

FULL LIST OF PUBLICATIONS

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(H-index of 72, i10-index 215 & 21,761 citations from Google Feb 2021)

I. BOOKS, EDITED BOOKS & BOOK CHAPTERS

1. Book chapter: Guha P, Santra S and **Gardner JW** (2020) in *Semiconductor Gas Sensors* 2nd edition (Eds. R. Jaaniso et al.), Ch 15 pp465-487, Woodhead Publishing. "Integrated CMOS-based sensors for gas and odour detection" ISBN: 9780081025598
2. Book chapter: **Gardner JW** and Guha P (2020) in *Advanced Nanomaterials for Inexpensive Gas Microsensors*, Llobet (Ed) Ch7, pp125-141. Advanced Nanomaterials Series, Elsevier "CMOS based resistive and FET devices for smart gas sensors"
3. Book chapter: de Luca A, Udrea F, **Gardner JW** et al. (2016) in *Semiconductor Devices in Harsh Conditions*, Weide-Zaage and Chrzanowska-Jeske (Eds), Ch5, pp87-107, CRC Press, Delaware. "Sensors and Sensor Systems for Harsh Environment Applications"
4. Book chapter: Vincent TA, Wilson A, Hattersley JG, Chappell MJ, **Gardner JW** (2016) in *IWBBIO 2016*, LNBI 9656, pp. 13–21. Ortuño D and Rojas I (Eds), Springer International Publishing, Switzerland. DOI: 10.1007/978-3-319-31744-1_2
5. Book chapter: Pearce TC, Karout S, Capurro A, Racz Z, Cole M, **Gardner JW** (2013) in *Biomimetic and Biohybrid Systems*, Lepora NF et al (eds), Vol. 8064, pp 204-215, Springer, Berlin "Robust ratiometric infochemical communication in a neuromorphic synthetic moth"
6. Book chapter: Guha P, Santra S and **Gardner JW** (2013) in *Measurement, Instrumentation and Sensors Handbook*, Taylor and Francis, Ch 9 "CMOS integrated gas sensors"
7. Book chapter: Guha P, Santra S and **Gardner JW** (2013) in *Semiconductor Gas Sensors* (Eds. R. Jaaniso, Z. Weiguang and T. Kiang), Ch 15 "Integrated semiconductor sensors for gas and odour detection"
8. Book chapter: **Gardner JW**, Covington JA and Che Harun F (2012) in *Human Olfactory Displays and Interfaces: Odor Sensing and Presentation*, T. Nakamoto (Ed.), IGI Global, USA, Ch 12, pp257-274 "Electronic mucosa: a natural successor to the electronic nose system?"
9. Book chapter: Pearce TC, Sanchez-Montanes MA and **Gardner JW** 2009, *Springer series*, Ch5, pp75-92, "Improved odour detection through imposed biomimetic temporal dynamics"
10. Edited book: **Gardner JW** (2007) *Proc. of the 25th IASTED International Multi-conference Biomedical Engineering*, 13-15 Feb. 2007, IASTED, Canada, pp468. ISBN 978-0-88986-648-5
11. Authored book (Chinese edition): **Gardner JW**, Varadan VJ and Awadelkarim O (2006) *Microsensors, MEMS and Smart Devices*, Tsinghua University Press, Beijing, pp503. ISBN 7-302-08122-0.
12. Edited book (Chinese translation): Hesse J, **Gardner JW** and Göpel W (2005) *Sensors in Household Appliances*, Sensors Applications, Volume 5, Wiley-VCH, Weinheim, pp244. ISBN 7-5025-5446-7.
13. Book chapter: Brezmes J, Llobet E, Al-Khalifa S, Maldonado S and **Gardner JW**, in *Support Vector Machines: Theory and Applications*, Lipo W (Ed) "Support Vector Machine: Theory and

