

# Pedro Alpuim

## List of Publications by Year in descending order

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105  
papers

2,294  
citations

218381

26  
h-index

253896

43  
g-index

110  
all docs

110  
docs citations

110  
times ranked

3152  
citing authors

#	ARTICLE	IF	CITATIONS
1	Optimization of thermoelectric properties on Bi <sub>2</sub> Te <sub>3</sub> thin films deposited by thermal co-evaporation. Thin Solid Films, 2010, 518, 2816-2821.	0.8	200
2	Attomolar Label-Free Detection of DNA Hybridization with Electrolyte-Gated Graphene Field-Effect Transistors. ACS Sensors, 2019, 4, 286-293.	4.0	146
3	Amorphous and microcrystalline silicon films grown at low temperatures by radio-frequency and hot-wire chemical vapor deposition. Journal of Applied Physics, 1999, 86, 3812-3821.	1.1	131
4	Thermal co-evaporation of Sb <sub>2</sub> Te <sub>3</sub> thin-films optimized for thermoelectric applications. Thin Solid Films, 2011, 519, 4152-4157.	0.8	91
5	Atomic-layer-deposited ultrafine MoS <sub>2</sub> nanocrystals on cobalt foam for efficient and stable electrochemical oxygen evolution. Nanoscale, 2017, 9, 2711-2717.	2.8	88
6	Amorphous oxygen-rich molybdenum oxysulfide Decorated p-type silicon microwire Arrays for efficient photoelectrochemical water reduction. Nano Energy, 2015, 16, 130-142.	8.2	85
7	Fabrication of flexible thermoelectric microcoolers using planar thin-film technologies. Journal of Micromechanics and Microengineering, 2007, 17, S168-S173.	1.5	77
8	Influence of the chemical and electronic structure on the electrical behavior of zirconium oxynitride films. Journal of Applied Physics, 2008, 103, .	1.1	66
9	Optimization of Bi <sub>2</sub> Te <sub>3</sub> and Sb <sub>2</sub> Te <sub>3</sub> thin films deposited by co-evaporation on polyimide for thermoelectric applications. Vacuum, 2008, 82, 1499-1502.	1.6	62
10	Silicon nanowire arrays coupled with cobalt phosphide spheres as low-cost photocathodes for efficient solar hydrogen evolution. Chemical Communications, 2015, 51, 10742-10745.	2.2	54
11	Graphene field-effect transistor array with integrated electrolytic gates scaled to 200 nm. Journal of Physics Condensed Matter, 2016, 28, 085302.	0.7	40
12	Thermoelectric micro converters for cooling and energy-scavenging systems. Journal of Micromechanics and Microengineering, 2008, 18, 064008.	1.5	37
13	Thermoelectric Properties of Bi <sub>2</sub> Te <sub>3</sub> /Sb <sub>2</sub> Te <sub>3</sub> Thin Films. Materials Science Forum, 2006, 514-516, 156-160.	0.3	36
14	Flexible organic-inorganic hybrid layer encapsulation for organic opto-electronic devices. Progress in Organic Coatings, 2015, 80, 27-32.	1.9	36
15	Thermoelectric microstructures of Bi <sub>2</sub> Te <sub>3</sub> /Sb <sub>2</sub> Te <sub>3</sub> for a self-calibrated micro-pyrometer. Sensors and Actuators A: Physical, 2006, 130-131, 346-351.	2.0	35
16	Doping of amorphous and microcrystalline silicon films deposited at low substrate temperatures by hot-wire chemical vapor deposition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2001, 19, 2328-2334.	0.9	33
17	All-Inkjet-Printed Bottom-Gate Thin-Film Transistors Using UV Curable Dielectric for Well-Defined Source-Drain Electrodes. Journal of Electronic Materials, 2014, 43, 2631-2636.	1.0	33
18	Environmentally Friendly Graphene Inks for Touch Screen Sensors. Advanced Functional Materials, 2021, 31, 2103287.	7.8	33

