Toshiharu Makino

List of Publications by Year
in descending order

138 papers	3,220 citations	126907 33 h-index	182427 51 g-index
139 all docs	139 docs citations	139 times ranked	2119 citing authors

#	Article	IF	Citations
1	Optically detected magnetic resonance of nitrogen-vacancy centers in vertical diamond Schottky diodes. Japanese Journal of Applied Physics, 2022, 61, SC1061.	1.5	0
2	Selectively buried growth of heavily B doped diamond layers with step-free surfaces in N doped diamond (111) by homoepitaxial lateral growth. Applied Surface Science, 2022, , 153340.	6.1	1
3	Study of ion-implanted nitrogen related defects in diamond Schottky barrier diode by transient photocapacitance and photoluminescence spectroscopy. Japanese Journal of Applied Physics, 2021, 60, SBBD07.	1.5	3
4	Carrier transport mechanism of diamond p⁺â€“n junction at low temperature using Schottkyâ€“pn junction structure. Japanese Journal of Applied Physics, 2021, 60, 030905.	1.5	5
5	Inversion channel MOSFET on heteroepitaxially grown free-standing diamond. Carbon, 2021, 175, 615-619.	10.3	9
6	Distinguishing dislocation densities in intrinsic layers of pin diamond diodes using two photon-excited photoluminescence imaging. Diamond and Related Materials, 2021, 117, 108463.	3.9	2
7	Fabrication of inversion p-channel MOSFET with a nitrogen-doped diamond body. Applied Physics Letters, 2021, 119, .	3.3	11
8	Scanning diamond NV center magnetometer probe fabricated by laser cutting and focused ion beam milling. Journal of Applied Physics, 2021, 130, .	2.5	1
9	Characterization of Schottky Barrier Diodes on Heteroepitaxial Diamond on 3C-SiC/Si Substrates. IEEE Transactions on Electron Devices, 2020, 67, 212-216.	3.0	11
10	Energy distribution of Al2O3/diamond interface states characterized by high temperature capacitance-voltage method. Carbon, 2020, 168, 659-664.	10.3	20
11	Charge state control by band engineering. Semiconductors and Semimetals, 2020, 103, 137-159.	0.7	1
12	Vector Electrometry in a Wide-Gap-Semiconductor Device Using a Spin-Ensemble Quantum Sensor. Physical Review Applied, 2020, 14, .	3.8	17
13	Insight into Al2O3/B-doped diamond interface states with high-temperature conductance method. Applied Physics Letters, 2020, 117, .	3.3	11
14	Study of defects in diamond Schottky barrier diode by photocurrent spectroscopy. Japanese Journal of Applied Physics, 2020, 59, SGGK14.	1.5	2
15	Temperature dependence of diamond MOSFET transport properties. Japanese Journal of Applied Physics, 2020, 59, SGGD19.	1.5	4
16	Determination of Current Leakage Sites in Diamond pâ€“n Junction. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900243.	1.8	1
17	Inversion channel mobility and interface state density of diamond MOSFET using N-type body with various phosphorus concentrations. Applied Physics Letters, 2019, 114, .	3.3	19
18	Conductive-probe atomic force microscopy and Kelvin-probe force microscopy characterization of OH-terminated diamond (111) surfaces with step-terrace structures. Japanese Journal of Applied Physics, 2019, 58, SIIB08.	1.5	5

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19	Microstructures of dome-shaped hillocks formed on B doped CVD homoepitaxial diamond films. Diamond and Related Materials, 2019, 97, 107422.	3.9	7
20	Charge-state control of ensemble of nitrogen vacancy centers by nâ€“iâ€“n diamond junctions. Applied Physics Express, 2018, 11, 033004.	2.4	10
21	Single crystal diamond membranes for nanoelectronics. Nanoscale, 2018, 10, 4028-4035.	5.6	27
22	Anisotropic diamond etching through thermochemical reaction between Ni and diamond in high-temperature water vapour. Scientific Reports, 2018, 8, 6687.	3.3	41
