

Matthew C Veale

List of Publications by Year in descending order

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101
papers

1,501
citations

361413

20
h-index

395702

33
g-index

101
all docs

101
docs citations

101
times ranked

955
citing authors

#	ARTICLE	IF	CITATIONS
1	Pixellated Cd(Zn)Te high-energy X-ray instrument. <i>Journal of Instrumentation</i> , 2011, 6, C12009-C12009.	1.2	97
2	Measurements of charge sharing in small pixel CdTe detectors. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2014, 767, 218-226.	1.6	83
3	3D chemical imaging in the laboratory by hyperspectral X-ray computed tomography. <i>Scientific Reports</i> , 2015, 5, 15979.	3.3	72
4	Chromium compensated gallium arsenide detectors for X-ray and β -ray spectroscopic imaging. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2014, 752, 6-14.	1.6	58
5	Characterisation of Redlen high-flux CdZnTe. <i>Journal of Instrumentation</i> , 2017, 12, C12045-C12045.	1.2	49
6	HEXITEC: A High-Energy X-ray Spectroscopic Imaging Detector for Synchrotron Applications. <i>Synchrotron Radiation News</i> , 2018, 31, 28-32.	0.8	49
7	A laboratory system for element specific hyperspectral X-ray imaging. <i>Analyst, The</i> , 2013, 138, 755-759.	3.5	42
8	Ion beam induced charge imaging of charge transport in CdTe and CdZnTe. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2008, 266, 1300-1306.	1.4	41
9	Characterization of the Uniformity of High-Flux CdZnTe Material. <i>Sensors</i> , 2020, 20, 2747.	3.8	37
10	An ASIC for the Study of Charge Sharing Effects in Small Pixel CdZnTe X-Ray Detectors. <i>IEEE Transactions on Nuclear Science</i> , 2011, 58, 2357-2362.	2.0	34
11	Small pixel CZT detector for hard X-ray spectroscopy. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2011, 652, 158-161.	1.6	34
12	A 10 cm \times 10 cm CdTe Spectroscopic Imaging Detector based on the HEXITEC ASIC. <i>Journal of Instrumentation</i> , 2015, 10, P10011-P10011.	1.2	31
13	Explosive detection using pixellated X-ray diffraction (PixD). <i>Journal of Instrumentation</i> , 2013, 8, P03007-P03007.	1.2	30
14	Intrinsic beam emittance of laser-accelerated electrons measured by x-ray spectroscopic imaging. <i>Scientific Reports</i> , 2016, 6, 24622.	3.3	30
15	Multiple Module Pixellated CdTe Spectroscopic X-Ray Detector. <i>IEEE Transactions on Nuclear Science</i> , 2013, 60, 1197-1200.	2.0	28
16	Digital fast pulse shape and height analysis on cadmium-zinc-telluride arrays for high-flux energy-resolved X-ray imaging. <i>Journal of Synchrotron Radiation</i> , 2018, 25, 257-271.	2.4	25
17	Energy-loss correction in charge sharing events for improved performance of pixellated compound semiconductors. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2019, 940, 142-151.	1.6	25
18	Room-temperature X-ray response of cadmium-zinc-telluride pixel detectors grown by the vertical Bridgman technique. <i>Journal of Synchrotron Radiation</i> , 2020, 27, 319-328.	2.4	25

