning of Alâ€“SiC nanomechanical resonators. Nanotechnology, 2006, 17, 1506-1511.	2.6	96
18	Novel microstructures for theinsitumeasurement of mechanical properties of thin films. Journal of Applied Physics, 1987, 62, 3579-3584.	2.5	94

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19	A silicon carbide capacitive pressure sensor for in-cylinder pressure measurement. Sensors and Actuators A: Physical, 2008, 145-146, 2-8.	4.1	82
20	Principles in design and microfabrication of variableâ€capacitance sideâ€drive motors. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1990, 8, 3614-3624.	2.1	78
21	Quantitative evaluation of biaxial strain in epitaxial 3C-SiC layers on Si(100) substrates by Raman spectroscopy. Journal of Applied Physics, 2002, 91, 1113-1117.	2.5	77
22	Examination of Bulge Test for Determining Residual Stress, Youngâ€™s Modulus, and Poissonâ€™s Ratio of 3C-SiC Thin Films. Journal of Aerospace Engineering, 2003, 16, 46-54.	1.4	77
23	Performance Impact of Monolayer Coating of Polysilicon Micromotors. Journal of the Electrochemical Society, 1995, 142, 1278-1285.	2.9	71
24	Fabrication and testing of micromachined silicon carbide and nickel fuel atomizers for gas turbine engines. Journal of Microelectromechanical Systems, 1999, 8, 251-257.	2.5	68
25	Deposition of Polycrystalline 3C-SiC Films on 100 mm Diameter Si(100) Wafers in a Large-Volume LPCVD Furnace. Electrochemical and Solid-State Letters, 2002, 5, G99.	2.2	63
26	SiC cantilever resonators with electrothermal actuation. Sensors and Actuators A: Physical, 2006, 128, 376-386.	4.1	62
27	Fabrication and characterization of polycrystalline SiC resonators. IEEE Transactions on Electron Devices, 2002, 49, 2323-2332.	3.0	60
28	Anisotropic etching of silicon in hydrazine. Sensors and Actuators, 1988, 13, 375-390.	1.7	59
29	Pendeo-epitaxial growth of thin films of gallium nitride and related materials and their characterization. Journal of Crystal Growth, 2001, 225, 134-140.	1.5	57
30	Fabrication and testing of surface micromachined polycrystalline SiC micromotors. IEEE Electron Device Letters, 2000, 21, 164-166.	3.9	54
31	Use of deposition pressure to control residual stress in polycrystalline SiC films. Applied Physics Letters, 2004, 84, 341-343.	3.3	51
32	Polycrystalline 3C-SiC thin films deposited by dual precursor LPCVD for MEMS applications. Sensors and Actuators A: Physical, 2005, 119, 169-176.	4.1	48
33	Microfabricated Shear Stress Sensors, Part 1: Design and Fabrication. AIAA Journal, 1999, 37, 66-72.	2.6	46
34	Characterization of polycrystalline silicon carbide films grown by atmospheric pressure chemical vapor deposition on polycrystalline silicon. Journal of Materials Research, 1998, 13, 406-412.	2.6	45
35	Mechanical properties of epitaxial 3C silicon carbide thin films. Journal of Microelectromechanical Systems, 2005, 14, 664-672.	2.5	45
36	Electroless plating of nickel on silicon for fabrication of high-aspect-ratio microstructures. Sensors and Actuators A: Physical, 1996, 56, 261-266.	4.1	41

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37	Measurement of residual stress and elastic modulus of polycrystalline 3C-SiC films deposited by low-pressure chemical vapor deposition. Thin Solid Films, 2005, 492, 195-202.	1.8	41
38	Characterization of frequency tuning using focused ion beam platinum deposition. Journal of Micromechanics and Microengineering, 2007, 17, 213-219.	2.6	40
39	Surface micromachining of polycrystalline SiC films using microfabricated molds of SiO/sub 2/ and polysilicon. Journal of Microelectromechanical Systems, 1999, 8, 237-242.	2.5	39
