

# Graham Machin

## List of Publications by Year in descending order

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Version: 2024-02-01

111  
papers

1,838  
citations

257450

24  
h-index

330143

37  
g-index

112  
all docs

112  
docs citations

112  
times ranked

734  
citing authors

#	ARTICLE	IF	CITATIONS
1	Toward Gamma Ray Immune Fibre-Optic Phosphor Thermometry for Nuclear Decommissioning. International Journal of Thermophysics, 2022, 43, 1.	2.1	4
2	New Paradigms in Traceable Process Control Thermometry. , 2022, , .		0
3	Emerging technologies in the field of thermometry. Measurement Science and Technology, 2022, 33, 092001.	2.6	15
4	Novel thermometry approaches to facilitate safe and effective monitoring of nuclear material containers. Nuclear Engineering and Design, 2021, 371, 110939.	1.7	4
5	Is current body temperature measurement practice fit-for-purpose?. Journal of Medical Engineering and Technology, 2021, 45, 136-144.	1.4	8
6	Design, construction and traceable calibration of a phosphor-based fibre-optic thermometer from 0 Å°C to 650 Å°C. Measurement Science and Technology, 2021, 32, 094004.	2.6	4
7	On the uncertainties in the realization of the kelvin based on thermodynamic temperatures of high-temperature fixed-point cells. Metrologia, 2021, 58, 035007.	1.2	6
8	Phosphor thermometry for nuclear decommissioning and waste storage. Nuclear Engineering and Design, 2021, 375, 111091.	1.7	11
9	Infrared thermography and ulcer prevention in the high-risk diabetic foot: data from a single-blind multicentre controlled clinical trial. Diabetic Medicine, 2020, 37, 95-104.	2.3	19
10	Between visit variability of thermal imaging of feet in people attending podiatric clinics with diabetic neuropathy at high risk of developing foot ulcers. Physiological Measurement, 2019, 40, 084004.	2.1	5
11	Focus collection on Thermal Imaging in Medicine. Physiological Measurement, 2019, 40, 100301.	2.1	2
12	NPL contributions to the standardisation and validation of contemporary medical thermometry methods. Physiological Measurement, 2019, 40, 05TR01.	2.1	1
13	Imaging phosphor thermometry from $T = 20 \text{ }^{\circ}\text{C}$ to $450 \text{ }^{\circ}\text{C}$ using the time-domain intensity ratio technique. Measurement Science and Technology, 2019, 30, 044002.	2.6	17
14	Thermometry of intermediate level waste containers using phosphor thermometry and thermal imaging. Measurement: Journal of the International Measurement Confederation, 2019, 132, 207-212.	5.0	6
15	Comparison of non-contact infrared skin thermometers. Journal of Medical Engineering and Technology, 2018, 42, 65-71.	1.4	31
16	The Boltzmann project. Metrologia, 2018, 55, R1-R20.	1.2	49
17	The kelvin redefined. Measurement Science and Technology, 2018, 29, 022001.	2.6	36
18	Thermodynamic measurements of Zn and Al freezing temperatures using an InGaAs-based, near-infrared radiation thermometer 3 (NIRT3). Journal of Physics: Conference Series, 2018, 1065, 122023.	0.4	2

