

Alexandre Tallaire

List of Publications by Year in descending order

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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	Controlling the interfacial reactions and environment of rare-earth ions in thin oxide films towards wafer-scalable quantum technologies. <i>Materials Advances</i> , 2022, 3, 300-311.	5.4	4
2	Improving NV centre density during diamond growth by CVD process using N ₂ O gas. <i>Diamond and Related Materials</i> , 2022, 123, 108884.	3.9	7
3	Enhancement of the creation yield of NV ensembles in a chemically vapour deposited diamond. <i>Carbon</i> , 2022, 194, 282-289.	10.3	13
4	Dislocation density reduction using overgrowth on hole arrays made in heteroepitaxial diamond substrates. <i>Applied Physics Letters</i> , 2021, 118, .	3.3	16
5	Optical detection of paramagnetic defects in diamond grown by chemical vapor deposition. <i>Physical Review B</i> , 2021, 103, .	3.2	6
6	Large-scale Fabrication of Highly Emissive Nanodiamonds by Chemical Vapor Deposition with Controlled Doping by SiV and GeV Centers from a Solid Source. <i>Advanced Materials Interfaces</i> , 2020, 7, 1901408.	3.7	26
7	High NV density in a pink CVD diamond grown with N ₂ O addition. <i>Carbon</i> , 2020, 170, 421-429.	10.3	29
8	Defect Engineering for Quantum Grade Rare-Earth Nanocrystals. <i>ACS Nano</i> , 2020, 14, 9953-9962.	14.6	13
9	Fast electrical modulation of strong near-field interactions between erbium emitters and graphene. <i>Nature Communications</i> , 2020, 11, 4094.	12.8	18
10	A Frequency-Multiplexed Coherent Electro-optic Memory in Rare Earth Doped Nanoparticles. <i>Nano Letters</i> , 2020, 20, 7087-7093.	9.1	11
11	Chemically vapor deposited Eu ³⁺ :Y ₂ O ₃ thin films as a material platform for quantum technologies. <i>Journal of Applied Physics</i> , 2020, 128, .	2.5	11
12	Harnessing Atomic Layer Deposition and Diffusion to Spatially Localize Rare-Earth Ion Emitters. <i>Journal of Physical Chemistry C</i> , 2020, 124, 19725-19735.	3.1	4
13	Epitaxial diamond on Ir/ SrTiO ₃ /Si (001): From sequential material characterizations to fabrication of lateral Schottky diodes. <i>Diamond and Related Materials</i> , 2020, 105, 107768.	3.9	18
14	Chemical vapour deposition diamond single crystals with nitrogen-vacancy centres: a review of material synthesis and technology for quantum sensing applications. <i>Journal Physics D: Applied Physics</i> , 2020, 53, 313001.	2.8	59
15	Improving the Luminescent Properties of Atomic Layer Deposition Eu:Y ₂ O ₃ Thin Films through Optimized Thermal Annealing. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2020, 217, 1900909.	1.8	6
16	A microplasma process for hexagonal boron nitride thin film synthesis. <i>Applied Physics Letters</i> , 2020, 116, .	3.3	9
17	(111)-oriented, single crystal diamond tips for nanoscale scanning probe imaging of out-of-plane magnetic fields. <i>Applied Physics Letters</i> , 2019, 115, 192401.	3.3	14
18	Defect and Threading Dislocations in Single Crystal Diamond: A Focus on Boron and Nitrogen Codoping. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2019, 216, 1900581.	1.8	9