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19	Degradation of all-inkjet-printed organic thin-film transistors with TIPS-pentacene under processes applied in textile manufacturing. <i>Organic Electronics</i> , 2015, 22, 12-19.	1.4	31
20	Highly-ordered silicon nanowire arrays for photoelectrochemical hydrogen evolution: an investigation on the effect of wire diameter, length and inter-wire spacing. <i>Sustainable Energy and Fuels</i> , 2018, 2, 978-982.	2.5	31
21	Electronic and structural properties of doped amorphous and nanocrystalline silicon deposited at low substrate temperatures by radio-frequency plasma-enhanced chemical vapor deposition. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2003, 21, 1048-1054.	0.9	30
22	Piezoresistive silicon thin film sensor array for biomedical applications. <i>Thin Solid Films</i> , 2011, 519, 4574-4577.	0.8	30
23	Functionalization of single-layer graphene for immunoassays. <i>Applied Surface Science</i> , 2019, 480, 709-716.	3.1	29
24	Thermal stability of zirconia/alumina thin coatings produced by magnetron sputtering. <i>Surface and Coatings Technology</i> , 1997, 94-95, 144-148.	2.2	28
25	The effect of argon plasma treatment on the permeation barrier properties of silicon nitride layers. <i>Surface and Coatings Technology</i> , 2013, 235, 361-366.	2.2	28
26	Conformal and continuous deposition of bifunctional cobalt phosphide layers on p-silicon nanowire arrays for improved solar hydrogen evolution. <i>Nano Research</i> , 2018, 11, 4823-4835.	5.8	28
27	Hydrogenated amorphous and nanocrystalline silicon solar cells deposited by HWCVD and RF-PECVD on plastic substrates at 150°C. <i>Journal of Non-Crystalline Solids</i> , 2008, 354, 2376-2380.	1.5	27
28	Piezoresistive sensors on plastic substrates using doped microcrystalline silicon. <i>IEEE Sensors Journal</i> , 2002, 2, 336-341.	2.4	25
29	Phosphorous and boron doping of nc-Si:H thin films deposited on plastic substrates at 150°C by Hot-Wire Chemical Vapor Deposition. <i>Thin Solid Films</i> , 2008, 516, 576-579.	0.8	25
30	Fabrication of a strain sensor for bone implant failure detection based on piezoresistive doped nanocrystalline silicon. <i>Journal of Non-Crystalline Solids</i> , 2008, 354, 2585-2589.	1.5	25
31	Deposition of silicon nitride thin films by hot-wire CVD at 100°C and 250°C. <i>Thin Solid Films</i> , 2009, 517, 3503-3506.	0.8	25
32	Negative thermoelectric power of melt mixed vapor grown carbon nanofiber polypropylene composites. <i>Carbon</i> , 2019, 150, 408-416.	5.4	25
33	On-chip array of thermoelectric Peltier microcoolers. <i>Sensors and Actuators A: Physical</i> , 2008, 145-146, 75-80.	2.0	24
34	Amorphous and microcrystalline silicon deposited by hot-wire chemical vapor deposition at low substrate temperatures: application to devices and thin-film microelectromechanical systems. <i>Thin Solid Films</i> , 2001, 395, 105-111.	0.8	22
35	Sensitization of the electron lifetime in a-Si:H: The story of oxygen. <i>Physical Review B</i> , 2001, 63, .	1.1	22
36	Digitally-controlled array of solid-state microcoolers for use in surgery. <i>Microsystem Technologies</i> , 2011, 17, 1283-1291.	1.2	22

