John M Walls

List of Publications by Citations

132 papers	2,304 citations	26 h-index	41 g-index
156 ext. papers	2,732 ext. citations	4.1 avg, IF	4.87 L-index

#	Paper	IF	Citations
132	An XPS study of ion-induced compositional changes with group II and group IV compounds. *Applications of Surface Science*, **1983**, 15, 224-237		168
131	Polycrystalline CdSeTe/CdTe Absorber Cells With 28 mA/cm2 Short-Circuit Current. *IEEE Journal of Photovoltaics*, **2018**, 8, 310-314	3.7	100
130	The development of a general three-dimensional surface under ion bombardment. *Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties*, **1980**, 42, 235-248		90
129	Polycrystalline CdTe photovoltaics with efficiency over 18% through improved absorber passivation and current collection. *Solar Energy Materials and Solar Cells*, **2018**, 176, 9-18	6.4	86
128	Understanding the role of selenium in defect passivation for highly efficient selenium-alloyed cadmium telluride solar cells. *Nature Energy*, **2019**, 4, 504-511	62.3	80
127	CompositionDepth profiling and interface analysis of surface coatings using ball cratering and the scanning auger microprobe. *Surface and Interface Analysis*, **1979**, 1, 204-210	1.5	71
126	Scalable Deposition of High-Efficiency Perovskite Solar Cells by Spray-Coating. *ACS Applied Energy Materials*, **2018**, 1, 1853-1857	6.1	59
125	The structural properties of CdS deposited by chemical bath deposition and pulsed direct current magnetron sputtering. *Thin Solid Films*, **2015**, 582, 323-327	2.2	56
124	The Effect of Cadmium Chloride Treatment on Close-Spaced Sublimated Cadmium Telluride Thin-Film Solar Cells. *IEEE Journal of Photovoltaics*, **2013**, 3, 1361-1366	3.7	52
123	The roles of ZnTe buffer layers on CdTe solar cell performance. *Solar Energy Materials and Solar Cells*, **2016**, 147, 203-210	6.4	51
122	Electrodeposition of CdTe thin films using nitrate precursor for applications in solar cells. *Journal of Materials Science: Materials in Electronics*, **2015**, 26, 3119-3128	2.1	48
121	Studies of the composition, ion-induced reduction and preferential sputtering of anodic oxide films on Hg0.8Cd0.2Te by XPS. *Surface Science*, **1983**, 135, 225-242	1.8	48
120	Surface morphology of Si(100), GaAs(100) and InP(100) following O2+ and Cs+ ion bombardment. *Vacuum*, **1984**, 34, 145-151	3.7	47
119	The erosion of amorphous and crystalline surfaces by ion bombardment. *Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties*, **1981**, 44, 879-893		47
118	Improved sputter-depth profiles using two ion guns. *Applications of Surface Science*, **1980**, 5, 103-106		46
117	Multilayer Broadband Antireflective Coatings for More Efficient Thin Film CdTe Solar Cells. *IEEE Journal of Photovoltaics*, **2014**, 4, 452-456	3.7	44
116	Ion trajectories in the field-ion microscope. *Journal Physics D: Applied Physics*, **1978**, 11, 409-419	3	44

