Alexandre Tallaire

List of Publications by Year
in descending order

112 papers	3,499 citations	109321 35 h-index	161849 54 g-index
113 all docs	113 docs citations	113 times ranked	2374 citing authors

#	Article	IF	Citations
1	Characterisation of high-quality thick single-crystal diamond grown by CVD with a low nitrogen addition. Diamond and Related Materials, 2006, 15, 1700-1707.	3.9	168
2	High quality MPACVD diamond single crystal growth: high microwave power density regime. Journal Physics D: Applied Physics, 2007, 40, 6175-6188.	2.8	157
3	Growth of large size diamond single crystals by plasma assisted chemical vapour deposition: Recent achievements and remaining challenges. Comptes Rendus Physique, 2013, 14, 169-184.	0.9	133
4	Coupled effect of nitrogen addition and surface temperature on the morphology and the kinetics of thick CVD diamond single crystals. Diamond and Related Materials, 2007, 16, 685-689.	3.9	105
5	Diamond-based RF power transistors: Fundamentals and applications. Diamond and Related Materials, 2007, 16, 1010-1015.	3.9	99
6	Surface transfer doping of diamond by MoO₃: A combined spectroscopic and Hall measurement study. Applied Physics Letters, 2013, 103, 202112.	3.3	99
7	Perfect preferential orientation of nitrogen-vacancy defects in a synthetic diamond sample. Applied Physics Letters, 2014, 104, .	3.3	96
8	The control of growth parameters in the synthesis of high-quality single crystalline diamond by CVD. Journal of Crystal Growth, 2005, 284, 396-405.	1.5	95
9	Oxygen plasma pre-treatments for high quality homoepitaxial CVD diamond deposition. Physica Status Solidi A, 2004, 201, 2419-2424.	1.7	85
10	Homoepitaxial deposition of high-quality thick diamond films: effect of growth parameters. Diamond and Related Materials, 2005, 14, 249-254.	3.9	81
11	Photonic nano-structures on (111)-oriented diamond. Applied Physics Letters, 2014, 104, .	3.3	74
12	Enhanced surface transfer doping of diamond by V2O5 with improved thermal stability. Applied Physics Letters, 2016, 108, .	3.3	74
13	Etchâ€pit formation mechanism induced on HPHT and CVD diamond single crystals by H₂/O₂ plasma etching treatment. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 1715-1720.	1.8	72
14	Magnetic imaging with an ensemble of nitrogen-vacancy centers in diamond. European Physical Journal D, 2015, 69, 1.	1.3	70
15	Thick boron doped diamond single crystals for high power electronics. Diamond and Related Materials, 2011, 20, 145-152.	3.9	66
16	Screening and engineering of colour centres in diamond. Journal Physics D: Applied Physics, 2018, 51, 483002.	2.8	66
17	Microwave Device Characterization Using a Widefield Diamond Microscope. Physical Review Applied, 2018, 10, .	3.8	64
18	Chemical vapour deposition diamond single crystals with nitrogen-vacancy centres: a review of material synthesis and technology for quantum sensing applications. Journal Physics D: Applied Physics, 2020, 53, 313001.	2.8	59

#	Article	IF	Citations
19	Origin of growth defects in CVD diamond epitaxial films. Diamond and Related Materials, 2008, 17, 60-65.	3.9	56
20	Initialization and Readout of Nuclear Spins via a Negatively Charged Silicon-Vacancy Center in Diamond. Physical Review Letters, 2019, 122, 190503.	7.8	53
21	Identification of Dislocations in Synthetic Chemically Vapor Deposited Diamond Single Crystals. Crystal Growth and Design, 2016, 16, 2741-2746.	3.0	52
22	Preferential orientation of NV defects in CVD diamond films grown on (113)-oriented substrates. Diamond and Related Materials, 2015, 56, 47-53.	3.9	50
23	Reduction of Dislocations in Single Crystal Diamond by Lateral Growth over a Macroscopic Hole. Advanced Materials, 2017, 29, 1604823.	21.0	48
24	Maskless and targeted creation of arrays of colour centres in diamond using focused ion beam technology. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 2055-2059.	1.8	47
25	Thermally Stable, High Performance Transfer Doping of Diamond using Transition Metal Oxides. Scientific Reports, 2018, 8, 3342.	3.3	46
26	Improvement of dislocation density in thick CVD single crystal diamond films by coupling H₂/O₂ plasma etching and chemoâ€mechanical or ICP treatment of HPHT substrates. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2264-2267.	1.8	45
27	High quality thick CVD diamond films homoepitaxially grown on (111)-oriented substrates. Diamond and Related Materials, 2014, 41, 34-40.	3.9	44
28	Low temperature and large area deposition of nanocrystalline diamond films with distributed antenna array microwave-plasma reactor. Diamond and Related Materials, 2014, 47, 58-65.	3.9	43
29	Thick CVD diamond films grown on high-quality type IIa HPHT diamond substrates from New Diamond Technology. Diamond and Related Materials, 2017, 77, 146-152.	3.9	42
30	Electro-optical response of a single-crystal diamond ultraviolet photoconductor in transverse configuration. Applied Physics Letters, 2005, 86, 213504.	3.3	40
31	Temperature dependent creation of nitrogen-vacancy centers in single crystal CVD diamond layers. Diamond and Related Materials, 2015, 51, 55-60.	3.9	39
32	3D crystal growth model for understanding the role of plasma pre-treatment on CVD diamond crystal shape. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 3049-3055.	1.8	38
33	Passive charge state control of nitrogenâ€vacancy centres in diamond using phosphorous and boron doping. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2268-2273.	1.8	37
34	Growth of thick heavily boron-doped diamond single crystals: Effect of microwave power density. Applied Physics Letters, 2010, 97, .	3.3	36
35	RF Operation of Hydrogen-Terminated Diamond Field Effect Transistors: A Comparative Study. IEEE Transactions on Electron Devices, 2015, 62, 751-756.	3.0	36
36	Birefringence Microscopy of Unit Dislocations in Diamond. Crystal Growth and Design, 2014, 14, 5761-5766.	3.0	35

