

# 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	HEXITEC 2 Å— 2 tiled hard X-ray spectroscopic imaging detector system. Journal of Instrumentation, 2022, 17, P01012.	1.2	7
2	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
3	Incomplete Charge Collection at Inter-Pixel Gap in Low- and High-Flux Cadmium Zinc Telluride Pixel Detectors. Sensors, 2022, 22, 1441.	3.8	10
4	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
5	Development of data correction for the 1M Large Pixel Detector at the EuXFEL. Journal of Instrumentation, 2022, 17, P04013.	1.2	3
6	Ballistic Deficit Pulse Processing in Cadmium Zinc Telluride Pixel Detectors for High-Flux X-ray Measurements. Sensors, 2022, 22, 3409.	3.8	4
7	Characterisation of the performance of p-type Si detectors for hard X-ray spectroscopy. Journal of Instrumentation, 2022, 17, P05030.	1.2	3
8	Charge Sharing and Charge Loss in High-Flux Capable Pixelated CdZnTe Detectors. Sensors, 2021, 21, 3260.	3.8	15
9	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
10	Energy Recovery of Multiple Charge Sharing Events in Room Temperature Semiconductor Pixel Detectors. Sensors, 2021, 21, 3669.	3.8	7
11	Quantifying the performance of a hybrid pixel detector with GaAs:Cr sensor for transmission electron microscopy. Ultramicroscopy, 2021, 227, 113298.	1.9	12
12	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
13	Room-temperature performance of 3 mm-thick cadmium zinc telluride pixel detectors with sub-millimetre pixelization. Journal of Synchrotron Radiation, 2020, 27, 1180-1189.	2.4	9
14	Characterization of the Uniformity of High-Flux CdZnTe Material. Sensors, 2020, 20, 2747.	3.8	37
15	Room-temperature X-ray response of cadmium zinc telluride pixel detectors grown by the vertical Bridgman technique. Journal of Synchrotron Radiation, 2020, 27, 319-328.	2.4	25
16	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
17	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
18	Energy-loss correction in charge sharing events for improved performance of pixelated compound semiconductors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 940, 142-151.	1.6	25

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19	Stencil Printing and Flip-Chip Bonding for Assembly of Pixelated X-ray Detectors using PCB-type Interposer and Flexible Printed Circuit Boards. , 2019, , .		2
20	Cadmium zinc telluride pixel detectors for high-intensity x-ray imaging at free electron lasers. Journal Physics D: Applied Physics, 2019, 52, 085106.	2.8	15
21	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
22	CZT modeling for photon counting computer tomography. , 2019, , .		1
23	Digital fast pulse shape and height analysis on cadmium-zinc-telluride arrays for high-flux energy-resolved X-ray imaging. Journal of Synchrotron Radiation, 2018, 25, 257-271.	2.4	25
24	Comparison of the surfaces and interfaces formed for sputter and electroless deposited gold contacts on CdZnTe. Applied Surface Science, 2018, 427, 1257-1270.	6.1	16
25	Element Specific Imaging Using Muonic X-rays. , 2018, , .		5
26	HEXITEC: A High-Energy X-ray Spectroscopic Imaging Detector for Synchrotron Applications. Synchrotron Radiation News, 2018, 31, 28-32.	0.8	49
27	Dual-polarity pulse processing and analysis for charge-loss correction in cadmium-zinc-telluride pixel detectors. Journal of Synchrotron Radiation, 2018, 25, 1078-1092.	2.4	24
28	CdTe and CdZnTe Small Pixel Imaging Detectors. , 2017, , 49-81.		1
29	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
30	MHz rate X-Ray imaging with GaAs:Cr sensors using the LPD detector system. Journal of Instrumentation, 2017, 12, P02015-P02015.	1.2	6
31	Effects of dead time on quantitative dual-energy imaging using a position-sensitive spectroscopic detector. , 2017, , .		0
32	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
33	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
34	Single-shot structural analysis by high-energy X-ray diffraction using an ultrashort all-optical source. Scientific Reports, 2017, 7, 16603.	3.3	4
35	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
36	Characterisation of Redlen high-flux CdZnTe. Journal of Instrumentation, 2017, 12, C12045-C12045.	1.2	49

