

Scott Monaghan

List of Publications by Year in descending order

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84
papers

1,621
citations

331259

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h-index

315357

38
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86
all docs

86
docs citations

86
times ranked

2324
citing authors

#	ARTICLE	IF	CITATIONS
1	(Invited) Investigating Defects in the High-k/Ingaas System at Cryogenic Temperature. ECS Meeting Abstracts, 2022, MA2022-01, 1056-1056.	0.0	0
2	Femtosecond Laser-Induced Crystallization of Amorphous Silicon Thin Films under a Thin Molybdenum Layer. ACS Applied Materials & Interfaces, 2021, 13, 37797-37808.	4.0	12
3	On the interpretation of MOS impedance data in both series and parallel circuit topologies. Solid-State Electronics, 2021, 185, 108098.	0.8	0
4	Investigating interface states and oxide traps in the MoS ₂ /oxide/Si system. Solid-State Electronics, 2021, 186, 108123.	0.8	4
5	Large-area growth of MoS ₂ at temperatures compatible with integrating back-end-of-line functionality. 2D Materials, 2021, 8, 025008.	2.0	14
6	Application of artificial neural networks to the identification of weak electrical regions in large area MIM structures. Microelectronics Reliability, 2021, , 114312.	0.9	0
7	Failure Analysis of Large Area Pt/HfO ₂ /Pt Capacitors Using Multilayer Perceptrons. , 2021, , .		0
8	Chemical Vapor Deposition of MoS ₂ for Back-End-of-Line Applications. ECS Meeting Abstracts, 2021, MA2021-02, 1952-1952.	0.0	0
9	The Role of Oxide Traps Aligned With the Semiconductor Energy Gap in MOS Systems. IEEE Transactions on Electron Devices, 2020, 67, 4372-4378.	1.6	13
10	Detection of inhibitory effects in the generation of breakdown spots in HfO ₂ -based MIM devices. Microelectronic Engineering, 2019, 215, 111023.	1.1	3
11	Effects of Annealing Temperature and Ambient on Metal/PtSe ₂ Contact Alloy Formation. ACS Omega, 2019, 4, 17487-17493.	1.6	10
12	Relationship between capacitance and conductance in MOS capacitors. , 2019, , .		1
13	Quantum confinement-induced semimetal-to-semiconductor evolution in large-area ultra-thin PtSe ₂ films grown at 400°C. Npj 2D Materials and Applications, 2019, 3, .	3.9	69
14	Assessing the Correlation Between Location and Size of Catastrophic Breakdown Events in High-K MIM Capacitors. IEEE Transactions on Device and Materials Reliability, 2019, 19, 452-460.	1.5	4
15	Wide Spectral Photoresponse of Layered Platinum Diselenide-Based Photodiodes. Nano Letters, 2018, 18, 1794-1800.	4.5	140
16	Phosphorus monolayer doping (MLD) of silicon on insulator (SOI) substrates. Beilstein Journal of Nanotechnology, 2018, 9, 2106-2113.	1.5	9
17	Characterization of the Failure Site Distribution in MIM Devices Using Zoomed Wavelet Analysis. Journal of Electronic Materials, 2018, 47, 5033-5038.	1.0	3
18	Inversion in the In _{0.53} Ga _{0.47} As metal-oxide-semiconductor system: Impact of the In _{0.53} Ga _{0.47} As doping concentration. Applied Physics Letters, 2017, 110, 032902.	1.5	5

