

Robert Clark

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/6266831/publications.pdf>

Version: 2024-02-01

55
papers

1,649
citations

471061

17
h-index

288905

40
g-index

57
all docs

57
docs citations

57
times ranked

1702
citing authors

#	ARTICLE	IF	CITATIONS
1	Critical Role of Interlayer in Hf _{0.5} Zr _{0.5} O ₂ Ferroelectric FET Nonvolatile Memory Performance. IEEE Transactions on Electron Devices, 2018, 65, 2461-2469.	1.6	284
2	Area-Selective Deposition: Fundamentals, Applications, and Future Outlook. Chemistry of Materials, 2020, 32, 4920-4953.	3.2	179
3	Synthesis and Comparative η -1-Alkyl and Sterically Induced Reduction Reactivity of (C ₅ Me ₅) ₃ Ln Complexes of La, Ce, Pr, Nd, and Sm. Organometallics, 2005, 24, 3916-3931.	1.1	124
4	Perspective: New process technologies required for future devices and scaling. APL Materials, 2018, 6, .	2.2	123
5	Emerging Applications for High K Materials in VLSI Technology. Materials, 2014, 7, 2913-2944.	1.3	121
6	Bent vs Linear Metallocenes Involving C ₅ Me ₅ vs C ₈ H ₈ Ligands: Synthesis, Structure, and Reactivity of the Triple-Decked (C ₅ Me ₅)(THF) _x Sm(C ₈ H ₈)Sm(THF) _x (C ₅ Me ₅) (x= 0, 1) Complexes Including a Formal Two-Electron Oxidative Addition to a Single Lanthanide Metal Center ¹ . Journal of the American Chemical Society, 1998, 120, 9555-9563.	6.6	85
7	Electrical properties and thermal stability of CVD HfO _x Ny gate dielectric with poly-Si gate electrode. IEEE Electron Device Letters, 2003, 24, 215-217.	2.2	74
8	MOS characteristics of ultrathin CVD HfAlO gate dielectrics. IEEE Electron Device Letters, 2003, 24, 556-558.	2.2	70
9	Heteroleptic and heterometallic divalent lanthanide bis(trimethylsilyl)amide complexes: mixed ligand, inverse sandwich, and alkali metal derivatives. Polyhedron, 2001, 20, 2483-2490.	1.0	66
10	The Trivalent Neodymium Complex [(C ₅ Me ₅) ₃ Nd] Is a One-Electron Reductant!. Angewandte Chemie - International Edition, 1999, 38, 1801-1803.	7.2	49
11	Thermally stable CVD HfO _x /N _y advanced gate dielectrics with poly-Si gate electrode. , 0, , .		38
12	Variability of (ring centroid)â€“Lnâ€“(ring centroid) angles in the mixed ligand C ₅ Me ₅ /C ₈ H ₈ complexes (C ₅ Me ₅)Ln(C ₈ H ₈) and [(C ₅ Me ₅)Yb(THF)](1/4-1/8â€“1/8-C ₈ H ₈)[Yb(C ₅ Me ₅)]. Dalton Transactions RSC, 2000, , 1609-1612.	2.3	37
13	Hafnium oxide gate stack prepared by in situ rapid thermal chemical vapor deposition process for advanced gate dielectrics. Journal of Applied Physics, 2002, 92, 2807-2809.	1.1	35
14	Comparison of methods to determine bandgaps of ultrathin HfO ₂ films using spectroscopic ellipsometry. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2011, 29, .	0.9	34
15	Characterization and reliability of dual high-k gate dielectric stack (poly-Si-HfO ₂ -SiO ₂) prepared by in situ RTCVD process for system-on-chip applications. IEEE Electron Device Letters, 2003, 24, 105-107.	2.2	28
16	Antiferroelectric negative capacitance from a structural phase transition in zirconia. Nature Communications, 2022, 13, 1228.	5.8	22
17	Comparison of B ₂ O ₃ and BN deposited by atomic layer deposition for forming ultrashallow dopant regions by solid state diffusion. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2016, 34, .	0.9	21
18	The Impacts of Ferroelectric and Interfacial Layer Thicknesses on Ferroelectric FET Design. IEEE Electron Device Letters, 2021, 42, 1156-1159.	2.2	19