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19	Dual-polarity pulse processing and analysis for charge-loss correction in cadmium-zinc-telluride pixel detectors. <i>Journal of Synchrotron Radiation</i> , 2018, 25, 1078-1092.	2.4	24
20	Interconnect and bonding techniques for pixelated X-ray and gamma-ray detectors. <i>Journal of Instrumentation</i> , 2015, 10, C02010-C02010.	1.2	23
21	Investigation of the small pixel effect in CdZnTe detectors. , 2007, , .		21
22	Investigating the suitability of GaAs:Cr material for high flux X-ray imaging. <i>Journal of Instrumentation</i> , 2014, 9, C12047-C12047.	1.2	21
23	Characterization of the metal-semiconductor interface of gold contacts on CdZnTe formed by electroless deposition. <i>Journal Physics D: Applied Physics</i> , 2015, 48, 275304.	2.8	21
24	X-ray spectroscopy and charge transport properties of CdZnTe grown by the vertical Bridgman method. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2007, 576, 90-94.	1.6	20
25	A CdTe detector for hyperspectral SPECT imaging. <i>Journal of Instrumentation</i> , 2012, 7, P08027-P08027.	1.2	20
26	Characterisation of the high dynamic range Large Pixel Detector (LPD) and its use at X-ray free electron laser sources. <i>Journal of Instrumentation</i> , 2017, 12, P12003-P12003.	1.2	20
27	Investigation of the internal electric field distribution under in situ x-ray irradiation and under low temperature conditions by the means of the Pockels effect. <i>Journal Physics D: Applied Physics</i> , 2010, 43, 085102.	2.8	19
28	Dark-field hyperspectral X-ray imaging. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2014, 470, 20130629.	2.1	19
29	X-ray micro-beam characterization of a small pixel spectroscopic CdTe detector. <i>Journal of Instrumentation</i> , 2012, 7, P07017-P07017.	1.2	18
30	A multi-technique characterization of electroless gold contacts on single crystal CdZnTe radiation detectors. <i>Journal Physics D: Applied Physics</i> , 2013, 46, 455502.	2.8	18
31	Mapping of multi-elements during melting and solidification using synchrotron X-rays and pixel-based spectroscopy. <i>Scientific Reports</i> , 2015, 5, 15988.	3.3	17
32	Materials identification using a small-scale pixellated x-ray diffraction system. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 175304.	2.8	16
33	Comparison of the surfaces and interfaces formed for sputter and electroless deposited gold contacts on CdZnTe. <i>Applied Surface Science</i> , 2018, 427, 1257-1270.	6.1	16
34	Identification of simulants for explosives using pixellated X-ray diffraction. <i>Crime Science</i> , 2013, 2, .	2.8	15
35	Cadmium zinc telluride pixel detectors for high-intensity x-ray imaging at free electron lasers. <i>Journal Physics D: Applied Physics</i> , 2019, 52, 085106.	2.8	15
36	Charge Sharing and Charge Loss in High-Flux Capable Pixelated CdZnTe Detectors. <i>Sensors</i> , 2021, 21, 3260.	3.8	15

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37	K-edge subtraction imaging using a pixellated energy-resolving detector. Proceedings of SPIE, 2011, , .	0.8	14
38	Characterization of Edgeless CdTe Detectors for use in Hard X-Ray Imaging Applications. IEEE Transactions on Nuclear Science, 2012, 59, 1536-1543.	2.0	14
39	High Energy Resolution Hyperspectral X-Ray Imaging for Low-Dose Contrast-Enhanced Digital Mammography. IEEE Transactions on Medical Imaging, 2017, 36, 1784-1795.	8.9	14
40	X-Ray Beam Studies of Charge Sharing in Small Pixel, Spectroscopic, CdZnTe Detectors. IEEE Transactions on Nuclear Science, 2012, 59, 1563-1568.	2.0	13
41	Edge effects in a small pixel CdTe for X-ray imaging. Journal of Instrumentation, 2013, 8, P10018-P10018.	1.2	13
42	Material specific X-ray imaging using an energy-dispersive pixel detector. Nuclear Instruments & Methods in Physics Research B, 2014, 324, 25-28.	1.4	13
43	A first principle method to simulate the spectral response of CdZnTe-based X- and gamma-ray detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 960, 163663.	1.6	13
44	Ion beam induced charge (IBIC) irradiation damage study in synthetic single crystal diamond using 2.6 MeV protons. Physica Status Solidi (A) Applications and Materials Science, 2008, 205, 2211-2215.	1.8	12
45	Development of a multi-detector readout circuitry for ultrahigh energy resolution single-photon imaging applications. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 981, 164531.	1.6	12
46	Quantifying the performance of a hybrid pixel detector with GaAs:Cr sensor for transmission electron microscopy. Ultramicroscopy, 2021, 227, 113298.	1.9	12
47	Improved spectroscopic performance in compound semiconductor detectors for high rate X-ray and gamma-ray imaging applications: A novel depth of interaction correction technique. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 927, 37-45.	1.6	12
48	The effect of fast neutron irradiation on the performance of synthetic single crystal diamond particle detectors. Diamond and Related Materials, 2010, 19, 841-845.	3.9	11
49	Synchrotron characterisation of non-uniformities in a small pixel cadmium zinc telluride imaging detector. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 729, 265-272.	1.6	11
50	IBIC characterization of charge transport in CdTe:Cl. Semiconductors, 2007, 41, 395-401.	0.5	10
51	Incomplete Charge Collection at Inter-Pixel Gap in Low- and High-Flux Cadmium Zinc Telluride Pixel Detectors. Sensors, 2022, 22, 1441.	3.8	10
52	Multivariate analysis of pixelated diffraction data. Journal of Instrumentation, 2011, 6, C12027-C12027.	1.2	9
53	Scatter free imaging for the improvement of breast cancer detection in mammography. Physics in Medicine and Biology, 2016, 61, 7246-7262.	3.0	9
54	Room-temperature performance of 3 mm-thick cadmiumâ€“zincâ€“telluride pixel detectors with sub-millimetre pixelization. Journal of Synchrotron Radiation, 2020, 27, 1180-1189.	2.4	9

