Stephen J Smith

List of Publications by Year
in descending order

109 papers	1,483 citations	430874 18 h-index	434195 31 g-index
109 all docs	109 docs citations	109 times ranked	827 citing authors

#	Article	IF	Citations
1	Longitudinal Proximity Effects in Superconducting Transition-Edge Sensors. Physical Review Letters, 2010, 104, 047003.	7.8	94
2	Performance of TES X-ray Microcalorimeters withÂaÂNovel Absorber Design. Journal of Low Temperature Physics, 2008, 151, 400-405.	1.4	71
3	Proximity effects and nonequilibrium superconductivity in transition-edge sensors. Physical Review B, 2011, 84, .	3.2	64
4	Small Pitch Transition-Edge Sensors with Broadband High Spectral Resolution for Solar Physics. Journal of Low Temperature Physics, 2012, 167, 168-175.	1.4	62
5	Implications of weak-link behavior on the performance of Mo/Au bilayer transition-edge sensors. Journal of Applied Physics, 2013, 114, .	2.5	49
6	Close-packed arrays of transition-edge x-ray microcalorimeters with high spectral resolution at 5.9â€‚keV. Applied Physics Letters, 2008, 92, 013508.	3.3	44
7	Lynx x-ray microcalorimeter. Journal of Astronomical Telescopes, Instruments, and Systems, 2019, 5, 1.	1.8	39
8	Advances in Small Pixel TES-Based X-Ray Microcalorimeter Arrays for Solar Physics and Astrophysics. IEEE Transactions on Applied Superconductivity, 2013, 23, 2100705-2100705.	1.7	37
9	Fine pitch transition-edge sensor X-ray microcalorimeters with sub-eV energy resolution at 1.5â€‰keV. Applied Physics Letters, 2015, 107, .	3.3	34
10	Performance of an X-ray Microcalorimeter with a 240Âμm Absorber and a 50Âμm TES Bilayer. Journal of Low Temperature Physics, 2018, 193, 337-343.	1.4	33
11	Transition-edge sensor pixel parameter design of the microcalorimeter array for the x-ray integral field unit on Athena. Proceedings of SPIE, 2016, , .	0.8	32
12	Demonstration of Athena X-IFU Compatible 40-Row Time-Division-Multiplexed Readout. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	32
13	Microwave SQUID multiplexing for the Lynx x-ray microcalorimeter. Journal of Astronomical Telescopes, Instruments, and Systems, 2019, 5, 1.	1.8	24
14	Multiplexed readout of uniform arrays of TES x-ray microcalorimeters suitable for Constellation-X. Proceedings of SPIE, 2008, , .	0.8	23
15	Effects of Normal Metal Features on Superconducting Transition-Edge Sensors. Journal of Low Temperature Physics, 2018, 193, 231-240.	1.4	22
16	Thermal fluctuation noise in Mo/Au superconducting transition-edge sensor microcalorimeters. Journal of Applied Physics, 2019, 125, .	2.5	22
17	Performance of a Broad-Band, High-Resolution, Transition-Edge Sensor Spectrometer for X-ray Astrophysics. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-6.	1.7	22
18	The measurement of climate change using data from the Advanced Very High Resolution and Along Track Scanning Radiometers. Journal of Geophysical Research, 2004, 109, n/a-n/a.	3.3	21

