Jocelyn Achard

List of Publications by Year
in descending order

127 papers	5,395 citations	101543 36 h-index	85541 71 g-index
127 all docs	127 docs citations	127 times ranked	3792 citing authors

#	Article	IF	Citations
1	Ultralong spin coherence time in isotopically engineered diamond. Nature Materials, 2009, 8, 383-387.	27.5	1,596
2	CVD diamond films: from growth to applications. Current Applied Physics, 2001, 1, 479-496.	2.4	168
3	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
4	High quality MPACVD diamond single crystal growth: high microwave power density regime. Journal Physics D: Applied Physics, 2007, 40, 6175-6188.	2.8	157
5	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
6	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
7	High quality, large surface area, homoepitaxial MPACVD diamond growth. Diamond and Related Materials, 2009, 18, 683-697.	3.9	105
8	Perfect preferential orientation of nitrogen-vacancy defects in a synthetic diamond sample. Applied Physics Letters, 2014, 104, .	3.3	96
9	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
10	Oxygen plasma pre-treatments for high quality homoepitaxial CVD diamond deposition. Physica Status Solidi A, 2004, 201, 2419-2424.	1.7	85
11	Enhanced generation of single optically active spins in diamond by ion implantation. Applied Physics Letters, 2010, 96, .	3.3	84
12	Homoepitaxial deposition of high-quality thick diamond films: effect of growth parameters. Diamond and Related Materials, 2005, 14, 249-254.	3.9	81
13	Engineered arrays of nitrogen-vacancy color centers in diamond based on implantation of CN^{âˆ’}molecules through nanoapertures. New Journal of Physics, 2011, 13, 025014.	2.9	75
14	Photonic nano-structures on (111)-oriented diamond. Applied Physics Letters, 2014, 104, .	3.3	74
15	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
16	Magnetic imaging with an ensemble of nitrogen-vacancy centers in diamond. European Physical Journal D, 2015, 69, 1.	1.3	70
17	Thick boron doped diamond single crystals for high power electronics. Diamond and Related Materials, 2011, 20, 145-152.	3.9	66
18	Microwave Device Characterization Using a Widefield Diamond Microscope. Physical Review Applied, 2018, 10, .	3.8	64

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19	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
20	Geometric modeling of homoepitaxial CVD diamond growth: I. The {100}{111}{110}{113} system. Journal of Crystal Growth, 2008, 310, 187-203.	1.5	55
21	Identification of etchâ€pit crystallographic faces induced on diamond surface by H₂/O₂ etching plasma treatment. Physica Status Solidi (A) Applications and Materials Science, 2009, 206, 1949-1954.	1.8	55
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	Identification of Dislocations in Synthetic Chemically Vapor Deposited Diamond Single Crystals. Crystal Growth and Design, 2016, 16, 2741-2746.	3.0	52
24	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
25	R&D around a photoneutralizer-based NBI system (Siphore) in view of a DEMO Tokamak steady state fusion reactor. Nuclear Fusion, 2015, 55, 123020.	3.5	50
26	Reduction of Dislocations in Single Crystal Diamond by Lateral Growth over a Macroscopic Hole. Advanced Materials, 2017, 29, 1604823.	21.0	48
27	Defect analysis and excitons diffusion in undoped homoepitaxial diamond films after polishing and oxygen plasma etching. Diamond and Related Materials, 2009, 18, 1205-1210.	3.9	45
28	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
29	Boron acceptor concentration in diamond from excitonic recombination intensities. Physical Review B, 2011, 83, .	3.2	44
30	High quality thick CVD diamond films homoepitaxially grown on (111)-oriented substrates. Diamond and Related Materials, 2014, 41, 34-40.	3.9	44
31	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
32	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
33	Electro-optical response of a single-crystal diamond ultraviolet photoconductor in transverse configuration. Applied Physics Letters, 2005, 86, 213504.	3.3	40
34	Dependence of CVD diamond growth rate on substrate orientation as a function of process parameters in the high microwave power density regime. Physica Status Solidi (A) Applications and Materials Science, 2008, 205, 2114-2120.	1.8	40
35	Temperature dependent creation of nitrogen-vacancy centers in single crystal CVD diamond layers. Diamond and Related Materials, 2015, 51, 55-60.	3.9	39
36	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

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37	Single crystal CVD diamond growth strategy by the use of a 3D geometrical model: Growth on (113) oriented substrates. Diamond and Related Materials, 2008, 17, 1067-1075.	3.9	37
38	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
39	Growth of thick heavily boron-doped diamond single crystals: Effect of microwave power density. Applied Physics Letters, 2010, 97, .	3.3	36
40	Birefringence Microscopy of Unit Dislocations in Diamond. Crystal Growth and Design, 2014, 14, 5761-5766.	3.0	35
41	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
42	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
43	Alternative solutions to caesium in negative-ion sources: a study of negative-ion surface production on diamond in H₂/D₂ plasmas. New Journal of Physics, 2017, 19, 025010.	2.9	33
44	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
45	Homoepitaxial boronâ€doped diamond with very low compensation. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 1750-1753.	1.8	32
46	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
47	Dislocation imaging for electronics application crystal selection. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 4298-4304.	1.8	29
48	Optical study of defects in thick undoped CVD synthetic diamond layers. Diamond and Related Materials, 2014, 41, 25-33.	3.9	29
49	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
50	High NV density in a pink CVD diamond grown with N2O addition. Carbon, 2020, 170, 421-429.	10.3	29
51	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
52	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
53	An assessment of contact metallization for high power and high temperature diamond Schottky devices. Diamond and Related Materials, 2012, 27-28, 23-28.	3.9	26
54	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