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19	Synthesis of Loose Nanodiamonds Containing Nitrogen-Vacancy Centers for Magnetic and Thermal Sensing. ACS Applied Nano Materials, 2019, 2, 5952-5962.	5.0	18
20	Coherent optical and spin spectroscopy of nanoscale Y_2O_3 films with optimized optical properties for quantum technologies. Journal of Physical Chemistry C, 2019, 123, 13354-13364.	3.2	16
21	Physical Review B, 2019, 100, . Experimental characterization of a ns-pulsed micro-hollow cathode discharge (MHCD) array in a N_2/Ar mixture. Plasma Sources Science and Technology, 2019, 28, 035003.	3.1	8
22	Initialization and Readout of Nuclear Spins via a Negatively Charged Silicon-Vacancy Center in Diamond. Physical Review Letters, 2019, 122, 190503.	7.8	53
23	Optimizing synthetic diamond samples for quantum sensing technologies by tuning the growth temperature. Diamond and Related Materials, 2019, 96, 85-89.	3.9	6
24	Ultrathin Eu- and Er-Doped Y_2O_3 Films with Optimized Optical Properties for Quantum Technologies. Journal of Physical Chemistry C, 2019, 123, 13354-13364.	3.1	32
25	Ohmic graphite-metal contacts on oxygen-terminated lightly boron-doped CVD monocrystalline diamond. Diamond and Related Materials, 2019, 92, 18-24.	3.9	13
26	Thermally Stable, High Performance Transfer Doping of Diamond using Transition Metal Oxides. Scientific Reports, 2018, 8, 3342.	3.3	46
27	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
28	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
29	Controlled size reduction of rare earth doped nanoparticles for optical quantum technologies. RSC Advances, 2018, 8, 37098-37104.	3.6	16
30	Self-Assembled Silica Nanoparticles for Diamond Nanostructuring. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800391.	1.8	3
31	Characteristics of He Ion Implanted Layers on Single-Crystal Diamond. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800264.	1.8	3
32	Microwave Device Characterization Using a Widefield Diamond Microscope. Physical Review Applied, 2018, 10, .	3.8	64
33	Screening and engineering of colour centres in diamond. Journal Physics D: Applied Physics, 2018, 51, 483002.	2.8	66
34	Performance Enhancement of $\text{Al}_2\text{O}_3/\text{H}$ -Diamond MOSFETs Utilizing Vacuum Annealing and V_2O_5 as a Surface Electron Acceptor. IEEE Electron Device Letters, 2018, 39, 1354-1357.	3.9	16
35	Reduction of Dislocations in Single Crystal Diamond by Lateral Growth over a Macroscopic Hole. Advanced Materials, 2017, 29, 1604823.	21.0	48
36	Highly photostable NV centre ensembles in CVD diamond produced by using N_2O as the doping gas. Applied Physics Letters, 2017, 111, .	3.3	20

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37	Thick heavily boron doped CVD diamond films homoepitaxially grown on (111)-oriented substrates. <i>Diamond and Related Materials</i> , 2017, 79, 108-111.	3.9	11
38	Thick CVD diamond films grown on high-quality type IIa HPHT diamond substrates from New Diamond Technology. <i>Diamond and Related Materials</i> , 2017, 77, 146-152.	3.9	42
39	Enhanced surface transfer doping of diamond by V2O5 with improved thermal stability. <i>Applied Physics Letters</i> , 2016, 108, .	3.3	74
40	Identification of Dislocations in Synthetic Chemically Vapor Deposited Diamond Single Crystals. <i>Crystal Growth and Design</i> , 2016, 16, 2741-2746.	3.0	52
41	Mosaicity, dislocations and strain in heteroepitaxial diamond grown on iridium. <i>Diamond and Related Materials</i> , 2016, 66, 188-195.	3.9	14
42	Production of bulk NV centre arrays by shallow implantation and diamond CVD overgrowth. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2016, 213, 2594-2600.	1.8	21
43	Picosecond dynamics of free and bound excitons in doped diamond. <i>Physical Review B</i> , 2016, 93, .	3.2	8
44	Textured ZnO thin films by sol-gel process: Synthesis and characterizations. <i>Thin Solid Films</i> , 2016, 617, 156-160.	1.8	30
45	Epitaxy of iridium on SrTiO3/Si (001): A promising scalable substrate for diamond heteroepitaxy. <i>Diamond and Related Materials</i> , 2016, 66, 67-76.	3.9	26
46	Growth of thick and heavily boron-doped (113)-oriented CVD diamond films. <i>Diamond and Related Materials</i> , 2016, 66, 61-66.	3.9	22
47	Polarization effect on time-of-flight measurements performed on a CVD diamond single crystal. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2015, 212, 2636-2640.	1.8	6
48	Preferential orientation of NV defects in CVD diamond films grown on (113)-oriented substrates. <i>Diamond and Related Materials</i> , 2015, 56, 47-53.	3.9	50
49	Magnetic imaging with an ensemble of nitrogen-vacancy centers in diamond. <i>European Physical Journal D</i> , 2015, 69, 1.	1.3	70
50	Reduction of dislocation densities in single crystal CVD diamond by using self-assembled metallic masks. <i>Diamond and Related Materials</i> , 2015, 58, 62-68.	3.9	29
51	Nitrogen vacancies (NV) centers in diamond for magnetic sensors and quantum sensing. , 2015, , .		1
52	RF Operation of Hydrogen-Terminated Diamond Field Effect Transistors: A Comparative Study. <i>IEEE Transactions on Electron Devices</i> , 2015, 62, 751-756.	3.0	36
53	Temperature dependent creation of nitrogen-vacancy centers in single crystal CVD diamond layers. <i>Diamond and Related Materials</i> , 2015, 51, 55-60.	3.9	39
54	Ultrafast Deposition of Diamond by Plasma-Enhanced CVD. , 2014, , 217-268.		7