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37	Growth strategy for controlling dislocation densities and crystal morphologies of single crystal diamond by using pyramidal-shape substrates. Diamond and Related Materials, 2013, 33, 71-77.	3.9	34
38	Freestanding CVD boron doped diamond single crystals: A substrate for vertical power electronic devices?. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 1651-1658.	1.8	33
39	Dislocations and impurities introduced from etch-pits at the epitaxial growth resumption of diamond. Diamond and Related Materials, 2011, 20, 875-881.	3.9	32
40	Ultrathin Eu- and Er-Doped Y₂O₃ Films with Optimized Optical Properties for Quantum Technologies. Journal of Physical Chemistry C, 2019, 123, 13354-13364.	3.1	32
41	Effect of increasing the microwave density in both continuous and pulsed wave mode on the growth of monocrystalline diamond films. Physica Status Solidi A, 2005, 202, 2059-2065.	1.7	30
42	Textured ZnO thin films by solâ€œgel process: Synthesis and characterizations. Thin Solid Films, 2016, 617, 156-160.	1.8	30
43	Optical study of defects in thick undoped CVD synthetic diamond layers. Diamond and Related Materials, 2014, 41, 25-33.	3.9	29
44	Reduction of dislocation densities in single crystal CVD diamond by using self-assembled metallic masks. Diamond and Related Materials, 2015, 58, 62-68.	3.9	29
45	High NV density in a pink CVD diamond grown with N2O addition. Carbon, 2020, 170, 421-429.	10.3	29
46	Effect of argon addition on the growth of thick single crystal diamond by highâ€power plasma CVD. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 2028-2032.	1.8	28
47	Multiple growth and characterization of thick diamond single crystals using chemical vapour deposition working in pulsed mode. Journal of Crystal Growth, 2006, 291, 533-539.	1.5	27
48	Epitaxy of iridium on SrTiO3/Si (001): A promising scalable substrate for diamond heteroepitaxy. Diamond and Related Materials, 2016, 66, 67-76.	3.9	26
49	Reduction of dislocation densities in single crystal CVD diamond by confinement in the lateral sector. Diamond and Related Materials, 2018, 83, 162-169.	3.9	26
50	Largeâ€Scale Fabrication of Highly Emissive Nanodiamonds by Chemical Vapor Deposition with Controlled Doping by SiV and GeV Centers from a Solid Source. Advanced Materials Interfaces, 2020, 7, 1901408.	3.7	26
51	Evaluation of freestanding boron-doped diamond grown by chemical vapour deposition as substrates for vertical power electronic devices. Applied Physics Letters, 2012, 100, .	3.3	25
52	Tribological testing of self-mated nanocrystalline diamond coatings on Si3N4 ceramics. Surface and Coatings Technology, 2006, 200, 6235-6239.	4.8	23
53	Growth of thick and heavily boron-doped (113)-oriented CVD diamond films. Diamond and Related Materials, 2016, 66, 61-66.	3.9	22
54	Production of bulk NV centre arrays by shallow implantation and diamond CVD overgrowth. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 2594-2600.	1.8	21