40	The mechanical properties of polycrystalline 3C-SiC films grown on polysilicon substrates by atmospheric pressure chemical-vapor deposition. Journal of Applied Physics, 2006, 99, 044108.	2.5	36
41	Conventional and pendeo-epitaxial growth of GaN(0001) thin films on Si(111) substrates. Journal of Crystal Growth, 2001, 231, 335-341.	1.5	35
42	Mechanical properties of a 3C-SiC film between room temperature and 600â€‰Â°C. Journal Physics D: Applied Physics, 2007, 40, 3335-3342.	2.8	35
43	Smart ice detection systems based on resonant piezoelectric transducers. Sensors and Actuators A: Physical, 1998, 69, 243-250.	4.1	34
44	Mechanical integrity of polysilicon films exposed to hydrofluoric acid solutions. Journal of Electronic Materials, 1991, 20, 665-670.	2.2	33
45	Surface Micromachining of Polycrystalline SiC Deposited on SiO₂ by APCVD. Materials Science Forum, 1998, 264-268, 885-888.	0.3	29
46	Microfabricated Shear Stress Sensors, Part 2: Testing and Calibration. AIAA Journal, 1999, 37, 73-78.	2.6	29
47	550 $^{circ}hbox{C}$ Integrated Logic Circuits using 6H-SiC JFETs. IEEE Electron Device Letters, 2012, 33, 1369-1371.	3.9	27
48	Fully-monolithic, 600°C differential amplifiers in 6H-SiC JFET IC technology. , 2009, , .		26
49	Etching of 3C-SiC using CHF[sub 3]/O[sub 2] and CHF[sub 3]/O[sub 2]/He plasmas at 1.75 Torr. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1998, 16, 536.	1.6	25
50	Origin of the split Siâ€"H stretch mode on hydrogen terminated 6H-SiC(0001): Titration of crystal truncation. Applied Physics Letters, 2002, 80, 4726-4728.	3.3	23
51	Polycrystalline silicon-carbide surface-micromachined vertical resonators-part II: electrical testing and material property extraction. Journal of Microelectromechanical Systems, 2005, 14, 579-589.	2.5	22
52	Passive Substrate Temperature Compensation of Doubly Anchored Double-Ended Tuning Forks. Journal of Microelectromechanical Systems, 2012, 21, 1321-1328.	2.5	22
53	Fabrication of low defect density 3C-SiC on SiO2 structures using wafer bonding techniques. Journal of Electronic Materials, 1998, 27, L17-L20.	2.2	21
54	Pendeo-epitaxial growth of gallium nitride on silicon substrates. Journal of Electronic Materials, 2000, 29, 306-310.	2.2	21

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55	Development of Nickel Wire Bonding for High-Temperature Packaging of SiC Devices. IEEE Transactions on Advanced Packaging, 2009, 32, 564-574.	1.6	21
56	Micro/Nanotribological Studies of Single-Crystal Silicon and Polysilicon and SiC Films for Use in MEMS Devices. , 1998, , 407-430.		21
57	Performance of 3C-SiC thin films as protective coatings for silicon-micromachined atomizers. Thin Solid Films, 1998, 315, 170-178.	1.8	20
58	6H-SiC JFETs for 450 $^{circ}hbox{C}$ Differential Sensing Applications. Journal of Microelectromechanical Systems, 2009, 18, 950-961.	2.5	20
59	Development of a Multilayer SiC Surface Micromachining Process with Capabilities and Design Rules Comparable to Conventional Polysilicon Surface Micromachining. Materials Science Forum, 2002, 389-393, 755-758.	0.3	19
60	Electrical properties of nickel oxide thin films for flow sensor application. Sensors and Actuators A: Physical, 2006, 125, 363-366.	4.1	19
61	A study of electrical properties and microstructure of nitrogen-doped poly-SiC films deposited by LPCVD. Sensors and Actuators A: Physical, 2007, 136, 613-617.	4.1	19
62	Personal navigation via shoe mounted inertial measurement units. , 2010, , .		19
63	Polycrystalline silicon-carbide surface-micromachined vertical resonators-part I: growth study and device fabrication. Journal of Microelectromechanical Systems, 2005, 14, 567-578.	2.5	18