#	ARTICLE	IF	CITATIONS
37	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
38	Microscale X-ray mapping of CZT arrays: spatial dependence of amplitude, shape and multiplicity of detector pulses. , 2017, , .		0
39	Materials identification using a small-scale pixellated x-ray diffraction system. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 175304.	2.8	16
40	Scatter free imaging for the improvement of breast cancer detection in mammography. <i>Physics in Medicine and Biology</i> , 2016, 61, 7246-7262.	3.0	9
41	Intrinsic beam emittance of laser-accelerated electrons measured by x-ray spectroscopic imaging. <i>Scientific Reports</i> , 2016, 6, 24622.	3.3	30
42	Digital CZT detector system for high flux energy-resolved X-ray imaging. , 2016, , .		0
43	Energy dispersive detector for white beam synchrotron x-ray fluorescence imaging. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	3
44	Simulation of active-edge pixelated CdTe radiation detectors. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2016, 806, 139-145.	1.6	3
45	Laser-Driven Electron Beams With Ultra-Low Emittance Measured Via Inverse-Compton-Scattered X-Rays. , 2016, , .		0
46	A 10 cm $\tilde{\text{A}}$ – 10 cm CdTe Spectroscopic Imaging Detector based on the HEXITEC ASIC. <i>Journal of Instrumentation</i> , 2015, 10, P10011-P10011.	1.2	31
47	3D chemical imaging in the laboratory by hyperspectral X-ray computed tomography. <i>Scientific Reports</i> , 2015, 5, 15979.	3.3	72
48	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
49	Development of a CZT drift ring detector for X and $\tilde{\text{A}}$ ray spectroscopy. <i>Journal of Instrumentation</i> , 2015, 10, P04005-P04005.	1.2	3
50	Imaging of Ra-223 with a small-pixel CdTe detector. <i>Journal of Instrumentation</i> , 2015, 10, C01029-C01029.	1.2	7
51	CdTe focal plane detector for hard x-ray focusing optics. <i>Proceedings of SPIE</i> , 2015, , .	0.8	1
52	Interconnect and bonding techniques for pixelated X-ray and gamma-ray detectors. <i>Journal of Instrumentation</i> , 2015, 10, C02010-C02010.	1.2	23
53	Improvement of the energy resolution of pixelated CdTe detectors for applications in $\tilde{\text{A}}$ searches. <i>Journal of Instrumentation</i> , 2015, 10, P07010-P07010.	1.2	0
54	Full-field energy-dispersive powder diffraction imaging using laboratory X-rays. <i>Journal of Applied Crystallography</i> , 2015, 48, 269-272.	4.5	6

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55	Characterization of the metal-semiconductor interface of gold contacts on CdZnTe formed by electroless deposition. Journal Physics D: Applied Physics, 2015, 48, 275304.	2.8	21
56	Scatter-free breast imaging using a monochromator coupled to a pixellated spectroscopic detector. Proceedings of SPIE, 2015, , .	0.8	1
57	Fluorescence lifetime imaging microscopy analysis of defects in multi-tube physical vapor transport grown Cd <sub>1-x</sub> Zn <sub>x</sub> Te. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2121-2125.	1.8	2
58	Dark-field hyperspectral X-ray imaging. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20130629.	2.1	19
59	Measurements of charge sharing in small pixel CdTe detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 767, 218-226.	1.6	83
60	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
61	Chromium compensated gallium arsenide detectors for X-ray and <sup>137</sup> I-ray spectroscopic imaging. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2014, 752, 6-14.	1.6	58
62	Investigating the suitability of GaAs:Cr material for high flux X-ray imaging. Journal of Instrumentation, 2014, 9, C12047-C12047.	1.2	21
63	Performance characteristics of CdTe drift ring detector. Journal of Instrumentation, 2014, 9, C03029-C03029.	1.2	4
64	A novel approach to scatter-free imaging for the improvement of breast cancer Detection. Journal of Instrumentation, 2014, 9, C12013-C12013.	1.2	0
65	Identification of simulants for explosives using pixellated X-ray diffraction. Crime Science, 2013, 2, .	2.8	15
66	Multiple Module Pixellated CdTe Spectroscopic X-Ray Detector. IEEE Transactions on Nuclear Science, 2013, 60, 1197-1200.	2.0	28
67	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
68	Energy dispersive X-ray diffraction computed tomography of breast-simulating phantoms and a tissue sample. , 2013, , .		3
69	Breast CT image simulation framework for optimisation of lesion visualisation. , 2013, , .		0
70	A laboratory system for element specific hyperspectral X-ray imaging. Analyst, The, 2013, 138, 755-759.	3.5	42
71	A multi-technique characterization of electroless gold contacts on single crystal CdZnTe radiation detectors. Journal Physics D: Applied Physics, 2013, 46, 455502.	2.8	18
72	Algorithms for spectral calibration of energy-resolving small-pixel detectors. Journal of Instrumentation, 2013, 8, P10024-P10024.	1.2	8