#	Article	IF	Citations
19	Athermal energy loss from x-rays deposited in thin superconducting films on solid substrates. Physical Review B, 2013, 87, .	3.2	21
20	Development of Position-Sensitive Transition-Edge Sensor X-Ray Detectors. IEEE Transactions on Applied Superconductivity, 2009, 19, 451-455.	1.7	20
21	Characterization and Performance of Magnetic Calorimeters for Applications in X-ray Spectroscopy. Journal of Low Temperature Physics, 2014, 176, 617-623.	1.4	19
22	Modeling of TES X-Ray Microcalorimeters withÂaÂNovel Absorber Design. Journal of Low Temperature Physics, 2008, 151, 406-412.	1.4	18
23	Josephson Effects in Frequency-Domain Multiplexed TES Microcalorimeters and Bolometers. Journal of Low Temperature Physics, 2018, 193, 209-216.	1.4	18
24	Multiabsorber transition-edge sensors for x-ray astronomy. Journal of Astronomical Telescopes, Instruments, and Systems, 2019, 5, 1.	1.8	18
25	Magnetically Coupled Microcalorimeters. Journal of Low Temperature Physics, 2012, 167, 254-268.	1.4	17
26	Characterization of Mo/Au Transition-Edge Sensors with Different Geometric Configurations. Journal of Low Temperature Physics, 2014, 176, 356-362.	1.4	17
27	Toward Large Field-of-View High-Resolution X-ray Imaging Spectrometers: Microwave Multiplexed Readout of 28 TES Microcalorimeters. Journal of Low Temperature Physics, 2018, 193, 258-266.	1.4	16
28	Optimised filtering for improved energy and position resolution in position-sensitive TES based X-ray detectors. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2006, 556, 237-245.	1.6	15
29	Characterizing the Superconducting-to-Normal Transition inÂMo/Au Transition-Edge SensorÂBilayers. Journal of Low Temperature Physics, 2008, 151, 195-200.	1.4	15
30	Development of Embedded Heatsinking Layers for Compact Arrays of X-Ray TES Microcalorimeters. IEEE Transactions on Applied Superconductivity, 2011, 21, 223-226.	1.7	15
31	Progress in the Development of Frequency-Domain Multiplexing for the X-ray Integral Field Unit on Board the Athena Mission. Journal of Low Temperature Physics, 2020, 199, 737-744.	1.4	15
32	Uniform high spectral resolution demonstrated in arrays of TES x-ray microcalorimeters. Proceedings of SPIE, 2007, , .	0.8	14
33	Kilopixel X-ray Microcalorimeter Arrays for Astrophysics: Device Performance and Uniformity. Journal of Low Temperature Physics, 2012, 167, 732-740.	1.4	14
34	Performance assessment of different pulse reconstruction algorithms for the ATHENA X-ray Integral Field Unit. Proceedings of SPIE, 2016, , .	0.8	14
35	Development of frequency domain multiplexing for the X-ray Integral Field unit (X-IFU) on the Athena. Proceedings of SPIE, 2016, , .	0.8	14
36	TES-Based X-ray Microcalorimeter Performances Under AC Bias and FDM for Athena. Journal of Low Temperature Physics, 2016, 184, 436-442.	1.4	14

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37	The focal plane assembly for the Athena X-ray Integral Field Unit instrument. Proceedings of SPIE, 2016, , .	0.8	14
38	Study of Dissipative Losses in AC-Biased Mo/Au Bilayer Transition-Edge Sensors. Journal of Low Temperature Physics, 2018, 193, 356-364.	1.4	12
39	First Operation of TES Microcalorimeters in Space with the Micro-X Sounding Rocket. Journal of Low Temperature Physics, 2020, 199, 1062-1071.	1.4	12
40	TESSIM: a simulator for the Athena-X-IFU. Proceedings of SPIE, 2016, , .	0.8	12
41	Characterisation and modelling of transition edge sensor distributed read-out imaging devices. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2006, 559, 500-502.	1.6	11
42	Development of arrays of position-sensitive microcalorimeters for Constellation-X. Proceedings of SPIE, 2008, , .	0.8	11
43	Extended Line Spread Function of TES Microcalorimeters With Au/Bi Absorbers. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	11
44	Optimization of Time- and Code-Division-Multiplexed Readout for Athena X-IFU. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	11
45	Thermal Crosstalk Measurements and Simulations for an X-ray Microcalorimeter Array. Journal of Low Temperature Physics, 2020, 199, 663-671.	1.4	11
46	Heat Sinking and Crosstalk for Large, Close-Packed Arrays of Microcalorimeters. Journal of Low Temperature Physics, 2008, 151, 506-512.	1.4	10
47	Large-Absorber TES X-ray Microcalorimeters and the Micro-X Detector Array. , 2009, , .		10
48	The x-ray microcalorimeter spectrometer onboard of IXO. Proceedings of SPIE, 2010, , .	0.8	10
49	High-spectral resolution high-cadence imaging x-ray microcalorimeters for solar physics. , 2010, , .		10
50	Implications of Weak Link Effects on Thermal Characteristics of Transition-Edge Sensors. Journal of Low Temperature Physics, 2012, 167, 121-128.	1.4	10
51	Uniformity of Kilo-Pixel Arrays of Transition-Edge Sensors for X-ray Astronomy. IEEE Transactions on Applied Superconductivity, 2015, 25, 1-5.	1.7	10
52	Progress Towards Improved Analysis of TES X-ray Data Using Principal Component Analysis. Journal of Low Temperature Physics, 2016, 184, 382-388.	1.4	10
53	Electron-Beam Deposition of Superconducting Molybdenum Thin Films for the Development of Mo/Au TES X-ray Microcalorimeter. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-4.	1.7	10
54	Toward 100,000-Pixel Microcalorimeter Arrays Using Multi-absorber Transition-Edge Sensors. Journal of Low Temperature Physics, 2020, 199, 330-338.	1.4	10