23	Direct observation of inversion capacitance in p-type diamond MOS capacitors with an electron injection layer. Japanese Journal of Applied Physics, 2018, 57, 04FR01.	1.5	14
24	Temperature dependence of electrical characteristics for diamond Schottky-pn diode in forward bias. Diamond and Related Materials, 2018, 85, 49-52.	3.9	11
25	Engineering of Fermi level by <i>nin</i> diamond junction for control of charge states of NV centers. Applied Physics Letters, 2018, 112, .	3.3	26
26	Formation of atomically flat hydroxyl-terminated diamond (1â€¯1â€¯1) surfaces via water vapor annealing. Applied Surface Science, 2018, 458, 222-225.	6.1	23
27	Reverseâ€recovery of diamond pâ€iâ€n diodes. IET Power Electronics, 2018, 11, 695-699.	2.1	4
28	Direct Nanoscale Sensing of the Internal Electric Field in Operating Semiconductor Devices Using Single Electron Spins. ACS Nano, 2017, 11, 1238-1245.	14.6	82
29	Mechanism of anisotropic etching on diamond (111) surfaces by a hydrogen plasma treatment. Applied Surface Science, 2017, 422, 452-455.	6.1	22
30	Charge transport properties of intrinsic layer in diamond vertical pin diode. Applied Physics Letters, 2017, 110, .	3.3	6
31	Dynamic properties of diamond high voltage pâ€“iâ€“n diodes. Japanese Journal of Applied Physics, 2017, 56, 04CR14.	1.5	10
32	Diamond Schottky-pn diode using lightly nitrogen-doped layer. Diamond and Related Materials, 2017, 75, 152-154.	3.9	37
33	Estimation of Inductively Coupled Plasma Etching Damage of Boronâ€Doped Diamond Using Xâ€Ray Photoelectron Spectroscopy. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1700233.	1.8	11
34	Observation of Interface Defects in Diamond Lateral p-n-Junction Diodes and Their Effect on Reverse Leakage Current. IEEE Transactions on Electron Devices, 2017, 64, 3298-3302.	3.0	6
35	High-Temperature Bipolar-Mode Operation of Normally-Off Diamond JFET. IEEE Journal of the Electron Devices Society, 2017, 5, 95-99.	2.1	27
36	N-type control of single-crystal diamond films by ultra-lightly phosphorus doping. Applied Physics Letters, 2016, 109, .	3.3	49

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37	Pure negatively charged state of the NV center in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>n</mml:mi></mml:math>-type diamond. Physical Review B, 2016, 93, .	3.2	77
38	Inversion channel diamond metal-oxide-semiconductor field-effect transistor with normally off characteristics. Scientific Reports, 2016, 6, 31585.	3.3	150
39	Diamond electronics. , 2016, , .		2
40	Charge state modulation of nitrogen vacancy centers in diamond by applying a forward voltage across a pâ€“iâ€“n junction. Diamond and Related Materials, 2016, 63, 192-196.	3.9	18
41	Normally-Off Diamond Junction Field-Effect Transistors With Submicrometer Channel. IEEE Electron Device Letters, 2016, 37, 209-211.	3.9	36
42	Desorption time of phosphorus during MPCVD growth of n-type (001) diamond. Diamond and Related Materials, 2016, 64, 208-212.	3.9	11
43	Defect luminescence in Diamond and GaN: towards single photon emitting devices. , 2016, , .		0
44	Potential profile evaluation of a diamond lateral pâ€“n junction diode using Kelvin probe force microscopy. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2589-2594.	1.8	1
45	Fabrication of diamond lateral pâ€“n junction diodes on (111) substrates. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2548-2552.	1.8	7
46	Electronic properties of diamond Schottky barrier diodes fabricated on silicon-based heteroepitaxially grown diamond substrates. Applied Physics Express, 2015, 8, 104103.	2.4	30
47	Electrical excitation of silicon-vacancy centers in single crystal diamond. Applied Physics Letters, 2015, 106, .	3.3	33