64	Silicon carbide (SiC) nanoelectromechanical switches and logic gates with long cycles and robust performance in ambient air and at high temperature. , 2013, , .		18
65	Roughness Reduction of 3Câ€SiC Surfaces Using SiCâ€Based Mechanical Polishing Slurries. Journal of the Electrochemical Society, 1999, 146, 327-330.	2.9	17
66	A Silicon Carbide Capacitive Pressure Sensor for High Temperature and Harsh Environment Applications. , 2007, , .		17
67	Embedded two-phase cooling of high heat flux electronics on silicon carbide (SiC) using thin-film evaporation and an enhanced delivery system (FEEDS) manifold-microchannel cooler. , 2017, , .		17
68	Low Stress Polycrystalline SiC Thin Films Suitable for MEMS Applications. Journal of the Electrochemical Society, 2011, 158, H675-H680.	2.9	16
69	Chemical Mechanical Polishing of Cubic Silicon Carbide Films Grown on Si(100) Wafers. Journal of the Electrochemical Society, 2002, 149, G643.	2.9	15
70	A mobile wearable wireless fetal heart monitoring system. , 2011, , .		14
71	Robust silicon carbide (SiC) nanoelectromechanical switches with long cycles in ambient and high temperature conditions. , 2013, , .		14
72	Media compatible stainless steel capacitive pressure sensors. Sensors and Actuators A: Physical, 2013, 189, 134-142.	4.1	14

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73	Surface Roughness Control of 3C-SiC Films during the Epitaxial Growth Process. Journal of the Electrochemical Society, 2004, 151, G910.	2.9	13
74	SiC JFET integrated circuits for sensing and control at temperatures up to 600°C. , 2012, , .		13
75	Modelling of HREM and nanodiffraction for dislocation kinks and core reconstruction. Journal of Physics Condensed Matter, 2000, 12, 10175-10183.	1.8	12
76	MICROMACHINED SILICON FUEL ATOMIZERS FOR GAS TURBINE ENGINES. Atomization and Sprays, 1998, 8, 405-418.	0.8	11
77	Growth of polycrystalline SiC films on SiO 2 and Si 3 N 4 by APCVD. Thin Solid Films, 1999, 355-356, 179-183.	1.8	9
78	Surface Micromachining: A Brief Introduction. MRS Bulletin, 2001, 26, 289-290.	3.5	9
79	Characterization of Silicon Carbide Differential Amplifiers at High Temperature. , 2007, , .		9
80	Stainless steel capacitive pressure sensor for high pressure and corrosive media applications. , 2010, , .		9
81	Silicon carbide pressure sensor for high temperature and high pressure applications: Influence of substrate material on performance. , 2011, , .		9
82	Characterization of Thermoelectric Properties of Heavily Doped n-Type Polycrystalline Silicon Carbide Thin Films. IEEE Transactions on Electron Devices, 2013, 60, 513-517.	3.0	9
83	Dual-gate silicon carbide (SiC) lateral nanoelectromechanical switches. , 2013, , .		9
84	Time-domain AC characterization of silicon carbide (SiC) nanoelectromechanical switches toward high-speed operations. , 2013, , .		9
85	MEMS/NEMS Devices and Applications. , 2010, , 359-387.		9
86	Design, fabrication, and characterization of electrostatic microrelays. , 1995, 2642, 64.		8
87	High-aspect-ratio rotary polygon micromotor scanners. Sensors and Actuators A: Physical, 1999, 77, 73-79.	4.1	8
88	Behaviour of Polycrystalline SiC and Si Surface-Micromachined Lateral Resonant Structures at Elevated Temperatures. Materials Science Forum, 1998, 264-268, 889-894.	0.3	6
89	3-D microfabricated electrodes for targeted deep brain stimulation. , 2009, 2009, 6493-6.		6
90	A high-voltage, high-current CMOS pulse generator ASIC for deep brain stimulation. , 2010, 2010, 1519-22.		6

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91	Thick PECVD silicon dioxide films for MEMS devices. Sensors and Actuators A: Physical, 2016, 240, 1-9.	4.1	6