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37	Interactions Between 2D Materials and Living Matter: A Review on Graphene and Hexagonal Boron Nitride Coatings. <i>Frontiers in Bioengineering and Biotechnology</i> , 2021, 9, 612669.	2.0	21
38	Optimisation of surface treatments of TiO <sub>2</sub> :Nb transparent conductive coatings by a post-hot-wire annealing in a reducing H <sub>2</sub> atmosphere. <i>Thin Solid Films</i> , 2014, 550, 404-412.	0.8	20
39	Effect of hot-filament annealing in a hydrogen atmosphere on the electrical and structural properties of Nb-doped TiO <sub>2</sub> sputtered thin films. <i>Thin Solid Films</i> , 2012, 520, 2514-2519.	0.8	19
40	Wafer scale fabrication of graphene microelectrode arrays for the detection of DNA hybridization. <i>Microelectronic Engineering</i> , 2018, 189, 85-90.	1.1	19
41	Low substrate temperature deposition of amorphous and microcrystalline silicon films on plastic substrates by hot-wire chemical vapor deposition. <i>Journal of Non-Crystalline Solids</i> , 2000, 266-269, 110-114.	1.5	18
42	Characterization of magnetron sputtered sub-stoichiometric CrAlSiN <sub>x</sub> and CrAlSiO <sub>y</sub> N <sub>x</sub> coatings. <i>Surface and Coatings Technology</i> , 2017, 328, 134-141.	2.2	18
43	Influence of the Electrolyte Salt Concentration on DNA Detection with Graphene Transistors. <i>Biosensors</i> , 2021, 11, 24.	2.3	18
44	Reductive nanometric patterning of graphene oxide paper using electron beam lithography. <i>Carbon</i> , 2018, 129, 63-75.	5.4	17
45	Study of the mechanics of the delamination of ceramic functional coatings. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1999, 271, 62-69.	2.6	16
46	Dielectric function of hydrogenated amorphous silicon near the optical absorption edge. <i>Journal of Applied Physics</i> , 2009, 106, 073110.	1.1	16
47	Fabrication of Thermoelectric Devices by Applying Microsystems Technology. <i>Journal of Electronic Materials</i> , 2010, 39, 1516-1521.	1.0	16
48	Influence of hydrogen plasma thermal treatment on the properties of ZnO:Al thin films prepared by dc magnetron sputtering. <i>Vacuum</i> , 2014, 107, 145-154.	1.6	16
49	Probing of Thermal Transport in 50 nm Thick PbTe Nanocrystal Films by Time-Domain Thermoreflectance. <i>Journal of Physical Chemistry C</i> , 2018, 122, 27127-27134.	1.5	15
50	Clean-Room Lithographical Processes for the Fabrication of Graphene Biosensors. <i>Materials</i> , 2020, 13, 5728.	1.3	15
51	Strength measurements of thin brittle ZrO <sub>2</sub> coatings produced by magnetron sputtering on steel substrates. <i>Vacuum</i> , 1997, 48, 417-422.	1.6	14
52	Hot-wire thin-film transistors on PET at 100 °C. <i>Thin Solid Films</i> , 2003, 430, 240-244.	0.8	14
53	Piezoresistive properties of nanocrystalline silicon thin films deposited on plastic substrates by hot-wire chemical vapor deposition. <i>Thin Solid Films</i> , 2007, 515, 7658-7661.	0.8	14
54	Study of the piezoresistivity of doped nanocrystalline silicon thin films. <i>Journal of Applied Physics</i> , 2011, 109, .	1.1	14