48	Atomistic mechanism of perfect alignment of nitrogen-vacancy centers in diamond. Applied Physics Letters, 2014, 105, .	3.3	39
49	Carrier transport in homoepitaxial diamond films with heavy phosphorus doping. Japanese Journal of Applied Physics, 2014, 53, 05FP05.	1.5	19
50	Generation and transportation mechanisms for two-dimensional hole gases in GaN/AlGaN/GaN double heterostructures. Journal of Applied Physics, 2014, 115, .	2.5	42
51	Electron emission from nitrogen-containing diamond with narrow-gap coplanar electrodes. Japanese Journal of Applied Physics, 2014, 53, 05FP08.	1.5	0
52	Diamond electronic devices fabricated using heavily doped hopping p⁺and n⁺layers. Japanese Journal of Applied Physics, 2014, 53, 05FA12.	1.5	29
53	Investigation of electron emission site of pâ€“iâ€“n diode-type emitters with negative electron affinity. Japanese Journal of Applied Physics, 2014, 53, 05FP07.	1.5	0
54	Analysis of selective growth of n-type diamond in lateral pâ€“n junction diodes by cross-sectional transmission electron microscopy. Japanese Journal of Applied Physics, 2014, 53, 05FP01.	1.5	10

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55	Polarizationâ€controlled dressedâ€photonâ€“phonon etching of patterned diamond structures. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2339-2342.	1.8	7
56	Unique temperature dependence of deep ultraviolet emission intensity for diamond light emitting diodes. Japanese Journal of Applied Physics, 2014, 53, 05FP02.	1.5	4
57	Free exciton luminescence from a diamond pâ€“iâ€“n diode grown on a substrate produced by heteroepitaxy. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2251-2256.	1.8	14
58	600 V Diamond Junction Field-Effect Transistors Operated at 200$^{circ}{m C}$. IEEE Electron Device Letters, 2014, 35, 241-243.	3.9	74
59	Deterministic Electrical Charge-State Initialization of Single Nitrogen-Vacancy Center in Diamond. Physical Review X, 2014, 4, .	8.9	41
60	Perfect selective alignment of nitrogen-vacancy centers in diamond. Applied Physics Express, 2014, 7, 055201.	2.4	84
61	Reduction of nâ€type diamond contact resistance by graphite electrode. Physica Status Solidi - Rapid Research Letters, 2014, 8, 137-140.	2.4	16
62	Electrical characterization of diamond Pi<scp>N</scp> diodes for high voltage applications. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 2035-2039.	1.8	52
63	Fabrication of bipolar junction transistor on (001)-oriented diamond by utilizing phosphorus-doped n-type diamond base. Diamond and Related Materials, 2013, 34, 41-44.	3.9	38
64	Single photon, spin, and charge in diamond semiconductor at room temperature. , 2013, , .		0
65	Negative electron affinity of diamond and its application to high voltage vacuum power switches. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 1961-1975.	1.8	53
66	High-Temperature Operation of Diamond Junction Field-Effect Transistors With Lateral p-n Junctions. IEEE Electron Device Letters, 2013, 34, 1175-1177.	3.9	51
67	Formation of Graphene-on-Diamond Structure by Graphitization of Atomically Flat Diamond (111) Surface. Japanese Journal of Applied Physics, 2013, 52, 110121.	1.5	37
68	High-Voltage Vacuum Switch with a Diamond pâ€“iâ€“n Diode Using Negative Electron Affinity. Japanese Journal of Applied Physics, 2012, 51, 090113.	1.5	17
69	Formation of Step-Free Surfaces on Diamond (111) Mesas by Homoepitaxial Lateral Growth. Japanese Journal of Applied Physics, 2012, 51, 090107.	1.5	19
70	Diamond bipolar junction transistor device with phosphorus-doped diamond base layer. Diamond and Related Materials, 2012, 27-28, 19-22.	3.9	51