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55	Influence of oxygen addition on the crystal shape of CVD boron doped diamond. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 2023-2027.	1.8	20
56	Highly photostable NV centre ensembles in CVD diamond produced by using N2O as the doping gas. Applied Physics Letters, 2017, 111, .	3.3	20
57	The role of hydrogen plasma power on surface roughness and carrier transport in transfer-doped H-diamond. Diamond and Related Materials, 2018, 84, 48-54.	3.9	20
58	Synthesis of Loose Nanodiamonds Containing Nitrogen-Vacancy Centers for Magnetic and Thermal Sensing. ACS Applied Nano Materials, 2019, 2, 5952-5962.	5.0	18
59	Fast electrical modulation of strong near-field interactions between erbium emitters and graphene. Nature Communications, 2020, 11, 4094.	12.8	18
60	Epitaxial diamond on Ir/ SrTiO3/Si (001): From sequential material characterizations to fabrication of lateral Schottky diodes. Diamond and Related Materials, 2020, 105, 107768.	3.9	18
61	Determination of exciton diffusion lengths in isotopically engineered diamond junctions. Applied Physics Letters, 2012, 100, .	3.3	17
62	Injection and temperature dependent carrier recombination rate and diffusion length in freestanding <scp>CVD</scp> diamond. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 2016-2021.	1.8	17
63	Controlled size reduction of rare earth doped nanoparticles for optical quantum technologies. RSC Advances, 2018, 8, 37098-37104.	3.6	16
64	Performance Enhancement of Al₂O₃/H-Diamond MOSFETs Utilizing Vacuum Annealing and V₂O₅ as a Surface Electron Acceptor. IEEE Electron Device Letters, 2018, 39, 1354-1357.	3.9	16
65	Coherent optical and spin spectroscopy of nanoscale <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msup><mml:mrow><mml:mi>Pr</mml:mi></mml:mrow><m width="0.28em" /><mml:msub><mml:mi mathvariant="normal">Y</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2019, 100, .	3.2	16
66	Dislocation density reduction using overgrowth on hole arrays made in heteroepitaxial diamond substrates. Applied Physics Letters, 2021, 118, .	3.3	16
67	Thick diamond layers angled by polishing to reveal defect and impurity depth profiles. Diamond and Related Materials, 2008, 17, 506-510.	3.9	15
68	The use of CVD diamond for high-power switching using electron beam exitation. Diamond and Related Materials, 2004, 13, 876-880.	3.9	14
69	High-pressure and high-temperature annealing effects on CVD homoepitaxial diamond films. Diamond and Related Materials, 2006, 15, 1789-1791.	3.9	14
70	Mosaicity, dislocations and strain in heteroepitaxial diamond grown on iridium. Diamond and Related Materials, 2016, 66, 188-195.	3.9	14
71	(111)-oriented, single crystal diamond tips for nanoscale scanning probe imaging of out-of-plane magnetic fields. Applied Physics Letters, 2019, 115, 192401.	3.3	14
72	Experimental CVD Synthetic Diamonds from LIMHP-CNRS, France. Gems & Gemology, 2005, 41, 234-244.	0.6	14

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73	Deposition of nanocrystalline diamond films on silicon nitride ceramic substrates using pulsed microwave discharges in Ar/H2/CH4 gas mixture. Diamond and Related Materials, 2005, 14, 432-436.	3.9	13
74	Ohmic graphite-metal contacts on oxygen-terminated lightly boron-doped CVD monocrystalline diamond. Diamond and Related Materials, 2019, 92, 18-24.	3.9	13
75	Defect Engineering for Quantum Grade Rare-Earth Nanocrystals. ACS Nano, 2020, 14, 9953-9962.	14.6	13
76	Enhancement of the creation yield of NV ensembles in a chemically vapour deposited diamond. Carbon, 2022, 194, 282-289.	10.3	13
77	Influence of surface misorientation of <scp>HPHT</scp> diamond substrates on crystal morphologies and threading dislocations propagation. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 1985-1990.	1.8	12
78	Elastic properties of single crystal diamond made by CVD. Diamond and Related Materials, 2007, 16, 962-965.	3.9	11
79	Thick heavily boron doped CVD diamond films homoepitaxially grown on (111)-oriented substrates. Diamond and Related Materials, 2017, 79, 108-111.	3.9	11
80	A Frequency-Multiplexed Coherent Electro-optic Memory in Rare Earth Doped Nanoparticles. Nano Letters, 2020, 20, 7087-7093.	9.1	11
81	Chemically vapor deposited Eu3+:Y2O3 thin films as a material platform for quantum technologies. Journal of Applied Physics, 2020, 128, .	2.5	11
82	Photoconductive properties of lightly N-doped single crystal CVD diamond films. Diamond and Related Materials, 2007, 16, 953-957.	3.9	10
83	Defect and Threading Dislocations in Single Crystal Diamond: A Focus on Boron and Nitrogen Codoping. Physica Status Solidi (A) Applications and Materials Science, 2019, 216, 1900581.	1.8	9
84	A microplasma process for hexagonal boron nitride thin film synthesis. Applied Physics Letters, 2020, 116, .	3.3	9
85	Picosecond dynamics of free and bound excitons in doped diamond. Physical Review B, 2016, 93, .	3.2	8
86	Experimental characterization of a ns-pulsed micro-hollow cathode discharge (MHCD) array in a N₂/Ar mixture. Plasma Sources Science and Technology, 2019, 28, 035003.	3.1	8
87	Ultrafast Deposition of Diamond by Plasma-Enhanced CVD. , 2014, , 217-268.		7
88	Improving NV centre density during diamond growth by CVD process using N2O gas. Diamond and Related Materials, 2022, 123, 108884.	3.9	7
89	Effect of intergranular phase of Si3N4 substrates on MPCVD diamond deposition. Surface and Coatings Technology, 2002, 151-152, 521-525.	4.8	6
90	Diamond detectors for synchrotron radiation X-ray applications. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2007, 62, 558-561.	2.9	6

