F Alvarez

List of Publications by Year
in descending order

118 papers	2,821 citations	186209 28 h-index	206029 48 g-index
119 all docs	119 docs citations	119 times ranked	2439 citing authors

#	Article	IF	Citations
1	Electronic structure of nitrogen-carbon alloys(aâˆ’CNx)determined by photoelectron spectroscopy. Physical Review B, 1998, 57, 2536-2540.	1.1	228
2	Electronic structure of hydrogenated carbon nitride films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1998, 16, 2941-2949.	0.9	162
3	Surface and Electronic Structure of Titanium Dioxide Photocatalysts. Journal of Physical Chemistry B, 2000, 104, 9851-9858.	1.2	157
4	Nitrogen substitution of carbon in graphite: Structure evolution toward molecular forms. Physical Review B, 1998, 58, 13918-13924.	1.1	148
5	Incorporation of nitrogen in carbon nanotubes. Journal of Non-Crystalline Solids, 2002, 299-302, 874-879.	1.5	92
6	The role of hydrogen in nitrogen-containing diamondlike films studied by photoelectron spectroscopy. Applied Physics Letters, 1997, 70, 1539-1541.	1.5	77
7	Comparative study on the bonding structure of hydrogenated and hydrogen free carbon nitride films with high N content. Diamond and Related Materials, 2000, 9, 577-581.	1.8	68
8	Influence of microstructure on the corrosion behavior of nitrocarburized AISI H13 tool steel obtained by pulsed DC plasma. Surface and Coatings Technology, 2009, 203, 1293-1297.	2.2	67
9	Comprehensive spectroscopic study of nitrogenated carbon nanotubes. Physical Review B, 2004, 69, .	1.1	65
10	Influence of the process temperature on the steel microstructure and hardening in pulsed plasma nitriding. Surface and Coatings Technology, 2006, 201, 452-457.	2.2	63
11	Infrared analysis of deuterated carbonâ€“nitrogen films obtained by dual-ion-beam-assisted-deposition. Applied Physics Letters, 1998, 73, 1065-1067.	1.5	58
12	Chemical (dis)order in a-Si1âˆ’xCx:H for x<0.6. Physical Review B, 1997, 55, 4426-4434.	1.1	57
13	Effects of increasing nitrogen concentration on the structure of carbon nitride films deposited by ion beam assisted deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2000, 18, 2277.	0.9	51
14	The influence of different silicon adhesion interlayers on the tribological behavior of DLC thin films deposited on steel by EC-PECVD. Surface and Coatings Technology, 2015, 283, 115-121.	2.2	49
15	Influence of chemical sputtering on the composition and bonding structure of carbon nitride films. Thin Solid Films, 2001, 398-399, 116-123.	0.8	47
16	Hard graphitic-like amorphous carbon films with high stress and local microscopic density. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2001, 19, 971-975.	0.9	47
17	Identification of the Chemical Bonding Prompting Adhesion of a-C:H Thin Films on Ferrous Alloy Intermediated by a SiC_{<i>x</i>}:H <i>Buffer Layer</i>. ACS Applied Materials & Interfaces, 2015, 7, 15909-15917.	4.0	44
18	Time resolved photoluminescence of porous silicon: Evidence for tunneling limited recombination in a band of localized states. Applied Physics Letters, 1993, 62, 2381-2383.	1.5	42

