

Joel Molina

List of Publications by Year in descending order

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82
papers

536
citations

777949

13
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889612

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all docs

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82
times ranked

802
citing authors

#	ARTICLE	IF	CITATIONS
1	Electrostatically charged rutile TiO ₂ surfaces with enhanced photocatalytic activity for bacteria inactivation. <i>Catalysis Today</i> , 2022, 392-393, 154-166.	2.2	7
2	Effect of controlled humidity on resistive switching of multilayer VO ₂ devices. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2021, 264, 114968.	1.7	14
3	Influence of selected reactive oxygen species on the photocatalytic activity of TiO ₂ /SiO ₂ composite coatings processed at low temperature. <i>Applied Catalysis B: Environmental</i> , 2021, 291, 119685.	10.8	27
4	Influence of Laser Modulation Frequency on the Performance of Terahertz Photoconductive Switches on Semi-Insulating GaAs Exhibiting Negative Differential Conductance. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2021, 11, 591-597.	2.0	1
5	Study on the photocatalytic activity of titanium dioxide nanostructures: Nanoparticles, nanotubes and ultra-thin films. <i>Catalysis Today</i> , 2020, 341, 2-12.	2.2	35
6	MIM capacitors as simple test vehicles for the DC/AC characterization of ALD-Al ₂ O ₃ with auto-correction of parasitic inductance. <i>Microelectronics Reliability</i> , 2020, 104, 113516.	0.9	1
7	Analytical Drain Current Model for a-SiGe:H Thin Film Transistors Considering Density of States. <i>Electronics (Switzerland)</i> , 2020, 9, 1016.	1.8	2
8	NiSi ₂ as a bottom electrode for enhanced endurance of ferroelectric Y-doped HfO ₂ thin films. <i>Japanese Journal of Applied Physics</i> , 2020, 59, SGGB06.	0.8	2
9	Enhanced photocatalytic bacterial inactivation of atomic-layer deposited anatase-TiO ₂ thin films on rutile-TiO ₂ nanotubes. <i>Photochemical and Photobiological Sciences</i> , 2020, 19, 399-405.	1.6	6
10	Spatio-Temporal Defect Generation Process in Irradiated HfO ₂ MOS Stacks: Correlated Versus Uncorrelated Mechanisms. , 2019, , .		1
11	Design and Electrochemical Characterization of Ion-Sensitive Capacitors With ALD Al ₂ O ₃ as the Sensitive Dielectric. <i>IEEE Sensors Journal</i> , 2018, 18, 231-236.	2.4	12
12	Parameter extraction of gate tunneling current in metal-insulator-semiconductor capacitors based on ultra-thin atomic-layer deposited Al ₂ O ₃ . <i>Journal of Materials Science: Materials in Electronics</i> , 2018, 29, 15496-15501.	1.1	6
13	Physical and electrical characterization of yttrium-stabilized zirconia (YSZ) thin films deposited by sputtering and atomic-layer deposition. <i>Journal of Materials Science: Materials in Electronics</i> , 2018, 29, 15349-15357.	1.1	14
14	Room temperature resonant tunneling in metal-insulator-insulator-insulator-semiconductor devices. , 2018, , .		0
15	Resonant tunneling MIIS diode based on intrinsic quantum-well formation of ultra-thin atomic layered films after band-offset engineering. <i>Applied Surface Science</i> , 2018, 458, 166-171.	3.1	1
16	Rectifying Characteristics of Resonant Tunneling MIS Devices Using Ultra-Thin High-k Oxides Deposited by ALD. <i>IEEE Electron Device Letters</i> , 2018, 39, 1461-1464.	2.2	2
17	Gate modeling of metal-insulator-semiconductor devices based on ultra-thin atomic-layer deposited TiO ₂ . <i>Journal of Materials Science: Materials in Electronics</i> , 2018, 29, 15761-15769.	1.1	5
18	Influence of SiH ₄ and pressure on PECVD preparation of silicon films with subwavelength structures. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2017, 35, .	0.6	2