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55	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
56	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
57	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
58	Low roughness diamond films produced at temperatures less than 600Â°C. Diamond and Related Materials, 2000, 9, 1965-1970.	3.9	22
59	Growth of thick and heavily boron-doped (113)-oriented CVD diamond films. Diamond and Related Materials, 2016, 66, 61-66.	3.9	22
60	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
61	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
62	Nanocrystalline diamond films grown at very low substrate temperature using a distributed antenna array microwave process: Towards polymeric substrate coating. Diamond and Related Materials, 2017, 75, 44-51.	3.9	20
63	Highly photostable NV centre ensembles in CVD diamond produced by using N2O as the doping gas. Applied Physics Letters, 2017, 111, .	3.3	20
64	Temporal response of UV sensors made of highly oriented diamond films by 193 and 313 nm laser pulses. Diamond and Related Materials, 2001, 10, 1794-1798.	3.9	19
65	Bulk photoconductivity of CVD diamond films for UV and XUV detection. Diamond and Related Materials, 2003, 12, 642-646.	3.9	19
66	CVD diamond Schottky barrier diode, carrying out and characterization. Diamond and Related Materials, 2010, 19, 792-795.	3.9	18
67	Microstructure and growth kinetics of nanocrystalline diamond films deposited in large area/low temperature distributed antenna array microwaveâ€plasma reactor. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2611-2615.	1.8	18
68	Synthesis of Loose Nanodiamonds Containing Nitrogen-Vacancy Centers for Magnetic and Thermal Sensing. ACS Applied Nano Materials, 2019, 2, 5952-5962.	5.0	18
69	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
70	Determination of exciton diffusion lengths in isotopically engineered diamond junctions. Applied Physics Letters, 2012, 100, .	3.3	17
71	Grafting polymerâ€"protein bioconjugate to boron-doped diamond using aryl diazonium coupling agents. Diamond and Related Materials, 2013, 40, 60-68.	3.9	17
72	Dislocation density reduction using overgrowth on hole arrays made in heteroepitaxial diamond substrates. Applied Physics Letters, 2021, 118, .	3.3	16

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73	Photoconductivity of highly oriented and randomly oriented diamond films for the detection of fast UV laser pulses. Diamond and Related Materials, 2002, 11, 423-426.	3.9	15
74	The use of CVD diamond for high-power switching using electron beam exitation. Diamond and Related Materials, 2004, 13, 876-880.	3.9	14
75	Mosaicity, dislocations and strain in heteroepitaxial diamond grown on iridium. Diamond and Related Materials, 2016, 66, 188-195.	3.9	14
76	Lowâ€temperature deposition of nanocrystalline diamond films on silicon nitride substrates using distributed antenna array PECVD system. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 2575-2581.	1.8	14
77	(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
78	Experimental CVD Synthetic Diamonds from LIMHP-CNRS, France. Gems & Gemology, 2005, 41, 234-244.	0.6	14
79	Ohmic graphite-metal contacts on oxygen-terminated lightly boron-doped CVD monocrystalline diamond. Diamond and Related Materials, 2019, 92, 18-24.	3.9	13
80	Enhancement of the creation yield of NV ensembles in a chemically vapour deposited diamond. Carbon, 2022, 194, 282-289.	10.3	13
81	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
82	Growth processes of nanocrystalline diamond films in microwave cavity and distributed antenna array systems: A comparative study. Diamond and Related Materials, 2017, 71, 53-62.	3.9	12
83	Elastic properties of single crystal diamond made by CVD. Diamond and Related Materials, 2007, 16, 962-965.	3.9	11
84	Thick heavily boron doped CVD diamond films homoepitaxially grown on (111)-oriented substrates. Diamond and Related Materials, 2017, 79, 108-111.	3.9	11
85	Photoconductive properties of lightly N-doped single crystal CVD diamond films. Diamond and Related Materials, 2007, 16, 953-957.	3.9	10
86	Improvement of energetic efficiency for homoepitaxial diamond growth in a H₂/CH₄ pulsed discharge. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 2847-2853.	1.8	10
87	Thick and widened high quality heavily boron doped diamond single crystals synthetized with high oxygen flow under high microwave power regime. Diamond and Related Materials, 2019, 94, 88-91.	3.9	10
88	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
89	Picosecond dynamics of free and bound excitons in doped diamond. Physical Review B, 2016, 93, .	3.2	8
90	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