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19	Physical, chemical and electrical characterisation of the diffusion of copper in silicon dioxide and prevention via a CuAl alloy barrier layer system. <i>Materials Science in Semiconductor Processing</i> , 2017, 63, 227-236.	1.9	11
20	The impact of forming gas annealing on the electrical characteristics of sulfur passivated Al ₂ O ₃ /In _{0.53} Ga _{0.47} As (110) metal-oxide-semiconductor capacitors. <i>Applied Physics Letters</i> , 2017, 110, 142905.	1.5	19
21	Spatial analysis of failure sites in large area MIM capacitors using wavelets. <i>Microelectronic Engineering</i> , 2017, 178, 10-16.	1.1	4
22	Examining the relationship between capacitance-voltage hysteresis and accumulation frequency dispersion in InGaAs metal-oxide-semiconductor structures based on the response to post-metal annealing. <i>Microelectronic Engineering</i> , 2017, 178, 204-208.	1.1	20
23	Hall-effect mobility for a selection of natural and synthetic 2D semiconductor crystals. , 2017, , .		2
24	Rhenium-doped MoS ₂ films. <i>Applied Physics Letters</i> , 2017, 111, .	1.5	40
25	Exploratory study and application of the angular wavelet analysis for assessing the spatial distribution of breakdown spots in Pt/HfO ₂ /Pt structures. <i>Journal of Applied Physics</i> , 2017, 122, 215304.	1.1	7
26	Back-gated Nb-doped MoS ₂ junctionless field-effect-transistors. <i>AIP Advances</i> , 2016, 6, .	0.6	20
27	Air sensitivity of MoS ₂ , MoSe ₂ , MoTe ₂ , HfS ₂ , and HfSe ₂ . <i>Journal of Applied Physics</i> , 2016, 120, .	1.1	134
28	A study of capacitance-voltage hysteresis in the HfO ₂ /InGaAs metal-oxide-semiconductor system. <i>Microelectronic Engineering</i> , 2015, 147, 273-276.	1.1	12
29	Effect of forming gas annealing on the inversion response and minority carrier generation lifetime of n and p-In _{0.53} Ga _{0.47} As MOS capacitors. <i>Microelectronic Engineering</i> , 2015, 147, 325-329.	1.1	4
30	Electrical characterisation of InGaAs on insulator structures. <i>Microelectronic Engineering</i> , 2015, 147, 63-66.	1.1	2
31	High aspect ratio iridescent three-dimensional metal-insulator-metal capacitors using atomic layer deposition. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2015, 33, .	0.9	14
32	Capacitance and Conductance for an MOS System in Inversion, with Oxide Capacitance and Minority Carrier Lifetime Extractions. <i>IEEE Transactions on Electron Devices</i> , 2014, 61, 4176-4185.	1.6	11
33	Failure Analysis of MIM and MIS Structures Using Point-to-Event Distance and Angular Probability Distributions. <i>IEEE Transactions on Device and Materials Reliability</i> , 2014, 14, 1080-1090.	1.5	5
34	Diffusion of In _{0.53} Ga _{0.47} As elements through hafnium oxide during post deposition annealing. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	23
35	Charge Trapping Characterization of LaLuO ₃ /p-Si Interfaces at Cryogenic Temperatures. <i>ECS Transactions</i> , 2014, 61, 55-59.	0.3	0
36	Structural and optical properties of post-annealed atomic-layer-deposited HfO ₂ thin films on GaAs. <i>Thin Solid Films</i> , 2014, 569, 104-112.	0.8	3

