Scott Monaghan

List of Publications by Year
in descending order

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84	1,621	331259 21	315357 38
papers	citations	h-index	g-index

86	86	86	2324
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Wide Spectral Photoresponse of Layered Platinum Diselenide-Based Photodiodes. Nano Letters, 2018, 18, 1794-1800.	4.5	140
2	Air sensitivity of MoS2, MoSe2, MoTe2, HfS2, and HfSe2. Journal of Applied Physics, 2016, 120, .	1.1	134
3	A systematic study of (NH4)2S passivation (22%, 10%, 5%, or 1%) on the interface properties of the Al2O3/In0.53Ga0.47As/InP system for n-type and p-type In0.53Ga0.47As epitaxial layers. Journal of Applied Physics, 2011, 109, .	1.1	113
4	Determination of electron effective mass and electron affinity in HfO2 using MOS and MOSFET structures. Solid-State Electronics, 2009, 53, 438-444.	0.8	102
5	Temperature and frequency dependent electrical characterization of HfO2/InxGa1â^'xAs interfaces using capacitance-voltage and conductance methods. Applied Physics Letters, 2009, 94, .	1.5	96
6	Quantum confinement-induced semimetal-to-semiconductor evolution in large-area ultra-thin PtSe2 films grown at 400â€‰Â°C. Npj 2D Materials and Applications, 2019, 3, .	3.9	69
7	An investigation of capacitance-voltage hysteresis in metal/high-<i>k</i>/In0.53Ga0.47As metal-oxide-semiconductor capacitors. Journal of Applied Physics, 2013, 114, .	1.1	58
8	Electrical, structural, and chemical properties of HfO2 films formed by electron beam evaporation. Journal of Applied Physics, 2008, 104, .	1.1	57
9	Impact of Forming Gas Annealing on the Performance of Surface-Channel $hbox{In}_{0.53}hbox{Ga}_{0.47}hbox{As}$ MOSFETs With an ALD $hbox{Al}_{2}hbox{O}_{3}$ Gate Dielectric. IEEE Transactions on Electron Devices, 2012, 59, 1084-1090.	1.6	52
10	Analysis of the minority carrier response of <i>n</i>-type and <i>p</i>-type Au/Ni/Al2O3/In0.53Ga0.47As/InP capacitors following an optimized (NH4)2S treatment. Applied Physics Letters, 2011, 99, .	1.5	46
11	The Characterization and Passivation of Fixed Oxide Charges and Interface States in the $hbox{Al}_{2}hbox{O}_{3}/ hbox{InGaAs}$ MOS System. IEEE Transactions on Device and Materials Reliability, 2013, 13, 429-443.	1.5	43
12	Structural and electrical analysis of the atomic layer deposition of HfO2/n-In0.53Ga0.47As capacitors with and without an Al2O3 interface control layer. Applied Physics Letters, 2010, 97, .	1.5	40
13	Rhenium-doped MoS2 films. Applied Physics Letters, 2017, 111, .	1.5	40
14	Charged Defect Quantification in Ptâ^•Al2O3â^•In0.53Ga0.47Asâ^•InP MOS Capacitors. Journal of the Electrochemical Society, 2011, 158, G103.	1.3	33
15	Electrical analysis of three-stage passivated In0.53Ga0.47As capacitors with varying HfO2 thicknesses and incorporating an Al2O3 interface control layer. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2011, 29, .	0.6	31
16	$hbox{TiN/ZrO}_{2}$/Ti/Al Metalâ€"Insulatorâ€"Metal Capacitors With Subnanometer CET Using ALD-Deposited $hbox{ZrO}_{2}$ for DRAM Applications. IEEE Electron Device Letters, 2009, 30, 219-221.	2.2	26
17	Structural analysis, elemental profiling, and electrical characterization of HfO2 thin films deposited on In0.53Ga0.47As surfaces by atomic layer deposition. Journal of Applied Physics, 2009, 106, 084508.	1.1	25
18	Atomic scale model interfaces between high-khafnium silicates and silicon. Physical Review B, 2007, 75, .	1.1	24

