Emmerich Bertagnolli

List of Publications by Year
in descending order

79 papers	1,211 citations	394421 19 h-index	434195 31 g-index
80 all docs	80 docs citations	80 times ranked	1619 citing authors

#	Article	IF	Citations
1	Technology and Performance of InAlN/AlN/GaN HEMTs With Gate Insulation and Current Collapse Suppression Using Zr$hbox{O}_{m 2}$ or Hf $hbox{O}_{m 2}$. IEEE Transactions on Electron Devices, 2008, 55, 937-941.	3.0	86
2	Highly conductive and pure gold nanostructures grown by electron beam induced deposition. Scientific Reports, 2016, 6, 34003.	3.3	77
3	Combined scanning electrochemical atomic force microscopy for tapping mode imaging. Applied Physics Letters, 2003, 82, 1592-1594.	3.3	72
4	Current density profile extraction of focused ion beams based on atomic force microscopy contour profiling of nanodots. Journal of Applied Physics, 2002, 92, 4037-4042.	2.5	53
5	Abrupt Schottky Junctions in Al/Ge Nanowire Heterostructures. Nano Letters, 2015, 15, 4783-4787.	9.1	47
6	All-oxide solar cells based on electrodeposited Cu2O absorber and atomic layer deposited ZnMgO on precious-metal-free electrode. Solar Energy Materials and Solar Cells, 2017, 161, 449-459.	6.2	43
7	Fixed interface charges between AlGaN barrier and gate stack composed of in situ grown SiN and Al2O3 in AlGaN/GaN high electron mobility transistors with normally off capability. Applied Physics Letters, 2014, 104, .	3.3	39
8	Atomic layer deposition of ZrO2/La2O3 high-k dielectrics on germanium reaching 0.5 nm equivalent oxide thickness. Applied Physics Letters, 2009, 94, .	3.3	36
9	Vertical N-channel MOSFETs for extremely high density memories: the impact of interface orientation on device performance. IEEE Transactions on Electron Devices, 2001, 48, 897-906.	3.0	34
10	Evolution of tungsten film deposition induced by focused ion beam. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2002, 20, 1408-1415.	2.1	34
11	Focused ion beam induced surface amorphization and sputter processes. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2003, 21, 927.	1.6	33
12	Stability of La2O3 and GeO2 passivated Ge surfaces during ALD of ZrO2 high-k dielectric. Applied Surface Science, 2012, 258, 3444-3449.	6.1	29
13	Magnetic force microscopy study of shape engineered <scp>FEBID</scp> iron nanostructures. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 368-374.	1.8	26
14	Electron beam induced deposition of iron nanostructures. Journal of Vacuum Science & Technology B, 2008, 26, 939-944.	1.3	25
15	Ultrascaled Germanium Nanowires for Highly Sensitive Photodetection at the Quantum Ballistic Limit. Nano Letters, 2018, 18, 5030-5035.	9.1	25
16	Study of focused ion beam response of GaAs in the nanoscale regime. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 2002, 20, 2238.	1.6	24
17	Pt-assisted oxidation of (100)-Ge/high-k interfaces and improvement of their electrical quality. Applied Physics Letters, 2010, 97, .	3.3	21
18	ALD grown bilayer junction of ZnO:Al and tunnel oxide barrier for SIS solar cell. Solar Energy Materials and Solar Cells, 2013, 117, 178-182.	6.2	21