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19	Vibrational analysis of amorphous carbon-nitrogen alloys by15Nand D isotopic substitution. Physical Review B, 2000, 61, 1083-1087.	1.1	42
20	The influence of the ion current density on plasma nitriding process. Surface and Coatings Technology, 2005, 200, 2165-2169.	2.2	40
21	Nanosized precipitates in H13 tool steel low temperature plasma nitriding. Surface and Coatings Technology, 2012, 207, 72-78.	2.2	40
22	Stability of Small Carbon-Nitride Heterofullerenes. Physical Review Letters, 2003, 90, 015501.	2.9	38
23	Effect of hydrogen and oxygen on stainless steel nitriding. Journal of Applied Physics, 2002, 92, 764-770.	1.1	36
24	Influence of hydrogen dilution on the optoelectronic properties of glow discharge amorphous silicon carbon alloys. Journal of Applied Physics, 1992, 71, 267-272.	1.1	35
25	Microstructure and properties of the compound layer obtained by pulsed plasma nitriding in steel gears. Surface and Coatings Technology, 2009, 203, 1457-1461.	2.2	35
26	Pressure-induced physical changes of noble gases implanted in highly stressed amorphous carbon films. Physical Review B, 2003, 68, .	1.1	34
27	On the structure of argon assisted amorphous carbon films. Diamond and Related Materials, 2000, 9, 796-800.	1.8	33
28	Evidence of quantum size effects in a-Si:H/a-SiCx:H superlattices. Observation of negative resistance in double barrier structures. Journal of Non-Crystalline Solids, 1987, 97-98, 871-874.	1.5	31
29	Single chamber PVD/PECVD process for in situ control of the catalyst activity on carbon nanotubes growth. Surface and Coatings Technology, 2005, 200, 1101-1105.	2.2	30
30	Infrared study of the Siâ€H stretching band inaâ€SiC:H. Journal of Applied Physics, 1991, 69, 7805-7811.	1.1	28
31	Direct evidence of porosity in carbonâ€rich hydrogenated amorphous silicon carbide films. Journal of Applied Physics, 1989, 66, 4544-4546.	1.1	27
32	Hydrogen induced changes on the electronic structure of carbon nitride films. Journal of Non-Crystalline Solids, 1998, 227-230, 645-649.	1.5	26
33	Structural modifications and corrosion behavior of martensitic stainless steel nitrided by plasma immersion ion implantation. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, 693-698.	0.9	26
34	Nanosize structures connectivity in porous silicon and its relation to photoluminescence efficiency. Applied Physics Letters, 1993, 63, 1927-1929.	1.5	25
35	Identification of structural changes in carbonâ€“nitrogen alloys by studying the dependence of the plasmon energy on nitrogen concentration. Applied Physics Letters, 1998, 73, 3521-3523.	1.5	24
36	Structural properties of aluminumâ€“nitrogen films prepared at low temperature. Applied Physics Letters, 2002, 81, 1005-1007.	1.5	24

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37	On the hydrogenated silicon carbide (SiCx:H) interlayer properties prompting adhesion of hydrogenated amorphous carbon (a-C:H) deposited on steel. Vacuum, 2014, 109, 180-183.	1.6	24
38	On the hydrogen etching mechanism in plasma nitriding of metals. Applied Surface Science, 2006, 253, 1806-1809.	3.1	22
39	Influence of the ion mean free path and the role of oxygen in nitriding processes. Journal of Applied Physics, 2003, 94, 2242-2247.	1.1	21
40	Identification of the mechanism-limiting nitrogen diffusion in metallic alloys by in situ photoemission electron spectroscopy. Journal of Applied Physics, 2003, 94, 5435.	1.1	20
41	Physical and micro-nano-structure properties of chromium nitride coating deposited by RF sputtering using dynamic glancing angle deposition. Surface and Coatings Technology, 2019, 372, 268-277.	2.2	20
42	Electrical conductivity of amorphous silicon doped with rare-earth elements. Physical Review B, 1991, 43, 8946-8950.	1.1	19
43	New pathways in plasma nitriding of metal alloys. Surface and Coatings Technology, 2005, 200, 498-501.	2.2	19
44	Oxygen, hydrogen, and deuterium effects on plasma nitriding of metal alloys. Scripta Materialia, 2006, 54, 1335-1338.	2.6	19
45	A comprehensive study of the influence of the stoichiometry on the physical properties of TiOx films prepared by ion beam deposition. Journal of Applied Physics, 2010, 108, .	1.1	19
46	Photoelectronic properties of amorphous silicon nitride compounds. Solar Energy Materials and Solar Cells, 1984, 10, 151-170.	0.4	17
47	A comprehensive nitriding study by low energy ion beam implantation on stainless steel. Surface and Coatings Technology, 2001, 146-147, 405-409.	2.2	17
48	On the phonon dissipation contribution to nanoscale friction by direct contact. Scientific Reports, 2017, 7, 3242.	1.6	17
49	Doping effects in offâ€stoichiometric glow discharge amorphous silicon nitride. Applied Physics Letters, 1984, 44, 116-118.	1.5	16
50	Photoluminescence and compositional-structural properties of ion-beam sputter deposited Er-doped TiO2â^'xNx films: Their potential as a temperature sensor. Journal of Applied Physics, 2015, 117, .	1.1	16
51	Red and Green Light Emission From Samarium-Doped Amorphous Aluminum Nitride Films. Advanced Materials, 2002, 14, 1154.	11.1	15
52	Nitriding of AISI 4140 steel by a low energy broad ion source. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2006, 24, 2113-2116.	0.9	15
53	A suitable (wide-range + linear) temperature sensor based on Tm3+ ions. Scientific Reports, 2017, 7, 14113.	1.6	15
54	Hydrogen etching mechanism in nitrogen implanted iron alloys studied with in situ photoemission electron spectroscopy. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2005, 23, L9-L12.	0.9	14