#	ARTICLE	IF	CITATIONS
19	Physical and Electrical Effects of the Dep-Anneal-Dep-Anneal (DADA) Process for HfO ₂ in High K/Metal Gate Stacks. ECS Transactions, 2011, 35, 815-834.	0.3	15
20	Systematic study of the effect of La ₂ O ₃ incorporation on the flatband voltage and Si band bending in the TiN/HfO ₂ /SiO ₂ /p-Si stack. Journal of Applied Physics, 2010, 108, .	1.1	14
21	Evaluation of high thermal stability cyclopentadienyl Hf precursors with H ₂ O as a co-reactant for advanced gate logic applications. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2012, 30, .	0.9	14
22	Multi-technique x-ray and optical characterization of crystalline phase, texture, and electronic structure of atomic layer deposited Hf _{1-x} Zr _x O ₂ gate dielectrics deposited by a cyclical deposition and annealing scheme. Journal of Applied Physics, 2013, 113, .	1.1	14
23	Quantifying non-centrosymmetric orthorhombic phase fraction in 10 ² nm ferroelectric Hf _{0.5} Zr _{0.5} O ₂ films. Applied Physics Letters, 2020, 117, .	1.5	14
24	High-K Gate Dielectric Structures by Atomic Layer Deposition for the 32nm and Beyond Nodes. ECS Transactions, 2008, 16, 291-305.	0.3	13
25	Texturing and Tetragonal Phase Stabilization of ALD Hf _x Zr _{1-x} O ₂ Using a Cyclical Deposition and Annealing Scheme. ECS Transactions, 2012, 45, 411-420.	0.3	13
26	Process and Electrical Characteristics of MO-ALD HfO ₂ Films for High-k Gate Applications Grown in a Production Worthy 300 mm Deposition System. ECS Transactions, 2007, 11, 55-69.	0.3	11
27	Role of Ge and Si substrates in higher-k tetragonal phase formation and interfacial properties in cyclical atomic layer deposition-anneal Hf _{1-x} Zr _x O ₂ /Al ₂ O ₃ thin film stacks. Journal of Applied Physics, 2016, 120, 125304.	1.1	11
28	Atomic-Scale Imaging of Polarization Switching in an (Anti-)Ferroelectric Memory Material: Zirconia (ZrO ₂). , 2020, , .		10
29	Synthesis and Characterization of Polyalkylated Pb(C ₅ Me ₄ R) ₂ Plumbocenes, Including the X-ray Crystal Structure of Pb(C ₅ Me ₄ H) ₂ . Organometallics, 1999, 18, 2401-2402.	1.1	9
30	Hf _x Zr _{1-x} O ₂ compositional control using co-injection atomic layer deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2013, 31, .	0.9	9
31	Engineering Band-Edge High- ϵ^o /Metal Gate n-MOSFETs with Cap Layers Containing Group IIA and IIIB Elements by Atomic Layer Deposition. ECS Transactions, 2009, 19, 253-261.	0.3	8
32	Methodology of ALD HfO ₂ High- ϵ^o Gate Dielectric Optimization by Cyclic Depositions and Anneals. ECS Transactions, 2010, 33, 157-164.	0.3	8
33	Extension of Far UV spectroscopic ellipsometry studies of High- ϵ^o dielectric films to 130 nm. Thin Solid Films, 2011, 519, 2894-2898.	0.8	8
34	Structural Correlation of Ferroelectric Behavior in Mixed Hafnia-Zirconia High-k Dielectrics for FeRAM and NCFET Applications. MRS Advances, 2019, 4, 545-551.	0.5	8
35	Process Characteristics and Physical Properties of MO-ALD ZrO ₂ Thin Films Deposited in a 300 mm Deposition System. ECS Transactions, 2008, 13, 89-99.	0.3	7
36	Resistive Memory Process Optimization for High Resistance Switching Toward Scalable Analog Compute Technology for Deep Learning. IEEE Electron Device Letters, 2021, 42, 759-762.	2.2	7