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19	The European Metrology Programme for Innovation and Research project: Implementing the new kelvin 2 (InK2). Journal of Physics: Conference Series, 2018, 1065, 122002.	0.4	6
20	Reliability of a novel thermal imaging system for temperature assessment of healthy feet. Journal of Foot and Ankle Research, 2018, 11, 22.	1.9	35
21	Integrated self-validating thermocouples with a reference temperature up to 1329 Å°C. Measurement Science and Technology, 2018, 29, 105002.	2.6	8
22	A medical thermal imaging device for the prevention of diabetic foot ulceration. Physiological Measurement, 2017, 38, 420-430.	2.1	17
23	Further Estimates of $(T - T_{90})$ Close to the Triple Point of Water. International Journal of Thermophysics, 2017, 38, 1.	2.1	21
24	Thermal symmetry of healthy feet: a precursor to a thermal study of diabetic feet prior to skin breakdown. Physiological Measurement, 2017, 38, 33-44.	2.1	41
25	Investigation of the furnace effect in cobalt-carbon high-temperature fixed-point cells. Measurement: Journal of the International Measurement Confederation, 2017, 106, 88-94.	5.0	10
26	Re-estimation of argon isotope ratios leading to a revised estimate of the Boltzmann constant. Metrologia, 2017, 54, 683-692.	1.2	22
27	The equilibrium liquidus temperatures of rhenium-carbon, platinum-carbon and cobalt-carbon eutectic alloys. Metrologia, 2017, 54, 390-398.	1.2	25
28	Long-Term Stability Evaluation of a Sn-Doped Ni-C Eutectic Cell Suitable for Radiation Thermometry. International Journal of Thermophysics, 2017, 38, 1.	2.1	3
29	Investigation of ternary and quaternary high-temperature fixed-point cells, based on platinum-carbon-X, as blind comparison artefacts. Measurement Science and Technology, 2016, 27, 115010.	2.6	0
30	Dissemination of thermodynamic temperature above the freezing point of silver. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150043.	3.4	13
31	Thermodynamic temperature by primary radiometry. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150041.	3.4	23
32	Thermodynamic temperature assignment to the point of inflection of the melting curve of high-temperature fixed points. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150044.	3.4	64
33	Progress towards the determination of thermodynamic temperature with ultra-low uncertainty. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150046.	3.4	27
34	On the Correction of the Melting Curve of the Eutectic Co-C for the Effect of the Thermal Inertia of the Furnace. International Journal of Thermophysics, 2016, 37, 1.	2.1	7
35	Summary of achievements of the European Metrology Research Programme Project 'Implementing the new Kelvin' (InK 1). Measurement: Journal of the International Measurement Confederation, 2016, 94, 149-156.	5.0	13
36	Potential for improved radiation thermometry measurement uncertainty through implementing a primary scale in an industrial laboratory. Measurement Science and Technology, 2016, 27, 094002.	2.6	4

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37	Towards implementing the new kelvin. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150053.	3.4	6
38	Response to Macnaughton's "Comment on "A low-uncertainty measurement of the Boltzmann constant". Metrologia, 2016, 53, 116-122.	1.2	2
39	The kelvin redefinition and its <i>mise en pratique</i> . Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150037.	3.4	54
40	Estimates of the difference between thermodynamic temperature and the International Temperature Scale of 1990 in the range 118 K to 303 K. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150048.	3.4	26
41	MRS thermometry calibration at 3%T: effects of protein, ionic concentration and magnetic field strength. NMR in Biomedicine, 2015, 28, 792-800.	2.8	10
42	Towards implementing the new kelvin. Measurement: Journal of the International Measurement Confederation, 2015, 74, 113-115.	5.0	1
43	Bilateral Comparison Between NPL and INMETRO Using a High-Temperature Fixed Point of Unknown Temperature. International Journal of Thermophysics, 2015, 36, 327-335.	2.1	4
44	Proposed Process for Estimating Definitive Temperatures of High-Temperature Fixed Points. International Journal of Thermophysics, 2015, 36, 347-366.	2.1	5
45	Evaluation and Selection of High-Temperature Fixed-Point Cells for Thermodynamic Temperature Assignment. International Journal of Thermophysics, 2015, 36, 1834-1847.	2.1	23
46	Stability of cobalt-carbon high temperature fixed points doped with iron and platinum. Metrologia, 2015, 52, 353-359.	1.2	4
47	Correction of NPL-2013 estimate of the Boltzmann constant for argon isotopic composition and thermal conductivity. Metrologia, 2015, 52, S353-S363.	1.2	24
48	On the Influence of the Furnace and Cell Conditions on the Phase Transition of the Eutectic Co-C. International Journal of Thermophysics, 2015, 36, 1859-1887.	2.1	8
49	Comparison of extrapolated and interpolated temperature scales from 1000°C to 2500°C between a national measurement institute and an ISO17025 accredited calibration laboratory. Measurement: Journal of the International Measurement Confederation, 2015, 76, 129-135.	5.0	3
50	Improved radiation thermometry measurement uncertainty through implementing a primary scale in an industrial laboratory. , 2015, , .		1
51	Traceable radiation thermometer calibration to ITS-90 above the silver point at the National Physical Laboratory. , 2015, , .		1
52	Experimental assessment of methods of dissemination of the thermodynamic temperature at the highest temperatures. , 2015, , .		0
53	Size-of-Source Effect Sensitivities in Radiometers. International Journal of Thermophysics, 2014, 35, 1391-1400.	2.1	4
54	Miniature Fixed-Point Cell Approaches for <i>In Situ</i> Monitoring of Thermocouple Stability. International Journal of Thermophysics, 2014, 35, 1223-1238.	2.1	7