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55	Previous heat treatment inducing different plasma nitriding behaviors in martensitic stainless steels. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2006, 24, 1795-1801.	0.9	14
56	Growth of nitrogenated fullerene-like carbon on Ni islands by ion beam sputtering. Carbon, 2007, 45, 2678-2684.	5.4	14
57	Microstructure of tool steel after low temperature ion nitriding. Materials Science and Technology, 2009, 25, 726-732.	0.8	14
58	Electronic and structural properties of amorphous carbonâ€“nitrogen alloys. Journal of Non-Crystalline Solids, 2000, 266-269, 808-814.	1.5	13
59	Influence of the Anatase and Rutile phases on the luminescent properties of rare-earth-doped TiO2 films. Journal of Alloys and Compounds, 2019, 780, 491-497.	2.8	13
60	In situ photoemission electron spectroscopy study of nitrogen ion implanted AISI-H13 steel. Surface and Coatings Technology, 2005, 200, 2566-2570.	2.2	12
61	Enhanced nitrogen diffusion induced by atomic attrition. Applied Physics Letters, 2006, 88, 254109.	1.5	12
62	A comprehensive study of the TiN/Si interface by X-ray photoelectron spectroscopy. Applied Surface Science, 2018, 448, 502-509.	3.1	12
63	Reducible oxide and allotropic transition induced by hydrogen annealing: synthesis routes of TiO2 thin films to tailor optical response. Journal of Materials Research and Technology, 2021, 12, 1623-1637.	2.6	12
64	Oxygen plasma etching of carbon nano-structures containing nitrogen. Journal of Non-Crystalline Solids, 2006, 352, 1314-1318.	1.5	11
65	Carbon nano-structures containing nitrogen and hydrogen prepared by ion beam assisted deposition. Journal of Non-Crystalline Solids, 2006, 352, 1303-1306.	1.5	11
66	Effect of bombarding steel with Xe+ ions on the surface nanostructure and on pulsed plasma nitriding process. Materials Chemistry and Physics, 2015, 149-150, 261-269.	2.0	11
67	Negative conductance and sequential tunneling in amorphous silicon-silicon carbide double barrier devices. Journal of Non-Crystalline Solids, 1989, 110, 175-178.	1.5	10
68	Photoelectron spectroscopic study of amorphous GaAsN films. Applied Physics Letters, 2000, 76, 2211-2213.	1.5	10
69	Effect of the period of the substrate oscillation in the dynamic glancing angle deposition technique: A columnar periodic nanostructure formation. Surface and Coatings Technology, 2020, 383, 125237.	2.2	10
70	X-ray photoelectron spectroscopic study of rare-earth-doped amorphous siliconâ€“nitrogen films. Journal of Applied Physics, 2003, 93, 1948-1953.	1.1	9
71	Surface hardness increasing of iron alloys by nitrogen-deuterium ion implanting. Journal of Applied Physics, 2004, 96, 7742-7743.	1.1	9
72	Influence of hydrogen etching on the adhesion of coated ferrous alloy by hydrogenated amorphous carbon deposited at low temperature. Vacuum, 2017, 144, 243-246.	1.6	9