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37	Electrically active interface defects in the In _{0.53} Ga _{0.47} As MOS system. Microelectronic Engineering, 2013, 109, 182-188.	1.1	22
38	The Characterization and Passivation of Fixed Oxide Charges and Interface States in the $\text{Al}_2\text{O}_3/\text{InGaAs}$ MOS System. IEEE Transactions on Device and Materials Reliability, 2013, 13, 429-443.	1.5	43
39	Effects of alternating current voltage amplitude and oxide capacitance on mid-gap interface state defect density extractions in In _{0.53} Ga _{0.47} As capacitors. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2013, 31, 01A119.	0.6	5
40	Electrical Properties and Charge Transport in the Pd/Al ₂ O ₃ /InGaAs MOS Structure. ECS Transactions, 2013, 58, 379-384.	0.3	0
41	An investigation of capacitance-voltage hysteresis in metal/high- <i>k</i> /In _{0.53} Ga _{0.47} As metal-oxide-semiconductor capacitors. Journal of Applied Physics, 2013, 114, .	1.1	58
42	Nonhomogeneous spatial distribution of filamentary leakage current paths in circular area Pt/HfO ₂ /Pt capacitors. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2013, 31, 01A107.	0.6	9
43	Analysis of the breakdown spot spatial distribution in Pt/HfO ₂ /Pt capacitors using nearest neighbor statistics. Journal of Applied Physics, 2013, 114, 154112.	1.1	8
44	Scalable high- <i>k</i> metal-insulator-metal capacitors with low leakage, high breakdown fields and improved voltage linearity. Electronics Letters, 2012, 48, 230.	0.5	1
45	(Invited) Can Metal/Al ₂ O ₃ /In _{0.53} Ga _{0.47} As/InP MOSCAP Properties Translate to Metal/Al ₂ O ₃ /In _{0.53} Ga _{0.47} As/InP MOSFET Characteristics. ECS Transactions, 2012, 45, 79-88.	0.3	1
46	Observation of peripheral charge induced low frequency capacitance-voltage behaviour in metal-oxide-semiconductor capacitors on Si and GaAs substrates. Journal of Applied Physics, 2012, 111, .	1.1	19
47	Study of interface and oxide defects in high- <i>k</i> /In _{0.53} /Ga _{0.47} /As n-MOSFETs. , 2012, , .		1
48	Spatial statistics for micro/nanoelectronics and materials science. , 2012, , .		1
49	The structural and electrical characterization of a HfErOx dielectric for MIM capacitor DRAM applications. Microelectronic Engineering, 2012, 94, 7-10.	1.1	13
50	Impact of Forming Gas Annealing on the Performance of Surface-Channel $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}$ MOSFETs With an ALD Al_2O_3 Gate Dielectric. IEEE Transactions on Electron Devices, 2012, 59, 1084-1090.	1.6	52
51	Capacitance-Voltage and Interface State Density Characteristics of GaAs and In _{0.53} Ga _{0.47} As MOS Capacitors Incorporating a PECVD Si ₃ N ₄ Dielectric. ECS Transactions, 2011, 35, 415-430.	0.3	5
52	A systematic study of (NH ₄) ₂ S passivation (22%, 10%, 5%, or 1%) on the interface properties of the Al ₂ O ₃ /In _{0.53} Ga _{0.47} As/InP system for n-type and p-type In _{0.53} Ga _{0.47} As epitaxial layers. Journal of Applied Physics, 2011, 109, .	1.1	113
53	Analysis of the minority carrier response of <i>n</i> -type and <i>p</i> -type Au/Ni/Al ₂ O ₃ /In _{0.53} Ga _{0.47} As/InP capacitors following an optimized (NH ₄) ₂ S treatment. Applied Physics Letters, 2011, 99, .	1.5	46
54	Charged Defect Quantification in Pt•Al ₂ O ₃ •In _{0.53} Ga _{0.47} As•InP MOS Capacitors. Journal of the Electrochemical Society, 2011, 158, G103.	1.3	33