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19	Fundamental study of TiO ₂ nanoparticles as photoactive elements for water decontamination. , 2017, , .		0
20	Resistive switching characteristics of MIM structures based on oxygen-variable ultra-thin HfO ₂ and fabricated at low temperature. Materials Science in Semiconductor Processing, 2017, 66, 191-199.	1.9	9
21	Accurate modeling of gate tunneling currents in Metal-Insulator-Semiconductor capacitors based on ultra-thin atomic-layer deposited Al ₂ O ₃ and post-metallization annealing. Thin Solid Films, 2017, 638, 48-56.	0.8	19
22	Localized characterization of charge transport and random telegraph noise at the nanoscale in HfO ₂ films combining scanning tunneling microscopy and multi-scale simulations. Journal of Applied Physics, 2017, 122, 024301.	1.1	11
23	Understanding the Resistive Switching Phenomena of Stacked Al/Al ₂ O ₃ /Al Thin Films from the Dynamics of Conductive Filaments. Complexity, 2017, 2017, 1-10.	0.9	19
24	Performance of ultra-thin HfO ₂ -based MIM devices after oxygen modulation and post-metallization annealing in N ₂ . Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 1807-1813.	0.8	3
25	Single vacancy defect spectroscopy on HfO ₂ using random telegraph noise signals from scanning tunneling microscopy. Journal of Applied Physics, 2016, 119, .	1.1	20
26	Modeling a mim capacitor including series resistance and inductance for characterizing nanometer high- κ dielectric films. Microwave and Optical Technology Letters, 2016, 58, 2599-2602.	0.9	2
27	CAFM based spectroscopy of stress-induced defects in HfO ₂ with experimental evidence of the clustering model and metastable vacancy defect state. , 2016, , .		10
28	Analysis of quantum conductance, read disturb and switching statistics in HfO ₂ RRAM using conductive AFM. Microelectronics Reliability, 2016, 64, 172-178.	0.9	17
29	Conductance-to-Current-Ratio-Based Parameter Extraction in MOS Leakage Current Models. IEEE Transactions on Electron Devices, 2016, 63, 3844-3850.	1.6	12
30	Hermetic capacitive pressure sensors for biomedical applications. Microelectronics International, 2016, 33, 79-86.	0.4	3
31	pH ISFET sensor with PVTA compensation. Electronics Letters, 2016, 52, 15-17.	0.5	2
32	A Generic MEMS Fabrication Process Based on a Thermal Budget Approach. Journal of Electronics Cooling and Thermal Control, 2016, 06, 97-107.	0.4	0
33	Impact of post-deposition annealing on the resistive switching characteristics and forming voltage step of Al/HfO ₂ /W structures. , 2015, , .		0
34	Role of oxygen vacancies on the resistive switching characteristics of MIM structures fabricated a low temperature. , 2015, , .		0
35	Electrochemical Characterization of Ion-Sensitive Capacitors with ALD Al ₂ O ₃ as the Sensitive Dielectric. ECS Transactions, 2014, 64, 239-243.	0.3	1
36	Physical and electrical characterization of TiO ₂ particles after high temperature processing and before and after ultraviolet irradiation. Canadian Journal of Physics, 2014, 92, 832-837.	0.4	2

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37	Reduction in the interface-states density of metal-oxide-semiconductor field-effect transistors fabricated on high-index Si (114) surfaces by using an external magnetic field. Journal of Applied Physics, 2014, 116, 064510.	1.1	0
38	Complex Permittivity Determination of Thin-Films Through RF-Measurements of a MIM Capacitor. IEEE Microwave and Wireless Components Letters, 2014, 24, 805-807.	2.0	7
39	Effects of germane flow rate in electrical properties of a-SiGe:H films for ambipolar thin-film transistors. Thin Solid Films, 2014, 562, 260-263.	0.8	6
40	Low-temperature processing of thin films based on rutile TiO ₂ nanoparticles for UV photocatalysis and bacteria inactivation. Journal of Materials Science, 2014, 49, 786-793.	1.7	15
41	Study of the Chemical and Morphological Characteristics of Al ₂ O ₃ and HfO ₂ Surfaces after Immersion in Time-Dependent pH Solutions. ECS Transactions, 2014, 64, 3-9.	0.3	3
42	Influence of the surface roughness of the bottom electrode on the resistive-switching characteristics of Al/Al ₂ O ₃ /Al and Al/Al ₂ O ₃ /W structures fabricated on glass at 300 Å°C. Microelectronics Reliability, 2014, 54, 2747-2753.	0.9	23
43	Planarized ambipolar a-SiGe:H thin-film transistors: Influence of the sequence of fabrication process. Solid-State Electronics, 2014, 99, 45-50.	0.8	9
44	Mechanical characterization of polysilicon cantilevers using a thermo-mechanical test chip fabricated with a combined bulk/surface micromachining technique. Results in Physics, 2014, 4, 119-120.	2.0	4
45	Bulk/surface micromachined polymems test chip for the characterization of electrical, mechanical and thermal properties. , 2014, , .		0
46	Non-homogeneous space mechanical strain induces asymmetrical magneto-tunneling conductance in MOSFETs. , 2014, , .		2
47	Physical and electrical characteristics of atomic-layer deposition-HfO ₂ films deposited on Si substrates having different silanol Si-OH densities. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2013, 31, .	0.9	6
48	Evaluation of interface-states density for MOSFETs fabricated on high-index (114) silicon surfaces. , 2013, , .		0
49	Offset and gain calibration circuit for MIM-ISFET devices. Analog Integrated Circuits and Signal Processing, 2013, 76, 321-333.	0.9	6
50	Using Thin Films of Rutile-Phase TiO ₂ Nanoparticles as Photoactive Material in Metal-Semiconductor Structures with Low Thermal Processing. Energy and Environment Focus, 2013, 2, 299-306.	0.3	1
51	Atomistic magnetoconductance effects in strained FETs. , 2013, , .		0
52	Chemical and Morphological Characteristics of ALD Al ₂ O ₃ Thin-Film Surfaces after Immersion in pH Buffer Solutions. Journal of the Electrochemical Society, 2013, 160, B201-B206.	1.3	32
53	Performance of a MOHOS-type Memory Using HfO ₂ nanoparticles as Charge Trapping Layer and Ultra-Thin Tunneling Oxide Thickness. Transactions of the Materials Research Society of Japan, 2013, 38, 569-572.	0.2	1
54	Fabrication of Planar Microelectrodes Based on Bulk Silicon Micromachining. IFMBE Proceedings, 2013, , 927-930.	0.2	0