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55	Over 6% Efficient Cu(In,Ga)Se <sub>2</sub> Solar Cell Screen-Printed from Oxides on Fluorine-Doped Tin Oxide. ACS Applied Energy Materials, 2020, 3, 3120-3126.	2.5	13
56	Programmable graphene-based microfluidic sensor for DNA detection. Sensors and Actuators B: Chemical, 2022, 367, 132044.	4.0	13
57	Permeation barrier performance of Hot Wire-CVD grown silicon-nitride films treated by argon plasma. Thin Solid Films, 2015, 575, 72-75.	0.8	12
58	Cohesive strength of nanocrystalline ZnO:Ga thin films deposited at room temperature. Nanoscale Research Letters, 2011, 6, 309.	3.1	11
59	Flexible n-i-p thin film silicon solar cells on polyimide foils with textured ZnO:Ga back reflector. Thin Solid Films, 2014, 571, 9-12.	0.8	11
60	Doping of amorphous and microcrystalline silicon films by hot-wire CVD and RFPECVD at low substrate temperatures on plastic substrates. Materials Research Society Symposia Proceedings, 2000, 609, 2261.	0.1	10
61	Study on excimer laser irradiation for controlled dehydrogenation and crystallization of boron doped hydrogenated amorphous/nanocrystalline silicon multilayers. Thin Solid Films, 2013, 536, 147-151.	0.8	10
62	Piezoresistive sensors for force mapping of hip-prostheses. Sensors and Actuators A: Physical, 2013, 195, 133-138.	2.0	10
63	Efficient ReSe <sub>2</sub> Photodetectors with CVD Single-Crystal Graphene Contacts. Nanomaterials, 2021, 11, 1650.	1.9	10
64	Effect of argon ion energy on the performance of silicon nitride multilayer permeation barriers grown by hot-wire CVD on polymers. Thin Solid Films, 2015, 595, 258-265.	0.8	9
65	Wet-Chemical Noncovalent Functionalization of CVD Graphene: Molecular Doping and Its Effect on Electrolyte-Gated Graphene Field-Effect Transistor Characteristics. Journal of Physical Chemistry C, 2022, 126, 4522-4533.	1.5	9
66	Electronic transport in low-temperature silicon nitride. Journal of Non-Crystalline Solids, 2002, 299-302, 434-438.	1.5	8
67	Influence of low energy argon plasma treatment on the moisture barrier performance of hot wire-CVD grown Si <sub>x</sub> N <sub>y</sub> multilayers. Japanese Journal of Applied Physics, 2014, 53, 05FM05.	0.8	8
68	Non-invasive molecular assessment of human embryo development and implantation potential. Biosensors and Bioelectronics, 2020, 157, 112144.	5.3	8
69	Ultra-sensitive shape sensor test structures based on piezoresistive doped nanocrystalline silicon. Vacuum, 2009, 83, 1279-1282.	1.6	7
70	Role of counter-ion and helper lipid content in the design and properties of nanocarrier systems: a biophysical study in 2D and 3D lipid assemblies. RSC Advances, 2016, 6, 47730-47740.	1.7	7
71	Flexible Thin-film Planar Peltier Microcooler. , 2006, , .		6
72	Amorphous silicon thin-film solar cells deposited on flexible substrates using different zinc oxide layers. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, 1061-1064.	0.8	6

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73	Thin-Film Transistors on PET at 100°C. Materials Research Society Symposia Proceedings, 2002, 715, 311.	0.1	6
74	Lightweight portable sensors for health care. , 2010, , .		5
75	Laser patterning of amorphous silicon thin films deposited on flexible and rigid substrates. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 1717-1727.	0.8	5
76	Room-temperature emitters in wafer-scale few-layer hBN by atmospheric pressure CVD. FlatChem, 2022, 33, 100366.	2.8	5
77	Graphene setting the stage: tracking DNA hybridization with nanoscale resolution. 2D Materials, 2019, 6, 045056.	2.0	4
78	Field-effect transistors made of graphene grown on recycled copper foils. Materials Chemistry and Physics, 2020, 256, 123665.	2.0	4
79	Micromachining of an air-bridge structure using thin-films on glass substrates. Sensors and Actuators A: Physical, 1999, 74, 5-8.	2.0	3
80	Piezoresistive Sensors on Plastic Substrates Using Doped Microcrystalline Silicon. Materials Research Society Symposia Proceedings, 2001, 664, 1861.	0.1	3
81	Seedless Cu Electroplating on Co-W Thin Films in Low pH Electrolyte: Early Stages of Formation. Nanomaterials, 2021, 11, 1914.	1.9	3
82	Role of sublimation kinetics of ammonia borane in chemical vapor deposition of uniform, large-area hexagonal boron nitride. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2021, 39, .	0.9	3
83	Experimental bending tests and numerical approach to determine the fracture mechanical properties of thin ceramic coatings deposited by magnetron sputtering. Surface and Coatings Technology, 2006, 200, 2744-2752.	2.2	2
84	Photoluminescence of nc-Si:Er thin films obtained by physical and chemical vapour deposition techniques: The effects of microstructure and chemical composition. Thin Solid Films, 2009, 517, 5808-5812.	0.8	2
85	Erbium-doped nanocrystalline silicon thin films produced by RF sputtering - annealing effect on the Er emission. Physica Status Solidi C: Current Topics in Solid State Physics, 2010, 7, NA-NA.	0.8	2
86	High-rate deposition of nano-crystalline silicon thin films on plastics. Physica Status Solidi C: Current Topics in Solid State Physics, 2011, 8, 846-849.	0.8	2
87	Electrochemically Gated Graphene Field-Effect Transistor for Extracellular Cell Signal Recording. IFIP Advances in Information and Communication Technology, 2016, , 558-564.	0.5	2
88	Spectral-temporal luminescence properties of Colloidal CdSe/ZnS Quantum Dots in relevant polymer matrices for integration in low turn-on voltage AC-driven LEDs. Optics Express, 2022, 30, 10563.	1.7	2
89	Strain-modulated optical response in 2D MoSe <sub>2</sub> made by Na-assisted CVD on glass. Applied Physics Letters, 2022, 120, .	1.5	2
90	Low Temperature Thin-Film Microelectromechanical Devices on Plastic Substrates. Materials Research Society Symposia Proceedings, 2000, 609, 2121.	0.1	1