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19	Diffusion of In0.53Ga0.47As elements through hafnium oxide during post deposition annealing. Applied Physics Letters, 2014, 104, .	1.5	23
20	Thermal decomposition mechanisms of hafnium and zirconium silicates at the atomic scale. Journal of Applied Physics, 2005, 97, 114911.	1.1	22
21	Electrically active interface defects in the In0.53Ga0.47As MOS system. Microelectronic Engineering, 2013, 109, 182-188.	1.1	22
22	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
23	Structural and Electrical Properties of HfO2/n-In_xGa_{1-x}As structures (x: 0,) Tj ETQq1 1 0.784314 rgBT /Overlo	0.3	20
24	Back-gated Nb-doped MoS2 junctionless field-effect-transistors. AIP Advances, 2016, 6, .	0.6	20
25	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. Microelectronic Engineering, 2017, 178, 204-208.	1.1	20
26	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
27	The impact of forming gas annealing on the electrical characteristics of sulfur passivated Al2O3/In0.53Ga0.47As (110) metal-oxide-semiconductor capacitors. Applied Physics Letters, 2017, 110, 142905.	1.5	19
28	Fabrication of HfO2 patterns by laser interference nanolithography and selective dry etching for III-V CMOS application. Nanoscale Research Letters, 2011, 6, 400.	3.1	14
29	High aspect ratio iridescent three-dimensional metalâ€“insulatorâ€“metal capacitors using atomic layer deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2015, 33, .	0.9	14
30	Large-area growth of MoS₂ at temperatures compatible with integrating back-end-of-line functionality. 2D Materials, 2021, 8, 025008.	2.0	14
31	Effects of the electrical stress on the conduction characteristics of metal gate/MgO/InP stacks. Microelectronics Reliability, 2009, 49, 1052-1055.	0.9	13
32	The structural and electrical characterization of a HfErOx dielectric for MIM capacitor DRAM applications. Microelectronic Engineering, 2012, 94, 7-10.	1.1	13
33	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
34	A study of capacitanceâ€“voltage hysteresis in the HfO2/InGaAs metal-oxide-semiconductor system. Microelectronic Engineering, 2015, 147, 273-276.	1.1	12
35	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
36	(Invited) Investigation of High-Îº/In_xGa_{1-x}As Interfaces. ECS Transactions, 2010, 28, 181-190.	0.3	11

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37	Capacitance and Conductance for an MOS System in Inversion, with Oxide Capacitance and Minority Carrier Lifetime Extractions. IEEE Transactions on Electron Devices, 2014, 61, 4176-4185.	1.6	11
38	Physical, chemical and electrical characterisation of the diffusion of copper in silicon dioxide and prevention via a CuAl alloy barrier layer system. Materials Science in Semiconductor Processing, 2017, 63, 227-236.	1.9	11
39	Effects of Annealing Temperature and Ambient on Metal/PtSe₂ Contact Alloy Formation. ACS Omega, 2019, 4, 17487-17493.	1.6	10
40	Structural and Electrical Analysis of Thin Interface Control Layers of MgO or Al₂O₃ Deposited by Atomic Layer Deposition and Incorporated at the High-k/III-V Interface of MO₂/In_xGa_{1-x}As (M = Hf|Zr, x = 0|0.53) Gate Stacks. ECS Transactions, 2010, 33, 69-82.	0.3	9
41	Nonhomogeneous spatial distribution of filamentary leakage current paths in circular area Pt/HfO2/Pt capacitors. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, 01A107.	0.6	9
42	Phosphorus monolayer doping (MLD) of silicon on insulator (SOI) substrates. Beilstein Journal of Nanotechnology, 2018, 9, 2106-2113.	1.5	9
43	Electrical characterization of the soft breakdown failure mode in MgO layers. Applied Physics Letters, 2009, 95, 012901.	1.5	8
44	Degradation dynamics and breakdown of MgO gate oxides. Microelectronic Engineering, 2009, 86, 1715-1717.	1.1	8
45	(Invited) Equivalent Oxide Thickness Correction in the High-k/In_{0.53}Ga_{0.47}As/InP System. ECS Transactions, 2010, 33, 433-444.	0.3	8
46	Analysis of the breakdown spot spatial distribution in Pt/HfO2/Pt capacitors using nearest neighbor statistics. Journal of Applied Physics, 2013, 114, 154112.	1.1	8
47	Quantum mechanics at the core of multi-scale simulations. Journal of Computer-Aided Materials Design, 2006, 13, 89-109.	0.7	7
48	Investigation of bulk defects in amorphous and crystalline HfO2 thin films. Microelectronic Engineering, 2011, 88, 1499-1502.	1.1	7
49	Exploratory study and application of the angular wavelet analysis for assessing the spatial distribution of breakdown spots in Pt/HfO2/Pt structures. Journal of Applied Physics, 2017, 122, 215304.	1.1	7
50	Soft breakdown in MgO dielectric layers. , 2009, , .		6
51	(NH4)2S Passivation of High-k/In0.53Ga0.47As Interfaces: A Systematic Study of (NH4)2S Concentration. ECS Transactions, 2010, 28, 231-238.	0.3	6
52	Capacitance-Voltage and Interface State Density Characteristics of GaAs and In0.53Ga0.47As MOS Capacitors Incorporating a PECVD Si3N4 Dielectric. ECS Transactions, 2011, 35, 415-430.	0.3	5
53	Effects of alternating current voltage amplitude and oxide capacitance on mid-gap interface state defect density extractions in In0.53Ga0.47As capacitors. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, 01A119.	0.6	5
54	Failure Analysis of MIM and MIS Structures Using Point-to-Event Distance and Angular Probability Distributions. IEEE Transactions on Device and Materials Reliability, 2014, 14, 1080-1090.	1.5	5