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91	Ultrafast Deposition of Diamond by Plasma-Enhanced CVD. , 2014, , 217-268.		7
92	Improving NV centre density during diamond growth by CVD process using N2O gas. Diamond and Related Materials, 2022, 123, 108884.	3.9	7
93	Diamond detectors for synchrotron radiation X-ray applications. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2007, 62, 558-561.	2.9	6
94	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
95	Impact of positive ion energy on carbon-surface production of negative ions in deuterium plasmas. Journal Physics D: Applied Physics, 2019, 52, 435201.	2.8	6
96	Optimizing synthetic diamond samples for quantum sensing technologies by tuning the growth temperature. Diamond and Related Materials, 2019, 96, 85-89.	3.9	6
97	Investigation of a distributed antenna array microwave system for the three-dimensional low-temperature growth of nanocrystalline diamond films. Diamond and Related Materials, 2019, 94, 28-36.	3.9	6
98	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
99	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
100	Effect of the process parameters of inductively coupled plasma reactive ion etching on the fabrication of diamond nanotips. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2343-2346.	1.8	5
101	Study of Low Temperature Deposition of Nanocrystalline Diamond Films on ZnO/LiNbO₃ Layered Structures Suitable for Waveguiding Layer Acoustic Wave Devices. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800251.	1.8	5
102	Pulsed DC bias for the study of negative-ion production on surfaces of insulating materials in low pressure hydrogen plasmas. Journal of Applied Physics, 2019, 125, .	2.5	5
103	Electrical characterization of InP epitaxial layers using mobility spectrum technique. Applied Surface Science, 1999, 142, 455-459.	6.1	4
104	Bulk CVD diamond devices for UV and XUV detection. Diamond and Related Materials, 2003, 12, 1804-1808.	3.9	4
105	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
106	Investigation of Nucleation and Growth of Nanocrystalline Diamond Films Deposited at Low Temperature Using In Situ Laser Reflectance Interferometry. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1700205.	1.8	4
107	Enhancing surface production of negative ions using nitrogen doped diamond in a deuterium plasma. Journal Physics D: Applied Physics, 2020, 53, 465204.	2.8	4
108	3D kinetic Monte-Carlo simulations of diamond growth on (1 0 0) surfaces. Diamond and Related Materials, 2022, 123, 108865.	3.9	4

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109	Comments on the appearance of â€œmirrorâ€• peaks in mobility spectrum analysis of semiconducting devices. Applied Surface Science, 2000, 158, 345-352.	6.1	3
110	Dosimetric properties of thick single CVD crystal diamonds. Physica Status Solidi (A) Applications and Materials Science, 2007, 204, 3030-3035.	1.8	3
111	Single-crystal and polycrystalline diamond erosion studies in Pilot-PSI. Journal of Nuclear Materials, 2018, 500, 110-118.	2.7	3
112	Selfâ€Assembled Silica Nanoparticles for Diamond Nanoâ€Structuration. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800391.	1.8	3
113	Characteristics of He Ion Implanted Layers on Singleâ€Crystal Diamond. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800264.	1.8	3
114	Microstructure and biological evaluation of nanocrystalline diamond films deposited on titanium substrates using distributed antenna array microwave system. Diamond and Related Materials, 2020, 103, 107700.	3.9	3
115	Study of CVD diamond films for thermal management in power electronics. , 2007, , .		2
116	Surface transformation of graphite or diamond following Highly Charged Ion irradiation. Nuclear Instruments & Methods in Physics Research B, 2009, 267, 678-682.	1.4	2
117	Modelling of low-temperature/large-area distributed antenna array microwave-plasma reactor used for nanocrystalline diamond deposition. EPJ Applied Physics, 2018, 81, 10804.	0.7	2
118	Surface production of negative ions from pulse-biased nitrogen doped diamond within a low-pressure deuterium plasma. Journal Physics D: Applied Physics, 2021, 54, 435201.	2.8	2
119	Evolution of Diamond Crystal Shape with Boron Concentration during CVD Growth. , 2010, , .		1
120	Nitrogen vacancies (NV) centers in diamond for magnetic sensors and quantum sensing. , 2015, , .		1
121	Diamond Schottky diodes operating at 473 K. EPE Journal (European Power Electronics and Drives) Tj ETQq1 1 0.784314 rgBT /Overlock	0.7	1
122	Production of bulk NV centre arrays by shallow implantation and diamond CVD overgrowth (Phys.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	1.8	1
123	The use of CVD diamond for high-power switching using electron beam exitation. Diamond and Related Materials, 2004, 13, 876-876.	3.9	0
124	CATHODOLUMINESCENCE AND PHOTOLUMINESCENCE OF NV CENTERS. International Journal of Nanoscience, 2012, 11, 1240016.	0.7	0
125	Ohmic contacts study of P+N diodes on (111) and (100) diamond. , 2019, , .		0
126	Mise en place d'une filiÃ¨re pour la rÃ©alisation de composants de puissance en diamant. Revue Internationale De GÃ©nie Ã©lectrique, 2009, 12, 237-253.	0.0	0

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127	Diode Schottky sur diamant CVD. Simulation, rÃ©alisation technologique et Ã©tude de protection pÃ©riphÃ©rique. European Journal of Electrical Engineering, 2011, 14, 553-567.	0.3	0