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91	Polarization effect on timeâ€ofâ€flight measurements performed on a CVD diamond single crystal. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2636-2640.	1.8	6
92	Optimizing synthetic diamond samples for quantum sensing technologies by tuning the growth temperature. Diamond and Related Materials, 2019, 96, 85-89.	3.9	6
93	Improving the Luminescent Properties of Atomic Layer Deposition Eu:Y₂O₃ Thin Films through Optimized Thermal Annealing. Physica Status Solidi (A) Applications and Materials Science, 2020, 217, 1900909.	1.8	6
94	Optical detection of paramagnetic defects in diamond grown by chemical vapor deposition. Physical Review B, 2021, 103, .	3.2	6
95	Exploring the Origin and Nature of Luminescent Regions in CVD Synthetic Diamond. Gems & Gemology, 2011, 47, 202-207.	0.6	6
96	Bunch by bunch beam monitoring in 3rdand 4thgeneration light sources by means of single crystal diamond detectors and quantum well devices. Proceedings of SPIE, 2012, , .	0.8	5
97	X-Ray Beam Position Monitor Based on a Single Crystal Diamond Performing Bunch by Bunch Detection. Journal of Physics: Conference Series, 2013, 425, 212001.	0.4	5
98	Structural and magnetic properties of cobalt nanostructures on SiO 2 /Si(1 1 1) substrates. Applied Surface Science, 2014, 320, 858-862.	6.1	5
99	X-ray micro beam analysis of the photoresponse of an enlarged CVD diamond single crystal. Diamond and Related Materials, 2013, 34, 36-40.	3.9	4
100	Harnessing Atomic Layer Deposition and Diffusion to Spatially Localize Rare-Earth Ion Emitters. Journal of Physical Chemistry C, 2020, 124, 19725-19735.	3.1	4
101	Controlling the interfacial reactions and environment of rare-earth ions in thin oxide films towards wafer-scalable quantum technologies. Materials Advances, 2022, 3, 300-311.	5.4	4
102	Dosimetric properties of thick single CVD crystal diamonds. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 3030-3035.	1.8	3
103	Selfâ€Assembled Silica Nanoparticles for Diamond Nanoâ€Structuration. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800391.	1.8	3
104	Characteristics of He Ion Implanted Layers on Singleâ€Crystal Diamond. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800264.	1.8	3
105	High frequency hydrogen-terminated diamond field effect transistor technology. , 2012, , .		2
106	Evolution of Diamond Crystal Shape with Boron Concentration during CVD Growth. , 2010, , .		1
107	Heteroepitaxial CVD Growth of 3C-SiC on Diamond Substrate. Materials Science Forum, 2014, 778-780, 226-229.	0.3	1
108	Nitrogen vacancies (NV) centers in diamond for magnetic sensors and quantum sensing. , 2015, , .		1

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109	Si₃N₄ recubierto con diamante CVD mediante filamento caliente y plasma generado por microondas. Boletin De La Sociedad Espanola De Ceramica Y Vidrio, 2004, 43, 473-476.	1.9	1
110	CATHODOLUMINESCENCE AND PHOTOLUMINESCENCE OF NV CENTERS. International Journal of Nanoscience, 2012, 11, 1240016.	0.7	0
111	3C-SiC Seeded Growth on Diamond Substrate by VLS Transport. Materials Science Forum, 2014, 778-780, 234-237.	0.3	0
112	Heteroepitaxy of P-Doped 3C-SiC on Diamond by VLS Transport. Materials Science Forum, 0, 806, 33-37.	0.3	0