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55	Ion Beam Induced Charge Studies of CdZnTe Grown by Modified Vertical Bridgman Method. IEEE Transactions on Nuclear Science, 2008, 55, 3741-3745.	2.0	8
56	Algorithms for spectral calibration of energy-resolving small-pixel detectors. Journal of Instrumentation, 2013, 8, P10024-P10024.	1.2	8
57	Performance comparison of small-pixel CdZnTe radiation detectors with gold contacts formed by sputter and electroless deposition. Journal of Instrumentation, 2017, 12, P06015-P06015.	1.2	8
58	Optimization of K-edge subtraction imaging using a pixellated spectroscopic detector. , 2012, , .		7
59	Through silicon via redistribution of I/O pads for 4-side butt-able imaging detectors. , 2012, , .		7
60	Pixelated diffraction signatures for explosive detection. , 2012, , .		7
61	Imaging of Ra-223 with a small-pixel CdTe detector. Journal of Instrumentation, 2015, 10, C01029-C01029.	1.2	7
62	Energy Recovery of Multiple Charge Sharing Events in Room Temperature Semiconductor Pixel Detectors. Sensors, 2021, 21, 3669.	3.8	7
63	HEXITEC 2 Å— 2 tiled hard X-ray spectroscopic imaging detector system. Journal of Instrumentation, 2022, 17, P01012.	1.2	7
64	Characterization of M- ϵ -n CdTe pixel detectors coupled to HEXITEC readout chip. Journal of Instrumentation, 2012, 7, C01035-C01035.	1.2	6
65	Full-field energy-dispersive powder diffraction imaging using laboratory X-rays. Journal of Applied Crystallography, 2015, 48, 269-272.	4.5	6
66	MHz rate X-Ray imaging with GaAs:Cr sensors using the LPD detector system. Journal of Instrumentation, 2017, 12, P02015-P02015.	1.2	6
67	3D Correlative Imaging of Lithium Ion Concentration in a Vertically Oriented Electrode Microstructure with a Density Gradient. Advanced Science, 2022, 9, e2105723.	11.2	6
68	Comparison of the X-ray performance of small pixel CdTe and CZT detectors. , 2010, , .		5
69	Element Specific Imaging Using Muonic X-rays. , 2018, , .		5
70	Characterisation of the HEXITEC $4S$ X-ray spectroscopic imaging detector incorporating through-silicon via (TSV) technology. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2022, 1025, 166083.	1.6	5
71	Comparison of the x-ray spectroscopy response and charge transport properties of semi-insulating In/Al doped CdZnTe crystals. Journal of Applied Physics, 2009, 105, 083101.	2.5	4
72	Performance characteristics of CdTe drift ring detector. Journal of Instrumentation, 2014, 9, C03029-C03029.	1.2	4