71	Device Design of Diamond Schottky-pn Diode for Low-Loss Power Electronics. Japanese Journal of Applied Physics, 2012, 51, 090116.	1.5	6
72	Electrically driven single-photon source at room temperature in diamond. Nature Photonics, 2012, 6, 299-303.	31.4	291

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73	Nonlinear behavior of currentâ€dependent emission for diamond lightâ€emitting diodes. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 1754-1760.	1.8	13
74	Diamond Junction Field-Effect Transistors with Selectively Grown n^{+}-Side Gates. Applied Physics Express, 2012, 5, 091301.	2.4	61
75	Maskless Selective Growth Method for pâ€“n Junction Applications on (001)-Oriented Diamond. Japanese Journal of Applied Physics, 2012, 51, 090118.	1.5	6
76	Electrical properties of lateral pâ€“n junction diodes fabricated by selective growth of n⁺ diamond. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 1761-1764.	1.8	32
77	Formation of Step-Free Surfaces on Diamond (111) Mesas by Homoepitaxial Lateral Growth. Japanese Journal of Applied Physics, 2012, 51, 090107.	1.5	19
78	High-Voltage Vacuum Switch with a Diamond pâ€“iâ€“n Diode Using Negative Electron Affinity. Japanese Journal of Applied Physics, 2012, 51, 090113.	1.5	22
79	Device Design of Diamond Schottky-pn Diode for Low-Loss Power Electronics. Japanese Journal of Applied Physics, 2012, 51, 090116.	1.5	5
80	Maskless Selective Growth Method for pâ€“n Junction Applications on (001)-Oriented Diamond. Japanese Journal of Applied Physics, 2012, 51, 090118.	1.5	5
81	Electron emission from CVD diamond pâ€“iâ€“n junctions with negative electron affinity during room temperature operation. Diamond and Related Materials, 2011, 20, 917-921.	3.9	10
82	Carrier transport of diamond p⁺â€iâ€n⁺ junction diode fabricated using lowâ€resistance hopping p⁺ and n⁺ layers. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 937-942.	1.8	5
83	Electron emission from diamond <i>p</i>â€“<i>i</i>â€“<i>n</i> junction diode with heavily Pâ€doped <i>n</i>⁺ top layer. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 2073-2078.	1.8	19
84	Misorientation-angle dependence of boron incorporation into (001)-oriented chemical-vapor-deposited (CVD) diamond. Journal of Crystal Growth, 2011, 317, 60-63.	1.5	90
85	Enhancement in emission efficiency of diamond deep-ultraviolet light emitting diode. Applied Physics Letters, 2011, 99, .	3.3	73
86	Electron emission by current injection from nâ€type diamond film surface with negative electron affinity. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 2093-2098.	1.8	6
87	Improvement of (001)-oriented diamond p-i-n diode by use of selective grown n+ layer. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 2099-2104.	1.8	12
88	Diamond Schottkyâ€pn diode without tradeâ€off relationship between onâ€resistance and blocking voltage. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 2105-2109.	1.8	34
89	Electron Emission from a Diamond (111) pâ€“iâ€“n+Junction Diode with Negative Electron Affinity during Room Temperature Operation. Applied Physics Express, 2010, 3, 041301.	2.4	24
90	Electron Emission from Diamond (111) p+-i-n+ Junction Diode. Materials Research Society Symposia Proceedings, 2009, 1203, 1.	0.1	0

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91	Diamond Schottky pâ€"n diode with high forward current density. Physica Status Solidi (A) Applications and Materials Science, 2009, 206, 2086-2090.	1.8	20
92	Diamond Schottky-pn diode with high forward current density and fast switching operation. Applied Physics Letters, 2009, 94, .	3.3	77
93	Selective Growth of Buried n+Diamond on (001) Phosphorus-Doped n-Type Diamond Film. Applied Physics Express, 2009, 2, 055502.	2.4	55