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55	Performance of a MOHOS-type memory using np-HfO ₂ and variable tunneling oxide thickness. , 2012, , .		0
56	A digitally programmable calibration circuit for smart sensors. , 2012, , .		2
57	Programmable calibration circuit for a MIM-ISFET device. , 2012, , .		0
58	MOHOS-type memory performance using HfO ₂ nanoparticles as charge trapping layer and low temperature annealing. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2012, 177, 1501-1508.	1.7	10
59	MIM-based ISFET sensors with CLOSED/OPEN Sense Plates for pH detection. , 2012, , .		1
60	Integration of MOSFET/MIM Structures Using a CMOS-Based Technology for pH Detection Applications with High-Sensitivity. Procedia Chemistry, 2012, 6, 110-116.	0.7	6
61	HfO ₂ nanoparticles embedded within a SOG-based oxide matrix as charge trapping layer for SOHOS-type memory applications. Journal of Non-Crystalline Solids, 2012, 358, 2482-2488.	1.5	1
62	Ambipolar a-SiGe:H thin-film transistors fabricated at 200Å°C. Journal of Non-Crystalline Solids, 2012, 358, 2340-2343.	1.5	9
63	High-quality spin-on glass-based oxide as a matrix for embedding HfO ₂ nanoparticles for metal-oxide-semiconductor capacitors. Journal of Materials Science, 2012, 47, 2248-2255.	1.7	14
64	Enhancement of the electrical characteristics of MOS capacitors by reducing the organic content of H ₂ O-diluted Spin-On-Glass based oxides. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2011, 176, 1353-1358.	1.7	4
65	Spin-On Glass as low temperature gate insulator. Materials Research Society Symposia Proceedings, 2011, 1287, 1.	0.1	0
66	Magneto-modulation of gate leakage current in 65nm nMOS transistors: Experimental, modeling, and simulation results. Solid-State Electronics, 2010, 54, 1022-1026.	0.8	3
67	Spin-On Glass as Low-Temperature Gate Insulator for Thin-Film Transistors. , 2010, , .		0
68	Extraction of gate oxide quality and its correlation to the electrical parameters of MOS devices. , 2010, , .		0
69	Progressive-degradation and breakdown of W-La ₂ O ₃ MOS structures after constant voltage stress. , 2009, , .		0
70	Magnetic field induced gate leakage current in 65nm nMOS transistors. , 2009, , .		1
71	Reliability characteristics of W-La ₂ O ₃ structures compared with those of HfO ₂ -based gate oxides. , 2008, , .		0
72	Degradation and Breakdown of W-La ₂ O ₃ after Annealing in N ₂ . Japanese Journal of Applied Physics, 2008, 47, 7076-7080.	0.8	2

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73	Effects of N ₂ -Based Annealing on the Reliability Characteristics of Tungsten/La ₂ O ₃ /Silicon Capacitors. Journal of the Electrochemical Society, 2007, 154, G110.	1.3	6
74	Carrier separation and V _{th} measurements of W-La ₂ O ₃ gated MOSFET structures after electrical stress. IEICE Electronics Express, 2007, 4, 185-191.	0.3	1
75	Trapping characteristics of lanthanum oxide gate dielectric film explored from temperature dependent current-voltage and capacitance-voltage measurements. Solid-State Electronics, 2007, 51, 475-480.	0.8	39
76	Tunneling in sub-5nm La ₂ O ₃ films deposited by E-beam evaporation. Journal of Non-Crystalline Solids, 2006, 352, 92-97.	1.5	9
77	Electrical Breakdown and Reliability of Metal Gate - La ₂ O ₃ Thin Films after Post Deposition Annealing in N ₂ . ECS Transactions, 2006, 1, 757-765.	0.3	1
78	Charge Trapping Characteristics of W-La ₂ O ₃ -nSi MIS Capacitors After Post-Metallization Annealing PMA in N ₂ . ECS Transactions, 2006, 3, 233-244.	0.3	3
79	Degradation of high-K LA ₂ O ₃ gate dielectrics using progressive electrical stress. Microelectronics Reliability, 2005, 45, 1365-1369.	0.9	21
80	Effects of high-field electrical stress on the conduction properties of ultrathin La ₂ O ₃ films. Applied Physics Letters, 2005, 86, 232104.	1.5	18
81	Effects of Ambient Temperature on the Electrical Characteristics of Thin La ₂ O ₃ Film Grown by E-Beam Evaporation. , 0, , .		1
82	Decoupling the sequence of dielectric breakdown in single device bilayer stacks by radiation-controlled, spatially localized creation of oxide defects. Applied Physics Express, 0, , .	1.1	1