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55	Thermodynamic Temperatures of High-Temperature Fixed Points: Uncertainties Due to Temperature Drop and Emissivity. International Journal of Thermophysics, 2014, 35, 1341-1352.	2.1	9
56	Compatibility of Materials for Use at High Temperatures with Wâ€“Re Thermocouples. International Journal of Thermophysics, 2014, 35, 1202-1214.	2.1	8
57	Development of High-Temperature Fixed Points of Unknown Temperature Suitable for Key Comparisons. International Journal of Thermophysics, 2014, 35, 467-474.	2.1	4
58	A European Roadmap for Thermometry. International Journal of Thermophysics, 2014, 35, 385.	2.1	9
59	The Euramet Metrology Research Programme Project Implementing the New Kelvin (InK). International Journal of Thermophysics, 2014, 35, 405-416.	2.1	28
60	A low-uncertainty measurement of the Boltzmann constant. Metrologia, 2013, 50, 354-376.	1.2	92
61	Highâ€“precision calibration of MRS thermometry using validated temperature standards: effects of ionic strength and protein content on the calibration. NMR in Biomedicine, 2013, 26, 213-223.	2.8	15
62	Construction of high-temperature fixed-point cells for thermodynamic temperature assignment. , 2013, , .		7
63	Bilateral ITS-90 comparison at WC-C peritectic fixed point between NIM and NPL. , 2013, , .		4
64	Assigning thermodynamic temperatures to high-temperature fixed-points. , 2013, , .		3
65	The IMERAPlus joint research project for determinations of the Boltzmann constant. , 2013, , .		5
66	Development of a new radiometer for the thermodynamic measurement of high temperature fixed points. AIP Conference Proceedings, 2013, , .	0.4	2
67	Twelve years of high temperature fixed point research: A review. AIP Conference Proceedings, 2013, , .	0.4	39
68	Progress report for the CCT-WG5 high temperature fixed point research plan. AIP Conference Proceedings, 2013, , .	0.4	13
69	Towards the development of high temperature comparison artifacts for radiation thermometry. , 2013, , .		5
70	Self-validating type C thermocouples to 2300 Å°C using high temperature fixed points. , 2013, , .		12
71	HiTeMS: A project to solve high temperature measurement problems in industry. , 2013, , .		12
72	Essential Measurement. Measurement and Control, 2013, 46, 90-96.	1.8	1

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73	Evaluation of methods for characterizing the melting curves of a high temperature cobalt-carbon fixed point to define and determine its melting temperature. <i>Metrologia</i> , 2012, 49, 189-199.	1.2	33
74	Step change improvements in high-temperature thermocouple thermometry. , 2012, , .		0
75	Improvements in the measurement of the immersion profile of water triple points using bushes. <i>Measurement Techniques</i> , 2012, 55, 442-447.	0.6	3
76	Primary Radiometry for the Mise-en-Pratique for the Definition of the Kelvin: The Hybrid Method. <i>International Journal of Thermophysics</i> , 2011, 32, 1-11.	2.1	23
77	An International Study of the Long-Term Stability of Metal-Carbon Eutectic Cells. <i>International Journal of Thermophysics</i> , 2011, 32, 1786-1799.	2.1	29
78	Calculation of the Temperature Drop for High-Temperature Fixed Points for Different Furnace Conditions. <i>International Journal of Thermophysics</i> , 2011, 32, 1773-1785.	2.1	15
79	Temperature effects of imperfectly formed metal-ingots in high temperature fixed point crucibles. <i>Measurement: Journal of the International Measurement Confederation</i> , 2011, 44, 738-742.	5.0	9
80	Investigations at INRIM on a Pd-C cell manufactured by NPL. <i>Metrologia</i> , 2011, 48, 241-245.	1.2	2
81	Estimation of the degree of equivalence of the ITS-90 above the silver point between NPL, NIM and CEM using high temperature fixed points. <i>Metrologia</i> , 2011, 48, 196-200.	1.2	12
82	New kelvin dissemination workshop held at NPL on 27-28 October 2010. <i>Metrologia</i> , 2011, 48, 68-69.	1.2	4
83	Comparative Study of Pt/Pd and Pt-Rh/Pt Thermocouples. <i>International Journal of Thermophysics</i> , 2010, 31, 1506-1516.	2.1	9
84	A Comparison of the ITS-90 Among NPL, NIM, and CEM, Above the Silver Point Using High-Temperature Fixed Points. <i>International Journal of Thermophysics</i> , 2010, 31, 1466-1476.	2.1	19
85	The Use of Thermowell Bushes at the Triple Point of Water for Improving Repeatability. <i>International Journal of Thermophysics</i> , 2010, 31, 1438-1443.	2.1	3
86	Practical Implementation of the Mise en Pratique for the Definition of the Kelvin Above the Silver Point. <i>International Journal of Thermophysics</i> , 2010, 31, 1779-1788.	2.1	60
87	The Roles of the Mise en Pratique for the Definition of the Kelvin. <i>International Journal of Thermophysics</i> , 2010, 31, 1795-1808.	2.1	34
88	Report of a Consensus Meeting on Human Brain Temperature After Severe Traumatic Brain Injury: Its Measurement and Management During Pyrexia. <i>Frontiers in Neurology</i> , 2010, 1, 146.	2.4	26
89	A systematic performance evaluation of brain and body temperature sensors using ultra-stable temperature references. <i>Journal of Medical Engineering and Technology</i> , 2010, 34, 192-199.	1.4	3
90	Calibration and validation of thermal imagers. <i>Quantitative InfraRed Thermography Journal</i> , 2009, 6, 133-147.	4.2	22