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73	EXAFS study of noble gases implanted in highly stressed amorphous carbon films. Journal of Non-Crystalline Solids, 2002, 299-302, 805-809.	1.5	8
74	Oriented Carbon Nanostructures Containing Nitrogen Obtained by Ion Beam Assisted Deposition. Journal of Nanoscience and Nanotechnology, 2005, 5, 188-191.	0.9	8
75	Tantalum based coated substrates for controlling the diameter of carbon nanotubes. Carbon, 2009, 47, 3424-3426.	5.4	8
76	Nanostructured tantalum nitride films as buffer-layer for carbon nanotube growth. Thin Solid Films, 2011, 519, 4097-4100.	0.8	8
77	Influence of ion-beam bombardment on the physical properties ofÂ100Cr6 steel. Materials Chemistry and Physics, 2014, 147, 105-112.	2.0	8
78	Influence of substrate pre-treatments by Xe + ion bombardment and plasma nitriding on the behavior of TiN coatings deposited by plasma reactive sputtering on 100Cr6 steel. Materials Chemistry and Physics, 2016, 177, 156-163.	2.0	8
79	Self-organized nickel nanoparticles on nanostructured silicon substrate intermediated by a titanium oxynitride (TiNxOy) interface. AIP Advances, 2018, 8, 015025.	0.6	8
80	The response of boronized 34CrAlMo5-10 (EN41B) steel to nanoindentation, oxidation, and wear. Philosophical Magazine, 2021, 101, 777-818.	0.7	8
81	Bias dependence of doping efficiency in hydrogenated amorphous silicon. Applied Physics Letters, 1985, 47, 960-962.	1.5	7
82	New paramagnetic center in amorphous silicon doped with rare-earth elements. Physical Review B, 1989, 39, 2860-2863.	1.1	7
83	The influence of an external dc substrate bias on the density of states in hydrogenated amorphous silicon. Journal of Applied Physics, 1989, 65, 4869-4873.	1.1	7
84	Electroluminescence from amorphous silicon carbide heterojunctions under reverse biased conditions. Journal of Applied Physics, 1988, 63, 244-246.	1.1	6
85	Photoluminescence studies on silicon carbon alloys. Journal of Non-Crystalline Solids, 1993, 164-166, 1027-1030.	1.5	6
86	Selected Properties of Hydrogenated Amorphous Silicon and Silicon-Carbon Alloys. Solid State Phenomena, 1995, 44-46, 3-24.	0.3	6
87	Tool steel ion beam assisted nitrocarburization. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 465, 194-198.	2.6	6
88	Effect of O2+, H2++â€‰O2+, and N2++â€‰O2+ ion-beam irradiation on the field emission properties of carbon nanotubes. Journal of Applied Physics, 2011, 109, 114317.	1.1	6
89	The effect of noble gas bombarding on nitrogen diffusion in steel. Materials Chemistry and Physics, 2013, 143, 116-123.	2.0	6
90	On the relationship between the Raman scattering features and the Ti-related chemical states of TixOyNz films. Journal of Materials Research and Technology, 2021, 14, 864-870.	2.6	6