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55	Implementation of complex signal-processing algorithms for position-sensitive microcalorimeters. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 602, 537-544.	1.6	9
56	The X-Ray Microcalorimeter Spectrometer for the International X-Ray Observatory. , 2009, , .		9
57	Energy Calibration of High-Resolution X-Ray TES Microcalorimeters With 3 eV Optical Photons. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-4.	1.7	9
58	GPU Supported Simulation of Transition-Edge Sensor Arrays. Journal of Low Temperature Physics, 2020, 200, 277-285.	1.4	9
59	Heat Sinking, Crosstalk, and Temperature Uniformity for Large Close-Packed Microcalorimeter Arrays. IEEE Transactions on Applied Superconductivity, 2009, 19, 557-560.	1.7	8
60	Performance of Magnetic Penetration Thermometers for X-ray Astronomy. Journal of Low Temperature Physics, 2012, 167, 455-460.	1.4	8
61	High Count-Rate Studies of Small-Pitch Transition-Edge Sensor X-ray Microcalorimeters. Journal of Low Temperature Physics, 2014, 176, 597-603.	1.4	8
62	Design and Performance of Hybrid Arrays of Mo/Au Bilayer Transition-Edge Sensors. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-5.	1.7	8
63	Mapping TES Temperature Sensitivity and Current Sensitivity as a Function of Temperature, Current, and Magnetic Field with IV Curve and Complex Admittance Measurements. Journal of Low Temperature Physics, 2018, 193, 321-327.	1.4	8
64	Quantum Efficiency Study and Reflectivity Enhancement of Au/Bi Absorbers. Journal of Low Temperature Physics, 2020, 199, 393-400.	1.4	8
65	Mitigation of Finite Bandwidth Effects in Time-Division-Multiplexed SQUID Readout of TES Arrays. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	8
66	Magnetic calorimeter option for the Lynx x-ray microcalorimeter. Journal of Astronomical Telescopes, Instruments, and Systems, 2019, 5, 1.	1.8	8
67	Various Optimizations of TES Arrays for X-Ray Astrophysics. Journal of Low Temperature Physics, 2008, 151, 223-228.	1.4	7
68	Real-Time Data Processing for X-Ray Spectroscopy. AIP Conference Proceedings, 2009, , .	0.4	7
69	Fabrication of Microstripline Wiring for Large Format Transition Edge Sensor Arrays. Journal of Low Temperature Physics, 2012, 167, 547-553.	1.4	7
70	Magnetically Tuned Superconducting Transition-Edge Sensors. IEEE Transactions on Applied Superconductivity, 2013, 23, 2101405-2101405.	1.7	7
71	Fabrication of X-Ray Microcalorimeter Focal Planes Composed of Two Distinct Pixel Types. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-5.	1.7	7
72	Demonstration of Fine-Pitch High-Resolution X-ray Transition-Edge Sensor Microcalorimeters Optimized for Energies below 1ÂkeV. Journal of Low Temperature Physics, 2020, 199, 949-954.	1.4	7

