

# Josep Montserrat

## List of Publications by Year in descending order

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115  
papers

1,588  
citations

411340

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h-index

445137

33  
g-index

115  
all docs

115  
docs citations

115  
times ranked

1840  
citing authors

#	ARTICLE	IF	CITATIONS
1	Reliability and Robustness Tests for Next-Generation High-Voltage SiC MOSFETs. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2021, 9, 4320-4329.	3.7	5
2	Comparative study of boron doped gate oxide impact on 4H and 6H-SiC n-MOSFETs. Materials Science in Semiconductor Processing, 2019, 93, 357-359.	1.9	6
3	Dynamic Characterization and Robustness Test of High Voltage SiC MOSFETs. Materials Science Forum, 2019, 963, 768-772.	0.3	2
4	Advanced processing for mobility improvement in 4H-SiC MOSFETs: A review. Materials Science in Semiconductor Processing, 2018, 78, 22-31.	1.9	80
5	Al-implanted on-axis 4H-SiC MOSFETs. Semiconductor Science and Technology, 2017, 32, 035006.	1.0	9
6	Planar edge terminations for high voltage 4H-SiC power MOSFETs. Semiconductor Science and Technology, 2017, 32, 035007.	1.0	6
7	Improved 4H-SiC N-MOSFET Interface Passivation by Combining $N_{2}O$ Oxidation with Boron Diffusion. Materials Science Forum, 2017, 897, 352-355.	0.3	7
8	Impact of boron diffusion on oxynitrided gate oxides in 4H-SiC metal-oxide-semiconductor field-effect transistors. Applied Physics Letters, 2017, 111, .	1.5	17
9	Impact of Thermal Treatments in Crystalline Reconstruction and Electrical Properties of Diamond Ohmic Contacts Created by Boron Ion Implantation. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1700230.	0.8	7
10	High-Voltage 4H-SiC Power MOSFETs With Boron-Doped Gate Oxide. IEEE Transactions on Industrial Electronics, 2017, 64, 8962-8970.	5.2	19
11	Hot electron engineering for boosting electroluminescence efficiencies of silicon-rich nitride light emitting devices. Journal of Luminescence, 2017, 183, 26-31.	1.5	6
12	Power cycling analysis method for high-voltage SiC diodes. Microelectronics Reliability, 2016, 64, 429-433.	0.9	8
13	4.5kV SiC MOSFET with boron doped gate dielectric. , 2016, , .		8
14	Optimization of low-resistance strip sensors process and studies of radiation resistance. , 2015, , .		0
15	Experimental analysis of planar edge terminations for high voltage 4H-SiC devices. , 2015, , .		4
16	SiC Integrated Circuit Control Electronics for High-Temperature Operation. IEEE Transactions on Industrial Electronics, 2015, 62, 3182-3191.	5.2	52
17	Monolithic Integration of Power MESFET for High Temperature SiC Integrated Circuits. Materials Science Forum, 2014, 778-780, 891-894.	0.3	3
18	Structural analysis of SiC Schottky diodes failure mechanism under current overload. Journal Physics D: Applied Physics, 2014, 47, 055102.	1.3	5