115	Effect of CdCl2 passivation treatment on microstructure and performance of CdSeTe/CdTe thin-film photovoltaic devices. *Solar Energy Materials and Solar Cells*, **2018**, 186, 259-265	6.4	41
114	An XPS study of ion-induced dissociation on metal carbonate surfaces. *Vacuum*, **1981**, 31, 513-517	3.7	40
113	Identification of critical stacking faults in thin-film CdTe solar cells. *Applied Physics Letters*, **2014**, 105, 062104	3.4	36
112	Thin film thickness measurements using Scanning White Light Interferometry. *Thin Solid Films*, **2014** , 550, 10-16	2.2	35
111	Development of ZnTe as a back contact material for thin film cadmium telluride solar cells. *Vacuum*, **2017**, 139, 159-163	3.7	32
110	The development of surface topography during depth profiling in auger electron spectroscopy. *Surface Science*, **1979**, 80, 557-565	1.8	29
109	The activation of thin film CdTe solar cells using alternative chlorine containing compounds. *Thin Solid Films*, **2015**, 582, 115-119	2.2	26
108	Solution processing of CuIn(S,Se)2 and Cu(In,Ga)(S,Se)2 thin film solar cells using metal chalcogenide precursors. *Thin Solid Films*, **2017**, 633, 76-80	2.2	26
107	Hydrazine-Free Solution-Deposited CuIn(S,Se)2 Solar Cells by Spray Deposition of Metal Chalcogenides. *ACS Applied Materials & Interfaces*, **2016**, 8, 11893-7	9.5	26
106	High rate deposition of thin film cadmium sulphide by pulsed direct current magnetron sputtering. *Thin Solid Films*, **2015**, 574, 43-51	2.2	25
105	Analysis and optimisation of the glass/TCO/MZO stack for thin film CdTe solar cells. *Solar Energy Materials and Solar Cells*, **2018**, 187, 15-22	6.4	24
104	The preparation of field electron/field-ion emitters by ion etching. *Vacuum*, **1974**, 24, 475-479	3.7	24
103	Solution-processed CuIn(S,Se)2 absorber layers for application in thin film solar cells. *Thin Solid Films*, **2015**, 582, 31-34	2.2	22
102	Deterministic models of ion erosion, reflection and redeposition. *Vacuum*, **1984**, 34, 175-180	3.7	22
101	The projection geometry of the field-ion image. *Surface Science*, **1978**, 75, 129-140	1.8	22
100	Evolution of oxygenated cadmium sulfide (CdS:O) during high-temperature CdTe solar cell fabrication. *Solar Energy Materials and Solar Cells*, **2016**, 157, 276-285	6.4	21
99	Magnification in the field-ion microscope. *Journal Physics D: Applied Physics*, **1979**, 12, 657-667	3	21
98	Modeling evaporation, ion-beam assist, and magnetron sputtering of thin metal films over realistic time scales. *Physical Review B*, **2012**, 86,	3.3	20

97	Field-ion microscope observations of helium ion bombardment damage in tungsten. *Surface Science* , **1976**, 61, 419-434	1.8	20
96	Comparison of wear behaviour of single- and multilayer coated carbide cutting tools. *Metals Technology*, **1980**, 7, 293-299		19
95	The performance and durability of single-layer sol-gel anti-reflection coatings applied to solar module cover glass. *Surface and Coatings Technology*, **2019**, 358, 76-83	4.4	18
94	Modelling the growth of ZnO thin films by PVD methods and the effects of post-annealing. *Journal of Physics Condensed Matter*, **2013**, 25, 135002	1.8	17
93	The effect of temperature on resistive ZnO layers and the performance of thin film CdTe solar cells. *Thin Solid Films*, **2017**, 633, 92-96	2.2	17
92	The application of taper-sectioning techniques for depth profiling using Auger electron spectroscopy. *Applications of Surface Science*, **1983**, 15, 93-107		17
91	The development of surface shape during sputter-depth profiling in Auger electron spectroscopy. *Surface and Interface Analysis*, **1980**, 2, 115-119	1.5	17
90	Pinhole free thin film CdS deposited by chemical bath using a substrate reactive plasma treatment. *Journal of Renewable and Sustainable Energy*, **2014**, 6, 011202	2.5	16
89	The structure and topographical modification of surfaces during depth profiling. *Thin Solid Films*, **1979**, 57, 201-207	2.2	16
88	The development of surface topography using two ion beams. *Journal of Materials Science*, **1982**, 17, 1689-1699	4.3	16
87	Atmospheric-pressure plasma surface activation for solution processed photovoltaic devices. *Solar Energy*, **2017**, 146, 287-297	6.8	15
86	Measurement of thin film interfacial surface roughness by coherence scanning interferometry. *Journal of Applied Physics*, **2017**, 121, 105303	2.5	15
85	Surface morphology during ion etching The influence of redeposition. *Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties*, **1983**, 47, 453-481		15
84	Deposition and application of a MoN back contact diffusion barrier yielding a 12.0% efficiency solution-processed CIGS solar cell using an amine–thiol solvent system. *Journal of Materials Chemistry A*, **2019**, 7, 7042-7052	13	14
83	High quality aluminium doped zinc oxide target synthesis from nanoparticulate powder and characterisation of sputtered thin films. *Thin Solid Films*, **2014**, 566, 108-114	2.2	14
82	A comparison of vacuum-evaporated and ion-plated thin films using Auger electron spectroscopy. *Thin Solid Films*, **1978**, 54, 303-308	2.2	14
81	Structural and chemical evolution of the CdS:O window layer during individual CdTe solar cell processing steps. *Solar Energy*, **2018**, 159, 940-946	6.8	14
80	Observations of sputtering damage using the field-ion microscope. *Vacuum*, **1974**, 24, 471-474	3.7	13