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55	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
56	3C-SiC Seeded Growth on Diamond Substrate by VLS Transport. Materials Science Forum, 2014, 778-780, 234-237.	0.3	0
57	Heteroepitaxial CVD Growth of 3C-SiC on Diamond Substrate. Materials Science Forum, 2014, 778-780, 226-229.	0.3	1
58	Improvement of dislocation density in thick CVD single crystal diamond films by coupling H ₂ /O ₂ plasma etching and chemo-mechanical or ICP treatment of HPHT substrates. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2264-2267.	1.8	45
59	Optical study of defects in thick undoped CVD synthetic diamond layers. Diamond and Related Materials, 2014, 41, 25-33.	3.9	29
60	High quality thick CVD diamond films homoepitaxially grown on (111)-oriented substrates. Diamond and Related Materials, 2014, 41, 34-40.	3.9	44
61	Perfect preferential orientation of nitrogen-vacancy defects in a synthetic diamond sample. Applied Physics Letters, 2014, 104, .	3.3	96
62	Birefringence Microscopy of Unit Dislocations in Diamond. Crystal Growth and Design, 2014, 14, 5761-5766.	3.0	35
63	Passive charge state control of nitrogen-vacancy centres in diamond using phosphorous and boron doping. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2268-2273.	1.8	37
64	Photonic nano-structures on (111)-oriented diamond. Applied Physics Letters, 2014, 104, .	3.3	74
65	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
66	Surface transfer doping of diamond by MoO ₃ : A combined spectroscopic and Hall measurement study. Applied Physics Letters, 2013, 103, 202112.	3.3	99
67	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
68	Influence of surface misorientation of <sc>HPHT</sc> diamond substrates on crystal morphologies and threading dislocations propagation. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 1985-1990.	1.8	12
69	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
70	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
71	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
72	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

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73	Injection and temperature dependent carrier recombination rate and diffusion length in freestanding CVD diamond. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 2016-2021.	1.8	17
74	CATHODOLUMINESCENCE AND PHOTOLUMINESCENCE OF NV CENTERS. International Journal of Nanoscience, 2012, 11, 1240016.	0.7	0
75	Bunch by bunch beam monitoring in 3rd and 4th generation light sources by means of single crystal diamond detectors and quantum well devices. Proceedings of SPIE, 2012, , .	0.8	5
76	High frequency hydrogen-terminated diamond field effect transistor technology. , 2012, , .		2
77	Determination of exciton diffusion lengths in isotopically engineered diamond junctions. Applied Physics Letters, 2012, 100, .	3.3	17
78	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
79	Etch pit formation mechanism induced on HPHT and CVD diamond single crystals by H ₂ /O ₂ plasma etching treatment. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 1715-1720.	1.8	72
80	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
81	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
82	Thick boron doped diamond single crystals for high power electronics. Diamond and Related Materials, 2011, 20, 145-152.	3.9	66
83	Effect of argon addition on the growth of thick single crystal diamond by high power plasma CVD. Physica Status Solidi (A) Applications and Materials Science, 2011, 208, 2028-2032.	1.8	28
84	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
85	Exploring the Origin and Nature of Luminescent Regions in CVD Synthetic Diamond. Gems & Gemology, 2011, 47, 202-207.	0.6	6
86	Growth of thick heavily boron-doped diamond single crystals: Effect of microwave power density. Applied Physics Letters, 2010, 97, .	3.3	36
87	Evolution of Diamond Crystal Shape with Boron Concentration during CVD Growth. , 2010, , .		1
88	Thick diamond layers angled by polishing to reveal defect and impurity depth profiles. Diamond and Related Materials, 2008, 17, 506-510.	3.9	15
89	Origin of growth defects in CVD diamond epitaxial films. Diamond and Related Materials, 2008, 17, 60-65.	3.9	56
90	High quality MPACVD diamond single crystal growth: high microwave power density regime. Journal Physics D: Applied Physics, 2007, 40, 6175-6188.	2.8	157