92	On the stability of ?-SiC with respect to chemical disorder induced by irradiation with energetic particles. Philosophical Magazine Letters, 2001, 81, 55-61.	1.2	5
93	Characterization of Polycrystalline SiC Thin Films for MEMS Applications using Surface Micromachined Devices. Materials Science Forum, 2004, 457-460, 1523-1526.	0.3	5
94	Silicon Carbide Differential Amplifiers for High-Temperature Sensing. Materials Science Forum, 0, 600-603, 1083-1086.	0.3	5
95	Nanomechanical non-volatile memory for computing at extreme. , 2013, , .		5
96	New developments in MEMS using SiC and TiNi shape memory alloy materials. Current Opinion in Solid State and Materials Science, 1997, 2, 566-570.	11.5	4
97	Outer-rotor polysilicon wobble micromotors. Sensors and Actuators A: Physical, 1998, 64, 265-271.	4.1	4
98	High-energy femtosecond pulsed laser micromachining of thin film deposited silicon in self-focused air medium. Journal of Laser Applications, 2002, 14, 221-229.	1.7	4
99	Young's Modulus and Residual Stress of Polycrystalline 3C-SiC Films Grown by LPCVD and Measured by the Load-Deflection Technique. Materials Science Forum, 2004, 457-460, 1519-1522.	0.3	4
100	Advanced Processing Techniques for Silicon Carbide MEMS and NEMS. Materials Science Forum, 2004, 457-460, 1451-1456.	0.3	4
101	Nitrogen-Doping of Polycrystalline 3C-SiC Films Deposited by Low Pressure Chemical Vapor Deposition. Materials Science Forum, 2006, 527-529, 311-314.	0.3	4
102	Observation of stacking faults formed during homoepitaxial growth of p-type 4H-SiC. Applied Physics Letters, 2009, 94, .	3.3	4
103	Fabrication of SiC JFET-Based Monolithic Integrated Circuits. Materials Science Forum, 2010, 645-648, 1115-1118.	0.3	4
104	Silicon carbide micro- and nanoelectromechanical systems. , 2004, , .		3
105	Fabrication of hall device structures in 3C-SiC using microelectromechanical processing technology. Microelectronic Engineering, 2006, 83, 1396-1399.	2.4	3
106	A Piezoelectrically-Actuated Valve for Modulation of Liquid at High Flow Rate Under High Pressure. , 2007, , .		3
107	Very Thin Poly-SiC Films for Micro/Nano Devices. Journal of Nanoscience and Nanotechnology, 2008, 8, 3063-3067.	0.9	3
108	Silicon carbide NEMS logic for high-temperature applications. , 2010, , .		3

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109	A headband for classifying human postures. , 2010, 2010, 382-5.		3
110	Thermal oxidation of silicon carbide: A comparison of n-type and p-type doped epitaxial layers. Applied Physics Letters, 2011, 98, 042109.	3.3	3
111	Advances in silicon carbide micro- and nano-electro-mechanical systems fabrication technology and applications. , 2013, , .		3
112	A Fully Monolithic 6H-SiC JFET-Based Transimpedance Amplifier for High-Temperature Capacitive Sensing. IEEE Transactions on Electron Devices, 2013, 60, 4146-4151.	3.0	3
113	Analysis of practical scaling limits in nanoelectromechanical switches. , 2014, , .		3
114	DEPOSITION TECHNIQUES FOR SIC MEMS. , 2006, , 18-45.		3
115	Effect of rotor slip on the gear ratio of harmonic side-drive micromotors. Sensors and Actuators A: Physical, 1993, 36, 249-254.	4.1	2
116	Spatial Uniformity of the Mechanical Properties of 3C-SiC Films Grown on 4-Inch Si Wafers as a Function of Film Growth Conditions. Materials Science Forum, 1998, 264-268, 635-640.	0.3	2
117	MEMS/NEMS Devices and Applications. , 2004, , 225-252.		2
118	Energy Dissipation in Folded-Beam MEMS Resonators Made from Single Crystal and Polycrystalline 3C-SiC Films. , 2007, , .		2
119	MEMS/NEMS Devices and Applications. , 2007, , 415-442.		2
120	Exploring Silicon Carbide For Thermal Infrared Radiators. , 2007, , .		2
121	Material Aspects of Micro- and Nanoelectromechanical Systems. , 2010, , 333-356.		2