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91	Influence of stress on the electron core level energies of noble gases implanted in hard amorphous carbon films. Diamond and Related Materials, 2001, 10, 956-959.	1.8	5
92	Oxygen etching mechanism in carbon-nitrogen (CNx) domelike nanostructures. Journal of Applied Physics, 2008, 103, 124907.	1.1	5
93	Cathodo and photoluminescence studies of non-stoichiometric amorphous silicon carbide and nitride. Journal of Non-Crystalline Solids, 1989, 115, 42-44.	1.5	4
94	Equilibrium density of defects in hydrogenated amorphous silicon carbon alloys. Journal of Applied Physics, 1992, 71, 5969-5975.	1.1	4
95	X-ray photoelectron spectroscopy of amorphous AlN alloys prepared by reactive rf sputtering. Journal of Non-Crystalline Solids, 2002, 299-302, 323-327.	1.5	4
96	In situ photoemission electron spectroscopy of plasma-nitrided metal alloys. Journal of Applied Physics, 2005, 97, 103528.	1.1	4
97	Influence of the structure and composition of titanium nitride substrates on carbon nanotubes grown by chemical vapour deposition. Journal Physics D: Applied Physics, 2013, 46, 155308.	1.3	4
98	Self-organized 2D Ni particles deposited on titanium oxynitride-coated Si sculpted by a low energy ion beam. Journal Physics D: Applied Physics, 2014, 47, 195303.	1.3	4
99	Residual stress in nano-structured stainless steel (AISI 316L) prompted by Xe+ ion bombardment at different impinging angles. Journal of Applied Physics, 2016, 120, 145306.	1.1	3
100	Effect of ion peening and pulsed plasma nitriding on the structural properties of TiN coatings sputtered onto 100Cr6 steel. Materials Chemistry and Physics, 2019, 235, 121723.	2.0	3
101	Visible light emission from reverse biased amorphous silicon carbide P-I-N structures. Journal of Non-Crystalline Solids, 1987, 97-98, 1319-1322.	1.5	2
102	Reply to â€˜â€˜Comment on â€˜Infrared study of the Siâ€H stretching band inaâ€SiC:Hâ€™ â€™â€™ [J. Appl. Phys.69, 7805 (1991)]. Journal of Applied Physics, 1992, 71, 4092-4093.	1.1	2
103	Study of RF Sputtered aï£¿Si: H and aï£¿Ge: H by Photothermal Deflection Spectroscopy. Physica Status Solidi (B): Basic Research, 1995, 192, 535-541.	0.7	2
104	Conductivity dependence on the thickness of hydrogenated, amorphous silicon-carbon films. Thin Solid Films, 1997, 295, 287-294.	0.8	2
105	Structural properties of hydrogenated carbon-nitride films produced by ion-beam-assisted evaporation of the molecular precursor C4N6H4. Journal of Applied Physics, 2001, 89, 7852-7859.	1.1	2
106	Structural properties of amorphous carbon nitride films prepared by ion beam assisted deposition. Journal of Non-Crystalline Solids, 2004, 338-340, 486-489.	1.5	2
107	On the elastic constants of amorphous carbon nitride. Diamond and Related Materials, 2008, 17, 1850-1852.	1.8	2
108	Nickel nanoparticles decoration of ordered mesoporous silica thin films for carbon nanotubes growth. Thin Solid Films, 2010, 519, 214-217.	0.8	2

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109	Nanoindentation unidirectional sliding and lateral force microscopy: Evaluation of experimental techniques to measure friction at the nanoscale. AIP Advances, 2018, 8, 125013.	0.6	2
110	On the influence of an external D.C. substrate bias on boron and phosphorus doping efficiencies in a-Si:H. Journal of Non-Crystalline Solids, 1985, 77-78, 527-530.	1.5	1
111	Electron spin resonance in amorphous silicon doped with Gd. Physical Review B, 1989, 39, 8398-8402.	1.1	1
112	Cathodoluminescence of Diamond-Like and Hydrogenated Amorphous Silicon Carbide Materials. Materials Research Society Symposia Proceedings, 1990, 192, 181.	0.1	1
113	Metastability of Light-Induced Defects in Very Low Density of Gap States Î±- Si1-Î±CÎ±:H Alloys. Materials Research Society Symposia Proceedings, 1992, 258, 601.	0.1	1
114	Properties of amorphous silicon-carbon alloys with very low densities of states. Journal of Physics Condensed Matter, 1993, 5, A329-A330.	0.7	1
115	Comment on â€œIon-assisted pulsed laser deposition of aluminum nitride thin filmsâ€•[J. Appl. Phys.87, 1540 (2000)]. Journal of Applied Physics, 2002, 92, 6349-6350.	1.1	1
116	Different desorption rates prompting an indirect isotopic effect on nanoscale friction. Applied Surface Science Advances, 2022, 7, 100201.	2.9	1
117	Gradual and selective achievement of Rutile-TiO2 by thermal annealing amorphous TixOyNz films. Journal of Non-Crystalline Solids, 2022, 579, 121375.	1.5	1
118	Cathodic and anodic glow discharge silicon-carbon alloys (a-Si1-xCx:H) from x = 0.5 to 1: A comparative study by photoemission (UPS) and photoluminescence (PL). Journal of Non-Crystalline Solids, 1996, 198-200, 628-631.	1.5	0