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91	Photoconductive properties of lightly N-doped single crystal CVD diamond films. <i>Diamond and Related Materials</i> , 2007, 16, 953-957.	3.9	10
92	Coupled effect of nitrogen addition and surface temperature on the morphology and the kinetics of thick CVD diamond single crystals. <i>Diamond and Related Materials</i> , 2007, 16, 685-689.	3.9	105
93	Elastic properties of single crystal diamond made by CVD. <i>Diamond and Related Materials</i> , 2007, 16, 962-965.	3.9	11
94	Diamond-based RF power transistors: Fundamentals and applications. <i>Diamond and Related Materials</i> , 2007, 16, 1010-1015.	3.9	99
95	Diamond detectors for synchrotron radiation X-ray applications. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2007, 62, 558-561.	2.9	6
96	Dosimetric properties of thick single CVD crystal diamonds. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2007, 204, 3030-3035.	1.8	3
97	High-pressure and high-temperature annealing effects on CVD homoepitaxial diamond films. <i>Diamond and Related Materials</i> , 2006, 15, 1789-1791.	3.9	14
98	Characterisation of high-quality thick single-crystal diamond grown by CVD with a low nitrogen addition. <i>Diamond and Related Materials</i> , 2006, 15, 1700-1707.	3.9	168
99	3D crystal growth model for understanding the role of plasma pre-treatment on CVD diamond crystal shape. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2006, 203, 3049-3055.	1.8	38
100	Multiple growth and characterization of thick diamond single crystals using chemical vapour deposition working in pulsed mode. <i>Journal of Crystal Growth</i> , 2006, 291, 533-539.	1.5	27
101	Tribological testing of self-mated nanocrystalline diamond coatings on Si ₃ N ₄ ceramics. <i>Surface and Coatings Technology</i> , 2006, 200, 6235-6239.	4.8	23
102	The control of growth parameters in the synthesis of high-quality single crystalline diamond by CVD. <i>Journal of Crystal Growth</i> , 2005, 284, 396-405.	1.5	95
103	Effect of increasing the microwave density in both continuous and pulsed wave mode on the growth of monocrystalline diamond films. <i>Physica Status Solidi A</i> , 2005, 202, 2059-2065.	1.7	30
104	Electro-optical response of a single-crystal diamond ultraviolet photoconductor in transverse configuration. <i>Applied Physics Letters</i> , 2005, 86, 213504.	3.3	40
105	Deposition of nanocrystalline diamond films on silicon nitride ceramic substrates using pulsed microwave discharges in Ar/H ₂ /CH ₄ gas mixture. <i>Diamond and Related Materials</i> , 2005, 14, 432-436.	3.9	13
106	Homoepitaxial deposition of high-quality thick diamond films: effect of growth parameters. <i>Diamond and Related Materials</i> , 2005, 14, 249-254.	3.9	81
107	Experimental CVD Synthetic Diamonds from LIMHP-CNRS, France. <i>Gems & Gemology</i> , 2005, 41, 234-244.	0.6	14
108	The use of CVD diamond for high-power switching using electron beam excitation. <i>Diamond and Related Materials</i> , 2004, 13, 876-880.	3.9	14

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109	Oxygen plasma pre-treatments for high quality homoepitaxial CVD diamond deposition. Physica Status Solidi A, 2004, 201, 2419-2424.	1.7	85
110	Si ₃ N ₄ 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
111	Effect of intergranular phase of Si ₃ N ₄ substrates on MPCVD diamond deposition. Surface and Coatings Technology, 2002, 151-152, 521-525.	4.8	6
112	Heteroepitaxy of P-Doped 3C-SiC on Diamond by VLS Transport. Materials Science Forum, 0, 806, 33-37.	0.3	0