122	Stainless steel capacitive pressure sensor for hostile environments: Sample-to-sample variability and reliability characterization. , 2011, , .		2
123	High-temperature (>500°C) reconfigurable computing using silicon carbide NEMS switches. , 2011, , .		2
124	Characterization of Poly-SiC Pressure Sensors for High Temperature and High Pressure Applications. Materials Science Forum, 0, 717-720, 1211-1214.	0.3	2
125	Surface Roughness of LPCVD Polysilicon and Its Influence on Overlying Electroless Plated Nickel. Journal of the Electrochemical Society, 1997, 144, 3589-3592.	2.9	1
126	Finite-Element Modeling of Residual Stress in SiC Diaphragms. Materials Research Society Symposia Proceedings, 1998, 518, 221.	0.1	1

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127	Mechanical Properties and Morphology of Polycrystalline 3C-SiC Films Deposited on Si and SiO2 by LPCVD. Materials Research Society Symposia Proceedings, 2003, 795, 140.	0.1	1
128	6H-SiC Lateral JFETs for Analog Integrated Circuits. Materials Science Forum, 2008, 600-603, 1099-1102.	0.3	1
129	Thickness-Dependant Electrical Characteristics of Nitrogen-Doped Polycrystalline 3C-SiC Thin Films Deposited by LPCVD. Materials Research Society Symposia Proceedings, 2009, 1222, 1.	0.1	1
130	Fully-Integrated 6H-SiC JFET Amplifiers for High-Temperature Sensing. Materials Science Forum, 0, 645-648, 1107-1110.	0.3	1
131	Use of Vacuum as a Gate Dielectric: The SiC VacFET. Materials Science Forum, 2011, 679-680, 657-661.	0.3	1
132	Seebeck Coefficient of Heavily Doped Polycrystalline 3C-SiC Deposited by LPCVD. Materials Science Forum, 2012, 717-720, 541-544.	0.3	1
133	Doped polycrystalline 3C-SiC films with low stress for MEMS: part II. Characterization using micromachined structures. Journal of Micromechanics and Microengineering, 2014, 24, 065001.	2.6	1
134	Doped polycrystalline 3Câ€"SiC films with low stress for MEMS: part I. Deposition conditions and film properties. Journal of Micromechanics and Microengineering, 2014, 24, 035013.	2.6	1
135	Toward ultralow-power computing at exteme with silicon carbide (SiC) nanoelectromechanical logic. , 2014, , .		1
136	Materials Aspects of Micro- and Nanoelectromechanical Systems. , 2004, , 203-224.		1
137	Real-Time, Model Based Algorithm Implementation for Human Posture Classification. , 2011, , .		1
138	<title>Fabrication issues in micromachined tunable optical filters</title>. , 1995, , .		0
139	<title>Detection and measurement of ice thickness using microprocessor-controlled resonant transducers</title>. , 1998, , .		0
140	Micromachining techniques for silicon carbide MEMS. , 1999, , .		0
141	A Novel Method of Fabricating SiC-On-Insulator Substrates for Use in MEMS. Materials Research Society Symposia Proceedings, 2001, 681, 1.	0.1	0
142	Novel Polycrystalline SiC Films Containing Nanoscale Through-Pores by Selective APCVD. Materials Science Forum, 2006, 527-529, 755-758.	0.3	0
143	Characterization of Low Stress, Undoped LPCVD Polycrystalline SiC Films for MEMS Applications. Materials Science Forum, 2006, 527-529, 1103-1106.	0.3	0
144	Material Aspects of Micro- and Nanoelectromechanical Systems. , 2007, , 299-322.		0

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145	A Reduction of Defects in the SiO₂-SiC System Using the SiC Vacuum Field-Effect Transistor (VacFET). Materials Science Forum, 2012, 717-720, 777-780.	0.3	0
146	Toward ultralow-power computing at exteme with silicon carbide (SiC) nanoelectromechanical logic. , 2014, , .		0
147	Materials Aspects of Micro- and Nanoelectromechanical Systems. , 2004, , 203-224.		0
148	MEMS/NEMS Devices and Applications. , 2004, , 225-252.		0