#	ARTICLE	IF	CITATIONS
37	Ferroelectric Phase Content in 7Ånm Hf _{1-x} Zr _x O ₂ Thin Films Determined by X-Ray-Based Methods. Physica Status Solidi (A) Applications and Materials Science, 2021, 218, 2100024.	0.8	6
38	Structural Characteristics of Electrically Scaled ALD HfO ₂ from Cyclical Deposition and Annealing Scheme. ECS Transactions, 2011, 41, 89-108.	0.3	5
39	Efficiency of Ferroelectric Field-Effect Transistors: An Experimental Study. IEEE Transactions on Electron Devices, 2022, 69, 1568-1574.	1.6	5
40	A Chemists View of Precursors and Processes for the Production of Hf-Based High K Dielectrics. ECS Transactions, 2006, 1, 201-209.	0.3	4
41	Optimizing ALD HfO ₂ for Advanced Gate Stacks with Interspersed UV and Thermal Treatments- DADA and MDMA Variations, Combinations, and Optimization. ECS Transactions, 2011, 41, 79-88.	0.3	4
42	Higher-k Tetragonal Phase Stabilization in Atomic Layer Deposited Hf _{1-x} Zr _x O ₂ (0$x$$\leq 1$) Thin Films on Al ₂ O ₃ Passivated Epitaxial-Ge. MRS Advances, 2016, 1, 269-274.	0.5	4
43	Photoreflectance Spectroscopic Characterization of Si with SiO ₂ and HfO ₂ Dielectric Layers. , 2009, , .		3
44	Dielectrics and Metal Stack Engineering for Multilevel Resistive Random-Access Memory. ECS Journal of Solid State Science and Technology, 2020, 9, 053004.	0.9	3
45	Physical and Electrical Properties of MOCVD Grown HfZrO ₄ High-k Thin Films Deposited in a Production-Worthy 300 mm Deposition System. ECS Transactions, 2010, 28, 125-135.	0.3	2
46	Optimizing Band-Edge High- κ /Metal Gate n-MOSFETs with ALD Lanthanum Oxide Cap Layers: Oxidant and Positioning Effects. ECS Transactions, 2010, 33, 75-81.	0.3	1
47	Spectroscopic ellipsometry characterization of high-k gate stacks with Vt shift layers. Thin Solid Films, 2011, 519, 2889-2893.	0.8	1
48	Interface state density engineering in Hf _{1-x} Zr _x O ₂ /SiON/Si gate stack. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2016, 34, 011207.	0.6	1
49	RRAM Devices with Plasma Treated HfO ₂ with Ru as Top Electrode for In-Memory Computing Hardware. ECS Transactions, 2021, 104, 35-44.	0.3	1
50	Spectroscopic Ellipsometry Characterization of High-k films on SiO ₂ •Si. , 2009, , .		0
51	EOT Scaling and Flatband Voltage Shift with Al Addition into TiN. ECS Transactions, 2011, 41, 317-323.	0.3	0
52	(Invited) Electrical Performance Improvement in 300mm Ge-Based Devices. ECS Meeting Abstracts, 2021, MA2021-01, 1081-1081.	0.0	0
53	Process-Induced ReRAM Performance Improvement of Atomic Layer Deposited HfO ₂ for Analog In-Memory Computing Applications. ECS Meeting Abstracts, 2021, MA2021-01, 994-994.	0.0	0
54	Process-Induced ReRAM Performance Improvement of Atomic Layer Deposited HfO ₂ for Analog In-Memory Computing Applications. ECS Transactions, 2021, 102, 19-28.	0.3	0

#	ARTICLE	IF	CITATIONS
55	RRAM Devices with Plasma Treated HfO ₂ with Ru as Top Electrode for In-Memory Computing Hardware. ECS Meeting Abstracts, 2021, MA2021-02, 615-615.	0.0	0