79	Summary Abstract: Surface topography of electronic materials following oxygen and cesium ion bombardment. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1983**, 1, 621-622	2.9	12
78	A combined fim, aes and LEED study of the structure and composition of ion bombarded tungsten surfaces. *Surface Science*, **1975**, 50, 360-378	1.8	12
77	Degradation of Mg-doped zinc oxide buffer layers in thin film CdTe solar cells. *Thin Solid Films*, **2019**, 691, 137556	2.2	11
76	Quantitative secondary neutral mass spectroscopy of thin films. *Thin Solid Films*, **1991**, 200, 293-300	2.2	11
75	The shape of field-ion emitters. *Journal Physics D: Applied Physics*, **1979**, 12, 1589-1595	3	11
74	Surface morphology during ion etching The influence of redeposition. *The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties*, **1983**, 47, 453-481		11
73	CdCl2 passivation of polycrystalline CdMgTe and CdZnTe absorbers for tandem photovoltaic cells. *Journal of Applied Physics*, **2018**, 123, 203101	2.5	11
72	Testing the Durability of Anti-Soiling Coatings for Solar Cover Glass by Outdoor Exposure in Denmark. *Energies*, **2020**, 13, 299	3.1	10
71	Sample rocking and rotation in ion beam etching. *Journal of Materials Science*, **1986**, 21, 123-130	4.3	10
70	The application of surface analytical techniques to thin films and surface coatings. *Thin Solid Films*, **1981**, 80, 213-220	2.2	10
69	Enhancement of photovoltaic efficiency in CdSe Te (where 0 ? x ? 1): insights from density functional theory. *Journal of Physics Condensed Matter*, **2020**, 32, 125702	1.8	10
68	The effect of a post-activation annealing treatment on thin film cdte device performance **2015**,		9
67	High Mobility Titanium-doped Indium Oxide for Use in Tandem Solar Cells Deposited via Pulsed DC Magnetron Sputtering. *Energy Procedia*, **2014**, 60, 148-155	2.3	9
66	Ring counting in field-ion micrographs. *Journal of Microscopy*, **1978**, 113, 291-299	1.9	9
65	Effect of the cadmium chloride treatment on RF sputtered Cd0.6Zn0.4Te films for application in multijunction solar cells. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2016**, 34, 051202	2.9	9
64	Cadmium Chloride Assisted Re-Crystallisation of CdTe: The Effect on the CdS Window Layer. *Materials Research Society Symposia Proceedings*, **2015**, 1738, 7		8
63	High-Efficiency Nanoparticle Solution-Processed Cu(In,Ga)(S,Se)2 Solar Cells. *IEEE Journal of Photovoltaics*, **2018**, 8, 288-292	3.7	8
62	3D Distributions of Chlorine and Sulphur Impurities in a Thin-Film Cadmium Telluride Solar Cell. *MRS Advances*, **2018**, 3, 3287-3292	0.7	8