94	Electrical and light-emitting properties from (111)-oriented homoepitaxial diamond pâ€"iâ€"n junctions. Diamond and Related Materials, 2009, 18, 764-767.	3.9	18
95	High performance of diamond p+-i-n+ junction diode fabricated using heavily doped p+ and n+ layers. Applied Physics Letters, 2009, 94, .	3.3	73
96	Optoelectronic Devices Using Homoepitaxial Diamond p-n and p-i-n Junctions. , 2009, , 379-398.		2
97	Electrical and lightâ€emitting properties of homoepitaxial diamond pâ€"iâ€"n junction. Physica Status Solidi (A) Applications and Materials Science, 2008, 205, 2200-2206.	1.8	29
98	Homoepitaxial diamond pâ€"n+ junction with low specific on-resistance and ideal built-in potential. Diamond and Related Materials, 2008, 17, 782-785.	3.9	23
99	Oxidation processes of surface hydrogenated silicon nanocrystallites prepared by pulsed laser ablation and their effects on the photoluminescence wavelength. Journal of Applied Physics, 2008, 103, 024305.	2.5	16
100	Exciton-derived Electron Emission from (001) Diamond<i>p</i>â€"<i>n</i>Junction Diodes with Negative Electron Affinity. Applied Physics Express, 2008, 1, 015004.	2.4	8
101	n-Type Diamond Growth by Phosphorus Doping. Materials Research Society Symposia Proceedings, 2007, 1039, 1.	0.1	2
102	Formation of nanoscale fine-structured silicon by pulsed laser ablation in hydrogen background gas. Physical Review B, 2007, 76, .	3.2	43
103	Isotope effects between hydrogen and deuterium microwave plasmas on chemical vapor deposition homoepitaxial diamond growth. Journal of Applied Physics, 2007, 101, 103501.	2.5	10
104	Electrical and light-emitting properties of (001)-oriented homoepitaxial diamond pâ€"iâ€"n junction. Diamond and Related Materials, 2007, 16, 1025-1028.	3.9	18
105	n-type diamond growth by phosphorus doping on (0â€‰0â€‰1)-oriented surface. Journal Physics D: Applied Physics, 2007, 40, 6189-6200.	2.8	90
106	Growth and characterization of boron-doped CVD homoepitaxial diamond films. Journal of Crystal Growth, 2007, 299, 235-242.	1.5	4
107	Electrical and optical characterizations of (001)-oriented homoepitaxial diamond pâ€"n junction. Diamond and Related Materials, 2006, 15, 513-516.	3.9	15
108	High-Efficiency Excitonic Emission with Deep-Ultraviolet Light from (001)-Oriented Diamondp-i-nJunction. Japanese Journal of Applied Physics, 2006, 45, L1042-L1044.	1.5	52

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109	Correlation between electronic structure and chemical bond on the surface of hydrogenated silicon nanocrystallites. AIP Conference Proceedings, 2005, , .	0.4	0
110	Preparation of surface controlled silicon nanocrystallites by pulsed laser ablation. AIP Conference Proceedings, 2005, , .	0.4	0
111	Diamond Schottky barrier diodes with low specific on-resistance. Semiconductor Science and Technology, 2005, 20, 1203-1206.	2.0	5
112	Characterization of Field Emission from Nano-Scale Diamond Tip Arrays. Japanese Journal of Applied Physics, 2005, 44, L385-L387.	1.5	8
113	Structural and optical properties of surface-hydrogenated silicon nanocrystallites prepared by reactive pulsed laser ablation. Journal Physics D: Applied Physics, 2005, 38, 3507-3511.	2.8	17
114	Surface conductive layers on oxidized (111) diamonds. Applied Physics Letters, 2005, 87, 262107.	3.3	19
115	Electrical characterization of homoepitaxial diamond pâ€“n+ junction. Diamond and Related Materials, 2005, 14, 1995-1998.	3.9	8
116	Strong Excitonic Emission from (001)-Oriented DiamondP-NJunction. Japanese Journal of Applied Physics, 2005, 44, L1190-L1192.	1.5	22