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91	Optimization of Deposition Parameters for Thin Silicon Films on Flexible Substrates in a Hot-Wire Chemical Vapor Deposition Reactor. <i>Materials Science Forum</i> , 2006, 514-516, 475-482.	0.3	1
92	Nonlinear piezoresistance of silicon. , 2010, , .		1
93	FEM numerical analysis of excimer laser induced modification in alternating multi-layers of amorphous and nano-crystalline silicon films. <i>Applied Surface Science</i> , 2012, 258, 9342-9346.	3.1	1
94	Graphene Near-Field Interactions for the Observation of DNA Hybridization in Aqueous Environment with Nanoscale Resolution. , 2019, , .		1
95	Chemical Vapour Deposition of Hexagonal Boron Nitride for Two Dimensional Electronics. <i>U Porto Journal of Engineering</i> , 2017, 3, 27-34.	0.2	1
96	Graphene LC oscillator for biosensing applications. , 2021, , .		1
97	Structural and optoelectronic properties of amorphous and microcrystalline silicon deposited at low substrate temperatures by RF and HW CVD. <i>Materials Research Society Symposia Proceedings</i> , 1999, 557, 91.	0.1	0
98	Light Intensity Exponents as Sensitive Tools for the Detection of Impurities in a-Si:H. <i>Materials Research Society Symposia Proceedings</i> , 2000, 609, 2751.	0.1	0
99	Thermoelectric microstructures of $B\text{/sub }2\text{/TE/sub }3\text{/SB/sub }2\text{/TE/sub }3\text{/}$ for a self-calibrated micropyrometer. , 0, , .		0
100	On-Chip Array of Thermoelectric Peltier Microcoolers. , 2007, , .		0
101	Visible and infrared photoluminescence from erbium-doped silicon nanocrystals produced by rf sputtering. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2007, 204, 1769-1774.	0.8	0
102	Structural and photoluminescence studies of erbium-implanted nanocrystalline silicon thin films. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2009, 206, 2161-2165.	0.8	0
103	Piezoresistor Sensor Fabrication by Direct Laser Writing on Hydrogenated Amorphous Silicon. <i>Materials Research Society Symposia Proceedings</i> , 2014, 1594, 1.	0.1	0
104	Raman Spectroscopy for Tumor Diagnosis in Mammary Tissue. , 2020, , .		0
105	Room temperature two terminal tunnel magnetoresistance in a lateral graphene transistor. <i>Nanoscale</i> , 2021, 13, 20028-20033.	2.8	0