61	Optical optimization of high resistance transparent layers in thin film cadmium telluride solar cells. *Vacuum*, **2017**, 139, 196-201	3.7	7
60	Cupric Oxide-based p-type Transparent Conductors. *Energy Procedia*, **2014**, 60, 129-134	2.3	7
59	Inkjet and laser hybrid processing for series interconnection of thin film photovoltaics. *Materials Research Innovations*, **2014**, 18, 509-514	1.9	7
58	A moir□nterpretation of field-ion microscopy. *Philosophical Magazine and Journal*, **1973**, 27, 915-927		7
57	Refractive index determination by coherence scanning interferometry. *Applied Optics*, **2016**, 55, 4253-60	0.2	7
56	Artificial linear brush abrasion of coatings for photovoltaic module first-surfaces. *Solar Energy Materials and Solar Cells*, **2021**, 219, 110757	6.4	7
55	Room temperature surface passivation of silicon for screen printed c-Si solar cells by HiTUS reactive sputter deposition. *Applied Surface Science*, **2014**, 301, 51-55	6.7	6
54	An XPS study of the angular dependence of preferential sputtering and ion-induced reduction in lead oxide-containing glasses. *Vacuum*, **1984**, 34, 659-662	3.7	6
53	Degradation of Hydrophobic, Anti-Soiling Coatings for Solar Module Cover Glass. *Energies*, **2020**, 13, 3811	3.1	6
52	Optical Optimization of Perovskite Solar Cell Structure for Maximum Current Collection. *Energy Procedia*, **2016**, 102, 11-18	2.3	6
51	Sodium doping of solution-processed amine-thiol based CIGS solar cells by thermal evaporation of NaCl. *Progress in Photovoltaics: Research and Applications*, **2021**, 29, 546-557	6.8	6
50	The development of thin film metrology by coherence scanning interferometry **2016**,		5
49	Magnesium-doped Zinc Oxide as a High Resistance Transparent Layer for thin film CdS/CdTe solar cells **2017**,		5
48	A tunable amorphous p-type ternary oxide system: The highly mismatched alloy of copper tin oxide. *Journal of Applied Physics*, **2015**, 118, 105702	2.5	5
47	The effect of cadmium chloride treatment on close spaced sublimated cadmium telluride thin film solar cells **2012**,		5
46	Closed field magnetron sputtering: new generation sputtering process for optical coatings **2008**,		5
45	Sputter-depth profiling in AES: Dependence of depth resolution on electron and ion beam geometry. *Surface and Interface Analysis*, **1983**, 5, 71-76	1.5	5
44	The depth resolution of composition-depth profiles obtained by ball-cratering and Auger electron spectroscopy. *Vacuum*, **1981**, 31, 625-629	3.7	5

43	A specimen temperature controller for field emission and field-ion microscopy. *Journal of Physics E: Scientific Instruments*, **1976**, 9, 96-97		5
42	High rate deposition of thin film CdTe solar cells by pulsed dc magnetron sputtering. *MRS Advances*, **2016**, 1, 917-922	0.7	5
41	Water based spray pyrolysis of metal-oxide solutions for Cu2ZnSn(S,Se)4 solar cells using low toxicity amine/thiol complexants. *Thin Solid Films*, **2019**, 669, 588-594	2.2	5
40	An innovative approach for fabrication of Cu 2 ZnSnSe 4 absorber layers using solutions of elemental metal powders. *Thin Solid Films*, **2017**, 633, 151-155	2.2	4
39	Structural and chemical characterization of the back contact region in high efficiency CdTe solar cells **2015**,		4
38	Deposition of cupric oxide thin films by spin coating. *Materials Research Innovations*, **2014**, 18, 95-98	1.9	4
37	Cadmium Chloride Assisted Re-Crystallization of CdTe: The Effect of Varying the Annealing Time. *Materials Research Society Symposia Proceedings*, **2014**, 1638, 1		4
36	Characterization of Thin Film CdTe photovoltaic materials deposited by high plasma density magnetron sputtering. *Materials Research Society Symposia Proceedings*, **2011**, 1323, 145		4
35	Modeling evaporation, ion-beam assist, and magnetron sputtering of TiO2 thin films over realistic timescales. *Journal of Materials Research*, **2012**, 27, 799-805	2.5	4
34	The optimum ion species for sputter-cleaning or ion profiling tungsten surfaces. *Surface Technology* , **1976**, 4, 255-268		4
33	The depth of sputtering damage in tungsten by field-ion microscopy. *Radiation Effects*, **1979**, 45, 111-118		4
32	Zone plates and field ion microscopy. *Applied Physics Letters*, **1973**, 23, 161-163	3.4	4
31	Understanding the Copassivation Effect of Cl and Se for CdTe Grain Boundaries. *ACS Applied Materials & Interfaces*, **2021**, 13, 35086-35096	9.5	4
30	Effect of varying deposition and substrate temperature on sublimated CdTe thin-film photovoltaics **2016**,		4
29	Chlorine activated stacking fault removal mechanism in thin film CdTe solar cells: the missing piece. *Nature Communications*, **2021**, 12, 4938	17.4	4
28	High temperature stability of broadband Anti-Reflection coatings on soda lime glass for solar modules **2015**,		3
27	**2013**,		3
26	Modeling the Sputter Deposition of Thin Film Photovoltaics using Long Time Scale Dynamics Techniques. *Materials Research Society Symposia Proceedings*, **2011**, 1327, 80401		3