#	Article	IF	Citations
19	Substituted triphenylamines as building blocks for star shaped organic electronic materials. New Journal of Chemistry, 2015, 39, 1840-1851.	2.8	21
20	Ge p-MOSFETs With Scaled ALD $hbox{La}_{2} hbox{O}_{3}/hbox{ZrO}_{2}$ Gate Dielectrics. IEEE Transactions on Electron Devices, 2010, 57, 3295-3302.	3.0	20
21	Compositional and electrical properties of zirconium dioxide thin films chemically deposited on silicon. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2003, 21, 653-659.	2.1	19
22	Stabilization of a very high-k crystalline ZrO2 phase by post deposition annealing of atomic layer deposited ZrO2/La2O3 dielectrics on germanium. Applied Surface Science, 2010, 256, 5031-5034.	6.1	19
23	Effective reduction of trap density at the Y2O3/Ge interface by rigorous high-temperature oxygen annealing. Journal of Applied Physics, 2014, 116, .	2.5	19
24	Slow trap response of zirconium dioxide thin films on silicon. Applied Physics Letters, 2003, 83, 1400-1402.	3.3	18
25	Process temperature dependent high frequency capacitance-voltage response of ZrO2/GeO2/germanium capacitors. Applied Physics Letters, 2010, 96, 052902.	3.3	17
26	Electric field modulation of thermovoltage in single-layer MoS2. Applied Physics Letters, 2014, 105, .	3.3	16
27	Focused Electron Beamâ€Induced CVD of Iron: a Practical Guide for Direct Writing. Chemical Vapor Deposition, 2014, 20, 243-250.	1.3	16
28	Silicene Passivation by Few-Layer Graphene. ACS Applied Materials & Interfaces, 2019, 11, 12745-12751.	8.0	16
29	Iron silicide nanoparticles in a SiC/C matrix from organometallic polymers: characterization and magnetic properties. Journal of Materials Chemistry, 2011, 21, 12232.	6.7	15
30	Electron Beamâ€Induced CVD of Nanoalloys for Nanoelectronics. Chemical Vapor Deposition, 2014, 20, 251-257.	1.3	15
31	IIIâ€“V semiconductor nanocrystal formation in silicon nanowires via liquid-phase epitaxy. Nano Research, 2014, 7, 1769-1776.	10.4	15
32	Monolithic Axial and Radial Metalâ€“Semiconductor Nanowire Heterostructures. Nano Letters, 2018, 18, 7692-7697.	9.1	15
33	Custom design of optical-grade thin films of silicon oxide by direct-write electron-beam-induced deposition. Journal of Vacuum Science & Technology B, 2006, 24, 2755.	1.3	14
34	Synthesis, Morphological, and Electro-optical Characterizations of Metal/Semiconductor Nanowire Heterostructures. Nano Letters, 2016, 16, 3507-3513.	9.1	14
35	Improving the ALD-grown Y 2 O 3 /Ge interface quality by surface and annealing treatments. Applied Surface Science, 2016, 369, 377-383.	6.1	14
36	Direct writing of gold nanostructures with an electron beam: On the way to pure nanostructures by combining optimized deposition with oxygen-plasma treatment. Beilstein Journal of Nanotechnology, 2017, 8, 2530-2543.	2.8	14

#	Article	IF	Citations
37	Method to characterize the three-dimensional distribution of focused ion beam induced damage in silicon after 50 keV Ga+ irradiation. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2003, 21, 1644-1648.	2.1	13
38	Synthesis of nanowires in room temperature ambient: A focused ion beam approach. Applied Physics Letters, 2006, 88, 163114.	3.3	13
39	In situmonitoring of Joule heating effects in germanium nanowires by Î¼-Raman spectroscopy. Nanotechnology, 2013, 24, 065701.	2.6	13
40	Highly Biaxially Strained Silicene on Au(111). Journal of Physical Chemistry C, 2021, 125, 9973-9980.	3.1	12
41	Maskâ€free prototyping of metalâ€oxideâ€semiconductor devices utilizing focused electron beam induced deposition. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 375-381.	1.8	11
42	Gate-Tunable Electron Transport Phenomena in Alâ€“GeâŸ¨111âŸ©â€“Al Nanowire Heterostructures. Nano Letters, 2015, 15, 7514-7518.	9.1	11
43	Focused ion beam generated antimony nanowires for microscale pH sensors. Applied Physics Letters, 2009, 95, 223106.	3.3	9
44	Nanowires enabling strained photovoltaics. Applied Physics Letters, 2014, 104, .	3.3	9
45	Linearity optimization of atomic layer deposited ZrO2 metal-insulator-metal capacitors by inserting interfacial Zr-doped chromia layers. Journal of Applied Physics, 2016, 119, .	2.5	9
46	Optical Signatures of Dirac Electrodynamics for hBN-Passivated Silicene on Au(111). Nano Letters, 2021, 21, 5301-5307.	9.1	9
47	Nitrogen as a carrier gas for regime control in focused electron beam induced deposition. Nanofabrication, 2014, 1, .	1.1	8
48	Investigation of neurotrophic factor concentrations with a novel in vitro concept for peripheral nerve regeneration. Journal of Neuroscience Research, 2015, 93, 1631-1640.	2.9	8
49	Impact of fluence-rate related effects on the sputtering of silicon at elevated target temperatures. Journal of Applied Physics, 2009, 105, 044912.	2.5	7
50	Mapping of local argon impingement on a virtual surface: an insight for gas injection during FEBID. Applied Physics A: Materials Science and Processing, 2014, 117, 1749-1756.	2.3	7
51	Focused ion beam prepared contacts of tungsten to silicon characterized by a cross-bridge Kelvin resistor approach. Journal of Applied Physics, 2003, 93, 5827-5829.	2.5	6
52	Impact of growth temperature on the crystal habits, forms andÂstructures of VO2 nanocrystals. Applied Physics A: Materials Science and Processing, 2011, 102, 201-204.	2.3	5
53	Sputter-redeposition method for the fabrication of automatically sealed micro/nanochannel using FIBs. International Journal of Precision Engineering and Manufacturing, 2011, 12, 893-898.	2.2	5
54	Focused ion beam induced Ga-contaminationâ€”An obstacle for UV-nanoimprint stamp repair?. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, 041602.	1.2	5