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19	Thermomechanical Assessment of Die-Attach Materials for Wide Bandgap Semiconductor Devices and Harsh Environment Applications. IEEE Transactions on Power Electronics, 2014, 29, 2261-2271.	5.4	87
20	Temperature effects on the ruggedness of SiC Schottky diodes under surge current. Microelectronics Reliability, 2014, 54, 2207-2212.	0.9	6
21	Influence of the irradiation temperature on the surface structure and physical/chemical properties of Ar ion-irradiated bulk metallic glasses. Journal of Alloys and Compounds, 2014, 610, 118-125.	2.8	13
22	Electro-optical Properties of Non-stoichiometric Silicon Nitride Films for Photovoltaic Applications. Energy Procedia, 2014, 44, 145-150.	1.8	14
23	Improved electrical characteristics of porous germanium photodiode obtained by phosphorus ion implantation. International Journal of Nanotechnology, 2013, 10, 553.	0.1	3
24	Laser emission in Nd <sup>3+</sup> doped barium-titanium-silicate microspheres under continuous and chopped wave pumping in a non-coupled pumping scheme. Laser Physics, 2013, 23, 075801.	0.6	11
25	Monolithic Integration of High Temperature Silicon Carbide Integrated Circuits. ECS Transactions, 2013, 58, 375-388.	0.3	3
26	All-stencil transistor fabrication on 3D silicon substrates. Journal of Micromechanics and Microengineering, 2012, 22, 095022.	1.5	7
27	Localized Ion Implantation Through Micro/Nanostencil Masks. IEEE Nanotechnology Magazine, 2011, 10, 940-946.	1.1	16
28	Study of 4H-SiC JBS Diodes Fabricated with Tungsten Schottky Barrier. Journal of Electronic Materials, 2011, 40, 2355-2362.	1.0	16
29	Tuneable magnetic patterning of paramagnetic Fe <sub>60</sub> Al <sub>40</sub> (at. %) by consecutive ion irradiation through pre-lithographed shadow masks. Journal of Applied Physics, 2011, 109, 093918.	1.1	10
30	Rapid Growth of Oxide Films on SiC by Photo-Assisted Mechanism. Electrochemical and Solid-State Letters, 2011, 14, G42.	2.2	2
31	Oxidation Process by RTP for 4H-SiC MOSFET Gate Fabrication. Materials Science Forum, 2011, 679-680, 500-503.	0.3	5
32	Nitrided Gate Oxide Formed by Rapid Thermal Processing for 4H-SiC MOSFETs. ECS Transactions, 2011, 35, 157-164.	0.3	2
33	Nano-patterning of perpendicular magnetic recording media by low-energy implantation of chemically reactive ions. Journal of Magnetism and Magnetic Materials, 2010, 322, 2762-2768.	1.0	14
34	Fabrication and Testing of 4H-SiC MESFETs for Analog Functions Circuits. Materials Science Forum, 2010, 645-648, 1159-1162.	0.3	7
35	Towards population inversion of electrically pumped Er ions sensitized by Si nanoclusters. Optics Express, 2010, 18, 2230.	1.7	77
36	Accelerated test for reliability analysis of SiC diodes. Power Semiconductor Devices & IC's, 2009 ISPSD 2009 21st International Symposium on, 2009, , .	0.0	10

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37	Reduction of droplet-size dispersion in parallel flow-focusing microdevices using a passive method. Journal of Micromechanics and Microengineering, 2009, 19, 045029.	1.5	10
38	Measurement of Carrier Lifetime Temperature Dependence in 3.3kV 4H-SiC PiN Diodes Using OCVD Technique. Materials Science Forum, 2009, 615-617, 703-706.	0.3	6
39	High Power Density SiC 450A AccuMOSFET for Current Limiting Applications. Materials Science Forum, 2009, 615-617, 911-914.	0.3	1
40	Linear and non-linear behavior of mechanical resonators for optimized inertial electromagnetic microgenerators. Microsystem Technologies, 2009, 15, 1217-1223.	1.2	16
41	High-frequency sensor technologies for inertial force detection based on thin-film bulk acoustic wave resonators (FBAR). Microelectronic Engineering, 2009, 86, 1254-1257.	1.1	16
42	Design and fabrication of Si technology microgenerators for vibrational energy scavenging. , 2009, , .		0
43	Design and implementation of mechanical resonators for optimized inertial electromagnetic microgenerators. Microsystem Technologies, 2008, 14, 653-658.	1.2	42
44	Interfacial properties of thermally oxidized Ta2Si on Si. Surface and Interface Analysis, 2008, 40, 1164-1167.	0.8	2
45	Crystalline silicon cantilevers for piezoresistive detection of biomolecular forces. Microelectronic Engineering, 2008, 85, 1120-1123.	1.1	55
46	Localized-mass detection based on thin-film bulk acoustic wave resonators (FBAR): Area and mass location aspects. Sensors and Actuators A: Physical, 2008, 142, 322-328.	2.0	22
47	SiC MOSFETs with thermally oxidized Ta2Si stacked on SiO2 as high-k gate insulator. Microelectronic Engineering, 2008, 85, 704-709.	1.1	10
48	Behaviour of 1.2 kV SiC JBS diodes under repetitive high power stress. Microelectronics Reliability, 2008, 48, 1444-1448.	0.9	17
49	Linear and non linear behavior of mechanical resonators for optimized inertial electromagnetic microgenerators. , 2008, , .		2
50	Broad range adjustable emission of stacked SiN<sub>x</sub>/SiO<sub>y</sub> layers. Journal of Materials Research, 2008, 23, 1513-1516.	1.2	9
51	Auger quenching-based modulation of electroluminescence from ion-implanted silicon nanocrystals. Nanotechnology, 2008, 19, 205201.	1.3	13
52	Direct modulation of electroluminescence from silicon nanocrystals beyond radiative recombination rates. Applied Physics Letters, 2008, 92, 091103.	1.5	37
53	Thin-Film Bulk Acoustic Wave Resonator Floating Above CMOS Substrate. IEEE Electron Device Letters, 2008, 29, 28-30.	2.2	9
54	Comparison between 3.3kV 4H-SiC Schottky and bipolar diodes. , 2008, , .		0