25	Optimisation of the CZTSe thin film composition obtained by a sequential electrodeposition process. *Surface Engineering*, **2019**, 35, 854-860	2.6	2
24	Cadmium chloride assisted re-crystallization of CdTe: The effect of the annealing temperature **2013** ,		2
23	Comparison of DC and RF sputtered aluminium-doped zinc oxide for photovoltaic applications **2015** ,		2
22	Internal strain analysis of CdTe thin films deposited by pulsed DC magnetron sputtering **2015**,		2
21	Aluminium-doped zinc oxide deposited by ultrasonic spray pyrolysis for thin film solar cell applications **2014**,		2
20	Deposition of multilayer optical coatings using closed-field magnetron sputtering **2006**,		2
19	Optical coatings and thin films for display technologies using closed-field magnetron sputtering **2004**,		2
18	Field-ion Microscope Observations of Sputtered Tungsten Surfaces. *Japanese Journal of Applied Physics*, **1974**, 13, 355	1.4	2
17	Chlorine passivation of grain boundaries in cadmium telluride solar cells. *Physical Review Materials*, **2021**, 5,	3.2	2
16	Characterization of contacts produced using a laser ablation/inkjet one step interconnect process for thin film photovoltaics **2013**,		1
15	Quantitative analysis of field-ion micrographs using moir□ techniques. *Surface Science*, **1977**, 67, 299-316	1.8	1
14	Understanding the Role of CdTe in Polycrystalline CdSe x Te 1□x /CdTe-Graded Bilayer Photovoltaic Devices. *Solar Rrl*,2100523	7.1	1
13	The microstructure of thin film CdTe absorber layers deposited by pulsed dc magnetron sputtering **2016**,		1
12	THE EFFECT OF ANNEALING PRESSURE AND TIME ON THE CRYSTALLINITY OF CZTSe. *Surface Review and Letters*, **2019**, 26, 1850151	1.1	1
11	**2018**,		1
10	Advanced co-sublimation hardware for deposition of graded ternary alloys in thin-film applications **2018**,		1
9	Defect Tolerance in as-deposited Selenium-alloyed Cadmium Telluride Solar Cells **2018**,		1
8	Large Area 3D Elemental Mapping of a MgZnO/CdTe Solar Cell with Correlative EBSD Measurements **2018**,		1

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7	CdS barrier to minimize Zn loss during CdCl2 treatment of Cd-Zn-Te absorbers. *Solar Energy*, **2018**, 173, 1181-1188	6.8	1
6	Selenium passivates grain boundaries in alloyed CdTe solar cells. *Solar Energy Materials and Solar Cells*, **2022**, 238, 111595	6.4	0
5	Characterization of Sub-Bandgap Plasmon Excitations in Transparent Conducting Oxides with Electron Energy-Loss Spectroscopy. *Microscopy and Microanalysis*, **2019**, 25, 600-601	0.5	
4	Characterization of Sub-Bandgap Energy States in CuInxGa(i-x)Se2 and Transparent Conducting Oxides with Electron Energy-Loss Spectroscopy. *Microscopy and Microanalysis*, **2018**, 24, 456-457	0.5	
3	Cupric Oxide Thin Films for Photovoltaic Applications. *Materials Research Society Symposia Proceedings*, **2013**, 1538, 185-190		
2	Surface analytical techniques: their developing role in the characterisation of surfaces, thin films and surface coatings. *Transactions of the Institute of Metal Finishing*, **1984**, 62, 163-168	1.3	
1	MOCVD of II-VI HRT/Emitters for Voc Improvements to CdTe Solar Cells. *Coatings*, **2022**, 12, 261	2.9	