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73	Single-shot structural analysis by high-energy X-ray diffraction using an ultrashort all-optical source. Scientific Reports, 2017, 7, 16603.	3.3	4
74	X-ray microbeam characterisation of crystalline defects in small pixel GaAs:Cr detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2021, 999, 165207.	1.6	4
75	Ballistic Deficit Pulse Processing in Cadmium-Zinc-Telluride Pixel Detectors for High-Flux X-ray Measurements. Sensors, 2022, 22, 3409.	3.8	4
76	Evaluation of a new small-pixel CdTe spectroscopic detector in dual-tracer SPECT brain imaging. , 2012, , .		3
77	Energy dispersive X-ray diffraction computed tomography of breast-simulating phantoms and a tissue sample. , 2013, , .		3
78	Development of a CZT drift ring detector for X and γ ray spectroscopy. Journal of Instrumentation, 2015, 10, P04005-P04005.	1.2	3
79	Energy dispersive detector for white beam synchrotron x-ray fluorescence imaging. AIP Conference Proceedings, 2016, , .	0.4	3
80	Simulation of active-edge pixelated CdTe radiation detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 806, 139-145.	1.6	3
81	Energy calibration and gain correction of pixelated spectroscopic x-ray detectors using correlation optimised warping. Measurement Science and Technology, 2017, 28, 017001.	2.6	3
82	Development of data correction for the 1M Large Pixel Detector at the EuXFEL. Journal of Instrumentation, 2022, 17, P04013.	1.2	3
83	Characterisation of the performance of p-type Si detectors for hard X-ray spectroscopy. Journal of Instrumentation, 2022, 17, P05030.	1.2	3
84	Investigating the small pixel effect in CdZnTe Hard X-ray detectors — The PIXIE ASIC. , 2010, , .		2
85	Fluorescence lifetime imaging microscopy analysis of defects in multi-tube physical vapor transport grown Cd _{1-x} Zn _x Te. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2121-2125.	1.8	2
86	Stencil Printing and Flip-Chip Bonding for Assembly of Pixelated X-ray Detectors using PCB-type Interposer and Flexible Printed Circuit Boards. , 2019, , .		2
87	An <i>operando</i> spatially resolved study of alkaline battery discharge using a novel hyperspectral detector and X-ray tomography. Journal of Applied Crystallography, 2020, 53, 1434-1443.	4.5	2
88	X-ray performance of pixelated CdZnTe detectors. , 2008, , .		1
89	CdTe focal plane detector for hard x-ray focusing optics. Proceedings of SPIE, 2015, , .	0.8	1
90	Scatter-free breast imaging using a monochromator coupled to a pixelated spectroscopic detector. Proceedings of SPIE, 2015, , .	0.8	1

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91	CdTe and CdZnTe Small Pixel Imaging Detectors. , 2017, , 49-81.		1
92	CZT modeling for photon counting computer tomography. , 2019, , .		1
93	Real-time Imaging of the Electric field Distribution in CdZnTe at low temperature. Materials Research Society Symposia Proceedings, 2009, 1164, 1.	0.1	0
94	Breast CT image simulation framework for optimisation of lesion visualisation. , 2013, , .		0
95	A novel approach to scatter-free imaging for the improvement of breast cancer Detection. Journal of Instrumentation, 2014, 9, C12013-C12013.	1.2	0
96	Improvement of the energy resolution of pixelated CdTe detectors for applications in $\hat{0}^{1/2}\hat{1}^2\hat{1}^2$ searches. Journal of Instrumentation, 2015, 10, P07010-P07010.	1.2	0
97	Digital CZT detector system for high flux energy-resolved X-ray imaging. , 2016, , .		0
98	Effects of dead time on quantitative dual-energy imaging using a position-sensitive spectroscopic detector. , 2017, , .		0
99	3D elemental mapping of materials and structures by laboratory scale spectroscopic X-ray tomography. Journal of Physics: Conference Series, 2017, 849, 012013.	0.4	0
100	Microscale X-ray mapping of CZT arrays: spatial dependence of amplitude, shape and multiplicity of detector pulses. , 2017, , .		0
101	Laser-Driven Electron Beams With Ultra-Low Emittance Measured Via Inverse-Compton-Scattered X-Rays. , 2016, , .		0