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55	12E-1 Accelerometer Based on Thin-Film Bulk Acoustic Wave Resonators. Proceedings IEEE Ultrasonics Symposium, 2007, , .	0.0	2
56	Silicon Microdevice for Emulsion Production Using Three-Dimensional Flow Focusing. Journal of Microelectromechanical Systems, 2007, 16, 1201-1208.	1.7	18
57	Design and implementation of mechanical resonators for optimized inertial electromagnetic microgenerators. , 2007, , .		1
58	Time-Resolved Evaporation Rate of Attoliter Glycerine Drops Using On-Chip CMOS Mass Sensors Based on Resonant Silicon Micro Cantilevers. IEEE Nanotechnology Magazine, 2007, 6, 509-512.	1.1	9
59	Boron Electrical Activation in SOI Compared to Bulk Si Substrates. , 2007, , .		0
60	Piezoresistive Microcantilevers for Biomolecular Force Detection. , 2007, , .		3
61	Focused-ion-beam-assisted tuning of thin-film bulk acoustic wave resonators (FBARs). Journal of Micromechanics and Microengineering, 2007, 17, 2380-2389.	1.5	9
62	Effect of N <sup>+</sup> irradiation on the microstructural and magnetic properties of Co/Pd multilayers. EPJ Applied Physics, 2007, 38, 253-258.	0.3	1
63	Boron diffusion and activation in SOI and bulk Si: The role of the buried interface. Nuclear Instruments & Methods in Physics Research B, 2007, 257, 152-156.	0.6	3
64	Nanometer scale gaps for capacitive transduction improvement on RF-MEMS resonators. Microelectronic Engineering, 2007, 84, 1384-1387.	1.1	7
65	Parasitic effect on silicon MEMS resonator model parameters. Microelectronic Engineering, 2007, 84, 1363-1368.	1.1	19
66	Microinductive Signal Conditioning With Resonant Differential Filters: High-Sensitivity Biodetection Applications. IEEE Transactions on Instrumentation and Measurement, 2007, 56, 1590-1595.	2.4	9
67	Vibrational energy scavenging with Si technology electromagnetic inertial microgenerators. Microsystem Technologies, 2007, 13, 1655-1661.	1.2	50
68	P2K-2 Sensitivity Considerations in Localized Mass Detection Based on Thin-Film Bulk Acoustic Wave Resonators. , 2006, , .		2
69	Localized and distributed mass detectors with high sensitivity based on thin-film bulk acoustic resonators. Applied Physics Letters, 2006, 89, 033507.	1.5	45
70	Ta <sub>2</sub> Si short time thermal oxidized layers in N <sub>2</sub> O and O <sub>2</sub> to form high- $k$ gate dielectric on SiC. Applied Surface Science, 2006, 253, 1741-1744.	3.1	2
71	Si technology based microinductive devices for biodetection applications. Sensors and Actuators A: Physical, 2006, 132, 499-505.	2.0	10
72	System on chip mass sensor based on polysilicon cantilevers arrays for multiple detection. Sensors and Actuators A: Physical, 2006, 132, 154-164.	2.0	38