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73	Edge effects in a small pixel CdTe for X-ray imaging. Journal of Instrumentation, 2013, 8, P10018-P10018.	1.2	13
74	Explosive detection using pixellated X-ray diffraction (PixD). Journal of Instrumentation, 2013, 8, P03007-P03007.	1.2	30
75	Optimization of K-edge subtraction imaging using a pixellated spectroscopic detector. , 2012, , .		7
76	Through silicon via redistribution of I/O pads for 4-side butt-able imaging detectors. , 2012, , .		7
77	Evaluation of a new small-pixel CdTe spectroscopic detector in dual-tracer SPECT brain imaging. , 2012, , .		3
78	A CdTe detector for hyperspectral SPECT imaging. Journal of Instrumentation, 2012, 7, P08027-P08027.	1.2	20
79	X-ray micro-beam characterization of a small pixel spectroscopic CdTe detector. Journal of Instrumentation, 2012, 7, P07017-P07017.	1.2	18
80	Characterization of M- $\mu$ n CdTe pixel detectors coupled to HEXITEC readout chip. Journal of Instrumentation, 2012, 7, C01035-C01035.	1.2	6
81	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
82	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
83	Pixelated diffraction signatures for explosive detection. , 2012, , .		7
84	An ASIC for the Study of Charge Sharing Effects in Small Pixel CdZnTe X-Ray Detectors. IEEE Transactions on Nuclear Science, 2011, 58, 2357-2362.	2.0	34
85	Pixellated Cd(Zn)Te high-energy X-ray instrument. Journal of Instrumentation, 2011, 6, C12009-C12009.	1.2	97
86	K-edge subtraction imaging using a pixellated energy-resolving detector. Proceedings of SPIE, 2011, , .	0.8	14
87	Multivariate analysis of pixelated diffraction data. Journal of Instrumentation, 2011, 6, C12027-C12027.	1.2	9
88	Small pixel CZT detector for hard X-ray spectroscopy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 652, 158-161.	1.6	34
89	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. Journal Physics D: Applied Physics, 2010, 43, 085102.	2.8	19
90	Comparison of the X-ray performance of small pixel CdTe and CZT detectors. , 2010, , .		5

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91	Investigating the small pixel effect in CdZnTe Hard X-ray detectors &#x2014; The PIXIE ASIC. , 2010, , .		2
92	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
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	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
95	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
96	Ion beam induced charge imaging of charge transport in CdTe and CdZnTe. Nuclear Instruments & Methods in Physics Research B, 2008, 266, 1300-1306.	1.4	41
97	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
98	X-ray performance of pixilated CdZnTe detectors. , 2008, , .		1
99	Investigation of the small pixel effect in CdZnTe detectors. , 2007, , .		21
100	IBIC characterization of charge transport in CdTe:Cl. Semiconductors, 2007, 41, 395-401.	0.5	10
101	X-ray spectroscopy and charge transport properties of CdZnTe grown by the vertical Bridgman method. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2007, 576, 90-94.	1.6	20