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55	Inversion in the In0.53Ga0.47As metal-oxide-semiconductor system: Impact of the In0.53Ga0.47As doping concentration. Applied Physics Letters, 2017, 110, 032902.	1.5	5
56	Effect of forming gas annealing on the inversion response and minority carrier generation lifetime of n and p-In0.53Ga0.47As MOS capacitors. Microelectronic Engineering, 2015, 147, 325-329.	1.1	4
57	Spatial analysis of failure sites in large area MIM capacitors using wavelets. Microelectronic Engineering, 2017, 178, 10-16.	1.1	4
58	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
59	Investigating interface states and oxide traps in the MoS2/oxide/Si system. Solid-State Electronics, 2021, 186, 108123.	0.8	4
60	Effects of the Semiconductor Substrate Material on the Post-breakdown Current of MgO Dielectric Layers. ECS Transactions, 2009, 25, 79-86.	0.3	3
61	Multi-technique characterisation of MOVPE-grown GaAs on Si. Microelectronic Engineering, 2011, 88, 472-475.	1.1	3
62	Structural and optical properties of post-annealed atomic-layer-deposited HfO 2 thin films on GaAs. Thin Solid Films, 2014, 569, 104-112.	0.8	3
63	Characterization of the Failure Site Distribution in MIM Devices Using Zoomed Wavelet Analysis. Journal of Electronic Materials, 2018, 47, 5033-5038.	1.0	3
64	Detection of inhibitory effects in the generation of breakdown spots in HfO2-based MIM devices. Microelectronic Engineering, 2019, 215, 111023.	1.1	3
65	Stress in silicon interlayers at the SiOxâˆ•Ge interface. Applied Physics Letters, 2007, 90, 143511.	1.5	2
66	Determination of physical parameters for HfO₂/SiO_x/TiN MOSFET gate stacks by electrical characterization and reverse modeling. , 2008, , .		2
67	Electrical characterisation of InGaAs on insulator structures. Microelectronic Engineering, 2015, 147, 63-66.	1.1	2
68	Hall-effect mobility for a selection of natural and synthetic 2D semiconductor crystals. , 2017, , .		2
69	Post-breakdown conduction in metal gate/MgO/InP structures. , 2009, , .		1
70	Scalable high-k metal-insulator-metal capacitors with low leakage, high breakdown fields and improved voltage linearity. Electronics Letters, 2012, 48, 230.	0.5	1
71	(Invited) Can Metal/Al2O3/In0.53Ga0.47As/InP MOSCAP Properties Translate to Metal/Al2O3/In0.53Ga0.47As/InP MOSFET Characteristics. ECS Transactions, 2012, 45, 79-88.	0.3	1
72	Study of interface and oxide defects in high-k/In<inf>0.53</inf>Ga<inf>0.47</inf>As n-MOSFETs. , 2012, , .		1

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73	Spatial statistics for micro/nanoelectronics and materials science. , 2012, , .		1
74	Relationship between capacitance and conductance in MOS capacitors. , 2019, , .		1
75	Electrical Properties of LaLuO3/Si(100) Structures Prepared by Molecular Beam Deposition. ECS Transactions, 2010, 33, 221-227.	0.3	0
76	Transport and interface states in high-Îº LaSiOx dielectric. Microelectronic Engineering, 2011, 88, 1342-1345.	1.1	0
77	Electrical Properties of High-<i>K</i> LaLuO₃ Gate Oxide for SOI MOSFETs. Advanced Materials Research, 0, 276, 87-93.	0.3	0
78	Electrical Properties and Charge Transport in the Pd/Al2O3/InGaAs MOS Structure. ECS Transactions, 2013, 58, 379-384.	0.3	0
79	Charge Trapping Characterization of LaLuO3/p-Si Interfaces at Cryogenic Temperatures. ECS Transactions, 2014, 61, 55-59.	0.3	0
80	On the interpretation of MOS impedance data in both series and parallel circuit topologies. Solid-State Electronics, 2021, 185, 108098.	0.8	0
81	Application of artificial neural networks to the identification of weak electrical regions in large area MIM structures. Microelectronics Reliability, 2021, , 114312.	0.9	0
82	Failure Analysis of Large Area Pt/HfO2/Pt Capacitors Using Multilayer Perceptrons. , 2021, , .		0
83	Chemical Vapor Deposition of MoS2 for Back-End-of-Line Applications. ECS Meeting Abstracts, 2021, MA2021-02, 1952-1952.	0.0	0
84	(Invited) Investigating Defects in the High-k/Ingaas System at Cryogenic Temperature. ECS Meeting Abstracts, 2022, MA2022-01, 1056-1056.	0.0	0