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73	Barrier height homogeneity for 4.5 kV 4H-SiC Schottky diodes. Superlattices and Microstructures, 2006, 40, 399-404.	1.4	16
74	A platform for monolithic CMOS-MEMS integration on SOI wafers. Journal of Micromechanics and Microengineering, 2006, 16, 2203-2210.	1.5	22
75	CMOS-SOI platform for monolithic integration of crystalline silicon MEMS. Electronics Letters, 2006, 42, 800.	0.5	1
76	White electroluminescence from C- and Si-rich thin silicon oxides. Applied Physics Letters, 2006, 89, 253124.	1.5	21
77	Electrochemical deposition of Cu and Ni/Cu multilayers in Si Microsystem Technologies. Sensors and Actuators A: Physical, 2005, 123-124, 633-639.	2.0	19
78	Characterisation and stabilisation of Pt/TaSi <sub>2</sub> /SiO <sub>2</sub> /SiC gas sensor. Sensors and Actuators B: Chemical, 2005, 109, 119-127.	4.0	10
79	Barrier inhomogeneities and electrical characteristics of Ni/Ti bilayer Schottky contacts on 4H-SiC after high temperature treatments. Physica Status Solidi (A) Applications and Materials Science, 2005, 202, 692-697.	0.8	25
80	Characterization of High-k Ta <sub>2</sub> Si Oxidized Films on 4H-SiC and Si Substrates as Gate Insulator. Journal of the Electrochemical Society, 2005, 152, G259.	1.3	27
81	AFM lithography for the definition of nanometre scale gaps: application to the fabrication of a cantilever-based sensor with electrochemical current detection. Nanotechnology, 2004, 15, 771-776.	1.3	21
82	Electrical Characterization of Deposited and Oxidized Ta <sub>2</sub> Si as Dielectric Film for SiC Metal-Insulator-Semiconductor Structures. Materials Science Forum, 2004, 457-460, 845-848.	0.3	5
83	Ta <sub>2</sub> Si Thermal Oxidation: A Simple Route to a High-k Gate Dielectric on 4H-SiC. Electrochemical and Solid-State Letters, 2004, 7, F93.	2.2	6
84	Fabrication of cantilever based mass sensors integrated with CMOS using direct write laser lithography on resist. Nanotechnology, 2004, 15, S628-S633.	1.3	27
85	A 4H-SiC high-power-density VJFET as controlled current limiter. IEEE Transactions on Industry Applications, 2003, 39, 1508-1513.	3.3	15
86	Nanopatterning by AFM nano-oxidation of thin aluminum layers as a tool for the prototyping of nanoelectromechanical systems. , 2003, , .		0
87	Compatibility of VJFET Technology with MESFET Fabrication and Its Interest for System Integration: Fabrication of 6H and 4H-SiC 110 V Lateral MESFET. Materials Science Forum, 2002, 389-393, 1403-1406.	0.3	7
88	Growth and characterization of shape memory alloy thin films for Si microactuator technologies. Journal of Materials Science: Materials in Electronics, 2001, 12, 323-326.	1.1	6
89	Ion beam synthesis of semiconductor nanoparticles for Si based optoelectronic devices. Nuclear Instruments & Methods in Physics Research B, 2000, 161-163, 904-908.	0.6	15
90	Ion beam synthesis of compound nanoparticles in SiO <sub>2</sub> . Journal of Materials Science: Materials in Electronics, 1999, 10, 385-391.	1.1	10