117	Electrical and optical characterization of boron-doped (111) homoepitaxial diamond films. Diamond and Related Materials, 2005, 14, 1964-1968.	3.9	21
118	Structural and optical properties of silicon nanoparticles prepared by pulsed laser ablation in hydrogen background gas. Applied Physics A: Materials Science and Processing, 2004, 79, 1391-1393.	2.3	11
119	Correlation between surface oxide and photoluminescence properties of Si nanoparticles prepared by pulsed laser ablation. Applied Physics A: Materials Science and Processing, 2004, 79, 1545-1547.	2.3	7
120	Recombination process of CdS quantum dot covered by novel polymer chains. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 21, 1102-1105.	2.7	7
121	Reaction between nitrogen gas and silicon species during pulsed laser ablation. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2003, 21, 1680-1682.	2.1	6
122	Laser Processing for Fabrication of Silicon Nanoparticles and Quantum Dot Functional Structures. The Review of Laser Engineering, 2003, 31, 548-551.	0.0	0
123	Background gas effects on structural properties in thin films deposited by pulsed laser deposition. , 2002, , .		1
124	Mechanisms of Visible Photoluminescence from Size-Controlled Silicon Nanoparticles. Materials Research Society Symposia Proceedings, 2002, 737, 325.	0.1	0
125	<title>Synthesis of quantum nanostructures composed of monodispersed silicon nanoparticles and indium oxide thin films using pulsed laser ablation</title>. , 2002, 4636, 97.		2
126	Electroluminescence of monodispersed silicon nanocrystallites synthesized by pulsed laser ablation in inert background gas. Applied Surface Science, 2002, 197-198, 594-597.	6.1	7

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127	Annealing effects on structures and optical properties of silicon nanostructured films prepared by pulsed-laser ablation in inert background gas. Journal of Applied Physics, 2001, 90, 5075-5080.	2.5	39
128	Monodispersed, nonagglomerated silicon nanocrystallites. Applied Physics Letters, 2001, 78, 2043-2045.	3.3	35
129	Effects of annealing on luminescence properties of Si nanocrystallites prepared by pulsed laser ablation in inert gas. Materials Science and Engineering C, 2001, 15, 129-131.	7.3	2
130	Silicon Nanocrystallite Light Emitting Devices Fabricated by Full Pulsed-Laser-Ablation Process. Materials Research Society Symposia Proceedings, 2000, 638, 1.	0.1	1
131	Stoichiometric indium oxide thin films prepared by pulsed laser deposition in pure inert background gas. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2000, 18, 83-86.	2.1	40
132	Structures and optical properties of silicon nanocrystallites prepared by pulsed-laser ablation in inert background gas. Applied Physics Letters, 2000, 76, 1389-1391.	3.3	46
133	<title>Crystallinities and light-emitting properties of nanostructured SiGe alloy prepared by pulsed laser ablation in inert background gases</title>. , 1999, 3618, 512.		1
134	<title>Semiconductor nanocrystallite formation using inert gas ambient pulsed laser ablation and its application to light-emitting devices</title>. , 1999, 3618, 465.		3
135	Optical Properties and Structural Changes in Semiconductor Fine Particles. Springer Series in Cluster Physics, 1999, , 19-30.	0.3	0
136	Structural phase transition of CdS microcrystals embedded in glassy matrix under high pressure. Journal of Physics Condensed Matter, 1998, 10, 10919-10930.	1.8	10
137	Pressure-induced structural phase transition of CdS microcrystals studied by raman scattering. Journal of Physics and Chemistry of Solids, 1995, 56, 491-494.	4.0	10
138	Pressure Effects on CdS Microcrystals Embedded in Germanate Glasses. Japanese Journal of Applied Physics, 1993, 32, 297.	1.5	6