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55	Fabrication of HfO ₂ patterns by laser interference nanolithography and selective dry etching for III-V CMOS application. Nanoscale Research Letters, 2011, 6, 400.	3.1	14
56	Multi-technique characterisation of MOVPE-grown GaAs on Si. Microelectronic Engineering, 2011, 88, 472-475.	1.1	3
57	Transport and interface states in high- $\hat{\rho}$ LaSiO _x dielectric. Microelectronic Engineering, 2011, 88, 1342-1345.	1.1	0
58	Investigation of bulk defects in amorphous and crystalline HfO ₂ thin films. Microelectronic Engineering, 2011, 88, 1499-1502.	1.1	7
59	Electrical analysis of three-stage passivated In _{0.53} Ga _{0.47} As capacitors with varying HfO ₂ thicknesses and incorporating an Al ₂ O ₃ interface control layer. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2011, 29, .	0.6	31
60	Structural and electrical analysis of the atomic layer deposition of HfO ₂ /n-In _{0.53} Ga _{0.47} As capacitors with and without an Al ₂ O ₃ interface control layer. Applied Physics Letters, 2010, 97, .	1.5	40
61	(Invited) Investigation of High- $\hat{\rho}$ /In _x Ga _{1-x} As Interfaces. ECS Transactions, 2010, 28, 181-190.	0.3	11
62	Electrical Properties of LaLuO ₃ /Si(100) Structures Prepared by Molecular Beam Deposition. ECS Transactions, 2010, 33, 221-227.	0.3	0
63	(Invited) Equivalent Oxide Thickness Correction in the High- $\hat{\rho}$ /In _{0.53} Ga _{0.47} As/InP System. ECS Transactions, 2010, 33, 433-444.	0.3	8
64	Structural and Electrical Analysis of Thin Interface Control Layers of MgO or Al ₂ O ₃ Deposited by Atomic Layer Deposition and Incorporated at the High- $\hat{\rho}$ /III-V Interface of MO ₂ /In _x Ga _{1-x} As (M = Hf Zr, x = 0 0.53) Gate Stacks. ECS Transactions, 2010, 33, 69-82.	0.3	9
65	(NH ₄) ₂ S Passivation of High- $\hat{\rho}$ /In _{0.53} Ga _{0.47} As Interfaces: A Systematic Study of (NH ₄) ₂ S Concentration. ECS Transactions, 2010, 28, 231-238.	0.3	6
66	Soft breakdown in MgO dielectric layers. , 2009, , .		6
67	Post-breakdown conduction in metal gate/MgO/InP structures. , 2009, , .		1
68	Electrical characterization of the soft breakdown failure mode in MgO layers. Applied Physics Letters, 2009, 95, 012901.	1.5	8
69	Effects of the Semiconductor Substrate Material on the Post-breakdown Current of MgO Dielectric Layers. ECS Transactions, 2009, 25, 79-86.	0.3	3
70	Effects of the electrical stress on the conduction characteristics of metal gate/MgO/InP stacks. Microelectronics Reliability, 2009, 49, 1052-1055.	0.9	13
71	Determination of electron effective mass and electron affinity in HfO ₂ using MOS and MOSFET structures. Solid-State Electronics, 2009, 53, 438-444.	0.8	102
72	Degradation dynamics and breakdown of MgO gate oxides. Microelectronic Engineering, 2009, 86, 1715-1717.	1.1	8

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73	Structural analysis, elemental profiling, and electrical characterization of HfO ₂ thin films deposited on In _{0.53} Ga _{0.47} As surfaces by atomic layer deposition. Journal of Applied Physics, 2009, 106, 084508.	1.1	25
74	Leakage current effects on C-V plots of high-k metal-oxide-semiconductor capacitors. Journal of Vacuum Science & Technology B, 2009, 27, 352.	1.3	21
75	$\text{TiN/ZrO}_2/\text{Ti/Al}$ Metal-Insulator-Metal Capacitors With Subnanometer CET Using ALD-Deposited ZrO_2 for DRAM Applications. IEEE Electron Device Letters, 2009, 30, 219-221.	2.2	26
76	Temperature and frequency dependent electrical characterization of HfO ₂ /In _x Ga _{1-x} As interfaces using capacitance-voltage and conductance methods. Applied Physics Letters, 2009, 94, .	1.5	96
77	Structural and Electrical Properties of HfO ₂ /In _x Ga _{1-x} As structures (x: 0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0). Journal of Applied Physics, 2009, 106, 084508.	1.1	20
78	Determination of physical parameters for HfO ₂ /SiO _x /TiN MOSFET gate stacks by electrical characterization and reverse modeling. , 2008, , .		2
79	Electrical, structural, and chemical properties of HfO ₂ films formed by electron beam evaporation. Journal of Applied Physics, 2008, 104, .	1.1	57
80	Atomic scale model interfaces between high-k hafnium silicates and silicon. Physical Review B, 2007, 75, .	1.1	24
81	Stress in silicon interlayers at the SiO ₂ -Ge interface. Applied Physics Letters, 2007, 90, 143511.	1.5	2
82	Quantum mechanics at the core of multi-scale simulations. Journal of Computer-Aided Materials Design, 2006, 13, 89-109.	0.7	7
83	Thermal decomposition mechanisms of hafnium and zirconium silicates at the atomic scale. Journal of Applied Physics, 2005, 97, 114911.	1.1	22
84	Electrical Properties of High-k LaLuO_3 Gate Oxide for SOI MOSFETs. Advanced Materials Research, 0, 276, 87-93.	0.3	0