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91	Reconstruction of the SiO <sub>2</sub> structure damaged by low-energy Ar-implanted ions. Journal of Applied Physics, 1997, 81, 126-134.	1.1	25
92	Ability of capacitance-voltage transient technique to study spatial distribution and electric field dependence of emission properties of deep levels in semiconductors. Materials Science and Technology, 1995, 11, 1074-1078.	0.8	2
93	Ion beam synthesis of aluminium nitride: characterisation of thin AlN layers formed in microelectronics aluminium. Materials Science and Technology, 1995, 11, 1187-1190.	0.8	2
94	Structural damage and defects created in SiO <sub>2</sub> films by Ar ion implantation. Journal of Non-Crystalline Solids, 1995, 187, 101-105.	1.5	26
95	Characterization of the damage induced in boron-implanted and RTA annealed silicon by the capacitance-voltage transient technique. Semiconductor Science and Technology, 1994, 9, 1637-1648.	1.0	17
96	Configurational statistical model for the damaged structure of silicon oxide after ion implantation. Physical Review B, 1994, 49, 14845-14849.	1.1	18
97	Anisotropic etch-stop properties of nitrogen-implanted silicon. Sensors and Actuators A: Physical, 1994, 45, 219-225.	2.0	4
98	Structural analysis of buried AlN thin films formed by nitrogen implantation into microelectronics grade aluminium. Nuclear Instruments & Methods in Physics Research B, 1994, 84, 214-217.	0.6	7
99	Etching rate modification in silicon oxide by ion implantation and rapid thermal annealing. Nuclear Instruments & Methods in Physics Research B, 1993, 80-81, 1367-1370.	0.6	11
100	Analysis of the SiO <sub>2</sub> defects originated by phosphorus implantation in MOS structures. Nuclear Instruments & Methods in Physics Research B, 1993, 80-81, 612-615.	0.6	1
101	Structural characterisation of nitrogen ion implantation into silicon for sensor technology. Nuclear Instruments & Methods in Physics Research B, 1993, 80-81, 702-705.	0.6	3
102	Analysis of buried etch-stop layers in silicon by nitrogen-ion implantation. Journal of Micromechanics and Microengineering, 1993, 3, 143-145.	1.5	160
103	Limitations of the spreading resistance technique for ion implant profile measurements. Nuclear Instruments & Methods in Physics Research B, 1991, 55, 261-265.	0.6	1
104	Fabrication of CMOS retrograde wells by doping compensation with ion implantation. Vacuum, 1989, 39, 687-690.	1.6	2
105	A study of the thermal oxidation of TaSi <sub>2</sub> and Ta <sub>2</sub> /Si silicides to form dielectric layers for MIS structures on 4H-SiC. , 0, , .		1
106	Design of a microinductive device integrated within a simple resonant differential filter for high sensitivity portable biodetectors. , 0, , .		0
107	Electrical response of MOSiC gas sensors to CO, NO <sub>2</sub> and C <sub>3</sub> H <sub>8</sub> . , 0, , .		0
108	Polysilicon piezoresistive cantilevers for intermolecular force detection. , 0, , .		3

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109	SiC Freestanding Micromechanical Structures on Silicon-On-Insulator Substrates. Materials Science Forum, 0, 615-617, 617-620.	0.3	1
110	Rapid Thermal Oxidation of Si-Face N and P-Type On-Axis 4H-SiC. Materials Science Forum, 0, 778-780, 591-594.	0.3	1
111	Study of Geometrical Effects in Charge Pumping Current for Lateral SiC nMOSFETs Electrical Characterization. Materials Science Forum, 0, 821-823, 717-720.	0.3	0
112	IR Lock-In Thermography Analysis to Evidence Dynamic Mis-Behavior of SiC Device Prototypes. Materials Science Forum, 0, 821-823, 801-805.	0.3	0
113	Proton and Electron Irradiation in Oxynitrided Gate 4H-SiC MOSFET: A Recent Open Issue. Materials Science Forum, 0, 821-823, 667-672.	0.3	6
114	Studies on Floating Contact Press-Pack Diodes Surge Current Capability. Materials Science Forum, 0, 858, 1053-1056.	0.3	1
115	Irradiation and Post-Annealed nMOSFETs with Al Implanted P-Well: Limit of Robustness. Materials Science Forum, 0, 858, 655-658.	0.3	1