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91	Evaluation of the Pd-C eutectic fixed point and the Pt/Pd thermocouple. <i>Metrologia</i> , 2009, 46, 473-479.	1.2	29
92	Furnace uniformity effects on Re-C fixed-point melting plateaux. <i>Metrologia</i> , 2009, 46, 33-42.	1.2	8
93	Manufacturing of MC Eutectics and Reproducibility of Pt-C Eutectic Fixed Points using a Thermogauge Furnace. <i>International Journal of Thermophysics</i> , 2009, 30, 59-68.	2.1	3
94	A Roadmap for Thermal Metrology. <i>International Journal of Thermophysics</i> , 2009, 30, 1-8.	2.1	14
95	Reliability issues in human brain temperature measurement. <i>Critical Care</i> , 2009, 13, R106.	5.8	10
96	Chapter 2 Temperature Fundamentals. <i>Experimental Methods in the Physical Sciences</i> , 2009, 42, 29-71.	0.1	0
97	Optimizing Contact Thermometry High-Temperature Fixed-Point Cells ( $\sim 1,100^{\circ}\text{C}$ ) Using Finite-Element Analysis. <i>International Journal of Thermophysics</i> , 2008, 29, 250-260.	2.1	5
98	Optimizing the Implementation of High-Temperature Fixed Points through the Use of Thermal Modeling. <i>International Journal of Thermophysics</i> , 2008, 29, 261-270.	2.1	10
99	In-Field-of-View Thermal Image Calibration System for Medical Thermography Applications. <i>International Journal of Thermophysics</i> , 2008, 29, 1123-1130.	2.1	26
100	A Concerted International Project to Establish High-Temperature Fixed Points for Primary Thermometry. <i>International Journal of Thermophysics</i> , 2007, 28, 1976-1982.	2.1	74
101	Preparative Steps Towards the New Definition of the Kelvin in Terms of the Boltzmann Constant. <i>International Journal of Thermophysics</i> , 2007, 28, 1753-1765.	2.1	58
102	Thermodynamic temperature determinations of Co-C, Pd-C, Pt-C and Ru-C eutectic fixed-point cells. <i>Metrologia</i> , 2006, 43, S78-S83.	1.2	47
103	Metal (carbide)-carbon eutectics for thermometry and radiometry: a review of the first seven years. <i>Metrologia</i> , 2006, 43, R11-R25.	1.2	124
104	Traceability and calibration in temperature measurement: a clinical necessity. <i>Journal of Medical Engineering and Technology</i> , 2006, 30, 212-217.	1.4	23
105	New blackbody standard for the evaluation and calibration of tympanic ear thermometers at the NPL, United Kingdom. , 2004, , .		2
106	Uncertainty Budgets for Realization of ITS-90 by Radiation Thermometry. <i>AIP Conference Proceedings</i> , 2003, , .	0.4	24
107	Infrared ear thermometers versus rectal thermometers. <i>Lancet, The</i> , 2002, 360, 1882-1883.	13.7	3
108	High-quality blackbody sources for infrared thermometry and thermography between $\sim 40$ and $1000^{\circ}\text{C}$ . <i>Imaging Science Journal</i> , 2000, 48, 15-22.	0.5	32

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109	International comparison of radiation temperature scales among five national metrological laboratories using a transfer radiation thermometer. Metrologia, 1996, 33, 241-248.	1.2	13
110	Comparison of the ITS-90 using a transfer standard infrared radiation thermometer between seven EU national metrological institutes. Metrologia, 1996, 33, 197-206.	1.2	11
111	Methodologies and uncertainty estimates for T <sub>90</sub> measurements over the temperature range from 430 K to 1358 K under the auspices of the EMPIR InK2 project. Measurement Science and Technology, 0, , .	2.6	6