#	Article	IF	Citations
55	Focused ion beam direct patterning of hardmask layers. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2014, 32, .	1.2	4
56	Nanowire-metal heterostructures for high performance MOSFETs. Elektrotechnik Und Informationstechnik, 2010, 127, 171-175.	1.1	3
57	Miniaturized Wide-Range Field-Emission Vacuum Gauge. Nanomaterials and Nanotechnology, 2014, 4, 29.	3.0	3
58	Germanium nanowire microbolometer. Nanotechnology, 2022, 33, 245201.	2.6	3
59	Deposition Mechanism of Oxide Thin Films Manufactured by a Focused Energetic Beam Process. Materials Research Society Symposia Proceedings, 2002, 749, 1.	0.1	2
60	Custom-tailored microfluidic devices and nanoscaled actuators - on the fast track. , 0, , .		2
61	Platinum-assisted post deposition annealing of the n-Ge/Y₂O₃interface. Semiconductor Science and Technology, 2016, 31, 075009.	2.0	2
62	Fabrication and characterization of a germanium nanowire light emitting diode. Applied Physics Letters, 2017, 111, 233103.	3.3	2
63	Ion Beam Induced Chemical Vapor Deposition of Dielectric Materials. Materials Research Society Symposia Proceedings, 2000, 624, 163.	0.1	1
64	Effects of Ga-Irradiation On Properties of Materials Processed by A Focused Ion Beam (FIB). Materials Research Society Symposia Proceedings, 2000, 647, 1.	0.1	1
65	Versatile Nanodeposition of Dielectrics and Metals by Non-contact Direct-Write Technology. Materials Research Society Symposia Proceedings, 2002, 758, 451.	0.1	1
66	Impact of sputter deposited TaN and TiN metal gates on ZrO<inf>2</inf>/Ge and ZrO<inf>2</inf>/Si high-k dielectric gate stacks. , 2009, , .		1
67	Electrical characteristics of atomic layer deposited aluminium oxide and lanthanum-zirconium oxide high-k Dielectric stacks. , 2009, , .		1
68	Atomic layer deposition-based interface engineering for high-k/metal gate stacks. , 2012, , .		1
69	Porous Silicaâ€Based Mixed Oxides with Basic Organic Sites. European Journal of Inorganic Chemistry, 2012, 2012, 5207-5215.	2.0	1
70	Electroluminescence from NiSi₂/Si/NiSi₂ nanowire heterostructures operated at high electric fields. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 2895-2900.	1.8	1
71	FIB-TEM Characterization of Locally Restricted Implantation Damage. Materials Research Society Symposia Proceedings, 2002, 738, 7141.	0.1	0
72	Time Resolved Studies of Focused Ion Beam Induced Tungsten Deposition. Materials Research Society Symposia Proceedings, 2002, 749, 1.	0.1	0

#	Article	IF	Citations
73	Ultrathin Zirconium Dioxide Chemically Deposited at a Low Thermal Budget. Materials Research Society Symposia Proceedings, 2002, 745, 571.	0.1	0
74	Local Modification of Microstructure and of Properties by FIB-CVD. Materials Research Society Symposia Proceedings, 2003, 792, 63.	0.1	0
75	Comparative Study On The Impact Of TiN And Mo Metal Gates On MOCVD-Grown HfO2 And ZrO2 High-Î¹ Dielectrics For CMOS Technology. AIP Conference Proceedings, 2007, , .	0.4	0
76	A Nanowire Growth Technique Utilizing Focused Ion Beams. AIP Conference Proceedings, 2007, , .	0.4	0
77	Growth of GaAs whiskers by MBE on LPCVD Si(111) nanowire trunks. , 2008, , .		0
78	In place growth of vertical Si nanowires for surround gated MOSFETs with self aligned contact formation. , 2010, , .		0
79	Impact of oxidation and reduction annealing on the electrical properties of Ge/La<inf>2</inf>O<inf>3</inf>/ZrO<inf>2</inf> gate stacks. , 2011, , .		0