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73	First results from a 1-D imaging spectrometer using Ir TESs. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2004, 520, 449-451.	1.6	6
74	Performance of High-Resolution, Micro-fabricated, X-ray Magnetic Calorimeters. AIP Conference Proceedings, 2009, , .	0.4	6
75	Experimental Results and Modeling of Low-Heat-Capacity TES Microcalorimeters for Soft-X-ray Spectroscopy. AIP Conference Proceedings, 2009, , .	0.4	6
76	Development of a TES-Based Anti-coincidence Detector for Future x-Ray Observatories. Journal of Low Temperature Physics, 2012, 167, 236-241.	1.4	6
77	Time Domain Multiplexed Readout of Magnetically Coupled Calorimeters. IEEE Transactions on Applied Superconductivity, 2013, 23, 2500905-2500905.	1.7	6
78	Magnetic Calorimeter Arrays with High Sensor Inductance and Dense Wiring. Journal of Low Temperature Physics, 2018, 193, 668-674.	1.4	6
79	Fabrication of Magnetic Calorimeter Arrays With Buried Wiring. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-6.	1.7	6
80	Optimizing Arrays of Position-Sensitive TESs. Journal of Low Temperature Physics, 2008, 151, 1009-1014.	1.4	5
81	Development of Position-Sensitive Magnetic Calorimeter X-ray Detectors. , 2009, , .		5
82	Development of x-ray microcalorimeter imaging spectrometers for the X-ray Surveyor mission concept. Proceedings of SPIE, 2016, , .	0.8	5
83	Reduced-Scale Transition-Edge Sensor Detectors for Solar and X-Ray Astrophysics. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-5.	1.7	5
84	Thermal Impact of Cosmic Ray Interaction with an X-Ray Microcalorimeter Array. Journal of Low Temperature Physics, 2020, 199, 45-55.	1.4	5
85	High-Frequency Noise Peaks in Mo/Au Superconducting Transition-Edge Sensor Microcalorimeters. Journal of Low Temperature Physics, 2020, 200, 192-199.	1.4	5
86	Development of TES Microcalorimeter Arrays for the Micro-X Sounding Rocket Experiment. IEEE Transactions on Applied Superconductivity, 2013, 23, 2101705-2101705.	1.7	4
87	Narrow Line X-Ray Calibration Source for High Resolution Microcalorimeters. Journal of Low Temperature Physics, 2014, 176, 566-570.	1.4	4
88	Detector Calibration for the Micro-X Sounding Rocket X-ray Telescope. Journal of Low Temperature Physics, 2018, 193, 984-990.	1.4	4
89	Fabrication of Flexible Superconducting Wiring with High Current-Carrying Capacity Indium Interconnects. Journal of Low Temperature Physics, 2018, 193, 687-694.	1.4	4
90	Design and Performance of a Prototype Magnetic Calorimeter Array for the Lynx X-Ray Microcalorimeter. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-6.	1.7	4

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91	Micro-X Sounding Rocket: Transitioning from First Flight to a Dark Matter Configuration. Journal of Low Temperature Physics, 2020, 199, 1072-1081.	1.4	4
92	Optimizing Transition-Edge Sensor Design for High Count-Rate Applications. , 2009, , .		3
93	Characterization of a Prototype TES-Based Anti-coincidence Detector for Use with Future X-ray Calorimeter Arrays. Journal of Low Temperature Physics, 2016, 184, 23-29.	1.4	3
94	The performance of the ATHENA X-ray Integral Field Unit. , 2018, , .		3
95	Studies of Thermal Diffusion in Planar Absorber Designs for the Micro-X Rocket. Journal of Low Temperature Physics, 2008, 151, 424-429.	1.4	2
96	Superconducting Effects in Optimization of Magnetic Penetration Thermometers for X-Ray Microcalorimeters. IEEE Transactions on Applied Superconductivity, 2013, 23, 2300605-2300605.	1.7	2
97	The Magnetically-Tuned Transition-Edge Sensor. Journal of Low Temperature Physics, 2014, 176, 392-399.	1.4	2
98	Status of the micro-X sounding rocket x-ray spectrometer. , 2016, , .		2
99	Design of Magnetic Shielding and Field Coils for a TES X-ray Microcalorimeter Test Platform. Journal of Low Temperature Physics, 2019, 194, 433-442.	1.4	2
100	Position-Sensitive Magnetic Calorimeters for Lynx. Journal of Low Temperature Physics, 2020, 199, 916-922.	1.4	2
101	Calibration and Testing of Small High-Resolution Transition Edge Sensor Microcalorimeters With Optical Photons. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	2
102	Testing the X-IFU calibration requirements: an example for quantum efficiency and energy resolution. , 2018, , .		2
103	Correcting Energy Estimation Errors Due to Finite Sampling of Transition-Edge Sensor Data. Journal of Low Temperature Physics, 0, , 1.	1.4	2
104	Signal processing for distributed readout using TESs. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2006, 559, 814-816.	1.6	1
105	Theoretical noise analysis on a position-sensitive Metallic Magnetic Calorimeter. Journal of Instrumentation, 2007, 2, P11005-P11005.	1.2	1
106	Extended focal-plane array development for the International X-ray Observatory. , 2009, , .		1
107	Parametric Characterization of TES Detectors Under DC Bias. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-5.	1.7	1
108	High count-rate study of two TES x-ray microcalorimeters with different transition temperatures. Superconductor Science and Technology, 2017, 30, 104005.	3.5	0

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109	Extension of the Energy Range Accessible with a TES Using Bath Temperature Variations. Journal of Low Temperature Physics, 2020, 199, 704-715.	1.4	0