- Applications Chapter: Gas Sensing Using Support Vector Machines", Studies in Fuzziness and soft computing, Springer-Verlag, Berlin, ISBN 3-540-24388-7, June, 2005.
14. Book chapter: Dutta R, **Gardner JW** and Hines EL 2005 *Encyclopaedia of Sensors* (<http://www.aspbs.com/eos>), American Scientific Publishers, May 2005 "Object-orientated expert electronic nose system"
15. Edited book: **Gardner JW** and Yinon J (2004) *Electronic Noses and Sensors for the Detection of Explosives*, NATO Science Series II Mathematics, Physics and Chemistry – Vol.159, Kluwer, Dordrecht, pp324. ISBN 1-4020-2317-0 (hardbound) and 1-4020-2318-9 (paperback).
16. Edited book: Hesse J, **Gardner JW** and Göpel W (2004) *Sensors in Medicine and Health Care*, Sensors Applications, Volume 3, Wiley-VCH, Dordrecht, ISBN 3-527-29556-9.
17. Book chapter: **Gardner JW** in *Electronic Noses & Sensors for the Detection of Explosives* (Eds **JW Gardner** and J Yinon), NATO Science Series II Mathematics, Physics and Chemistry – Vol.159, Kluwer, Dordrecht, 2004, pp.1-28, ISBN 1-4020-2317-0 & ISBN 1-4020-2318-9. "Review of conventional electronic noses and their possible application to the detection of explosives"
18. Edited book: Pearce TC, Schiffman SS, Nagle HT, **Gardner JW** (2003) *Handbook of Machine Olfaction*, Wiley-VCH, Dordrecht, pp592. ISBN 3-527-30358-8.
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20. Edited book: Hesse J, **Gardner JW** and Göpel W (2003) *Sensors in Household Appliances*, Sensors Applications, Volume 5, Wiley-VCH, Weinheim, pp287. ISBN 3-527-30362-6.
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22. Book chapter: **Gardner JW** and Cole M in *Handbook of Machine Olfaction* (Eds. TC Pearce, S Schiffman, T Nagle T, JW Gardner), Wiley-VCH, pp.231-266, ISBN 3-527-30358-8, January 2003. "Integrated e-nose and Microsystems for chemical analysis"
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27. Authored book: **Gardner JW**, Varadan VJ and Awadelkarim O (2001) *Microsensors, MEMS and Smart Devices*, John Wiley & Sons Ltd, Chichester, pp552. ISBN 0-471-86109-X.
28. Book chapter: **Gardner JW** and Chetwynd DG 2001" in *Metrology and Properties of Engineering Surfaces*, eds E Mainsah, JA Greenwood, DG Chetwynd, Kluwer Academic Publishers, London, Ch 11, pp361-386, ISBN 0-412-80640-1, "Thin-film conducting polymer bearings".
29. Book chapter: Al-Khalifa S, **Gardner JW** and Maldonado-Bascón S 2001 in *Sensors and their Applications XI*, (Eds K.T.V. Grattan & S.H. Khan), Series in Sensors, (Series Ed. B.E. Jones), IOP Publishing, Bristol, pp.103-108, ISBN 0-7503-0821-4. "Rapid multicomponent analysis using a thermally-modulated resistive gas microsensor and a discrete wavelet transform".
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33. Book chapter: Boilot P, Hines EL, John S, Mitchell J, Lopez F, **Gardner JW**, Llobet E, Hero M, Fink C and Gongora M 2000 in **Gardner JW and Persaud KC (eds.)** *Electronic Noses and Olfaction*, IOP Publishing Ltd, Bristol, pp189-196, ISBN 0-7503-0764-1. "Detection of bacteria causing eye infections using a neural network based electronic nose system".
34. Book chapter: Covington JA, **Gardner JW**, Toh C, Bartlett PN, Briand D and de Rooij NF 2000 in **Gardner JW and Persaud KC (eds.)** *Electronic Noses and Olfaction*, IOP Publishing Ltd, Bristol, pp35-42, ISBN 0-7503-0764-1. "Characterisation of an electrodeposited conducting polymer FET array for vapour and odour sensing".
35. Book chapter: Boilot P, Hines EL and **Gardner JW** 2000 in *Sensors Update*, vol. 8, Wiley-VCH Verlag GmbH, Weinheim, pp.73-94, ISBN 3-527-30258-1 "Knowledge extraction from electronic nose data sets using hybrid neuro-fuzzy systems".
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41. Book chapter: Pike AC, Welham CJ and **Gardner JW** 1998 *McGrawHill Yearbook of Science and Technology* "Microsensors"
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44. Book chapter: Al-Khalifa S, **Gardner JW** and Craine JF 1997 in *Sensors and Their Applications VIII* (eds. A T Augousti and N M White), p. 89-94 "Characterisation of a thermal wave microsensor for the intelligent analysis of atmospheric gases"
45. Book chapter: **Gardner JW** and Hines EL 1996 in *Handbook of Biosensors: Medicine, Food & the Environment* (ed. E. Kress-Rogers) "Pattern analysis techniques" Ch. 27 pp633-652
46. Book chapter: Bartlett PN, Beriet C, Chetwynd DG, **Gardner JW** and Liu X 1996 in *The Mechanics of Thin Film Coatings* (eds. PH Gaskell, MD Savage and JL Summers), World Scientific, Singapore "Tribological properties of conducting polymers for application in Nanotechnology"
47. Book chapter: **Gardner JW** and Pike A 1995 in *Sensors and their Applications VII*, ed. AT Augousti, IOP Publishing, Bristol, pp58-59, "Nanoengineered dual sensor device for intelligent monitoring of gases"
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49. Authored book: **Gardner JW** (1994) *Microsensors: Principles and Applications*, J. Wiley & Sons Ltd, Chichester, pp 320. ISBN 0-471-94135-2.
50. Book chapter: Larkin AB, Hines EL, Thomas SM and **Gardner JW** 1994 in *Workshop on Neural Network Applications and Tools*, eds. PJ Lisboa & MJ Taylor, IEEE Press, pp6-10, "Supervised learning using the vector memory array method"
51. Book chapter: Hines EL, Gianna CC and **Gardner JW** 1993 *Neural Networks: Techniques & Applications* eds. PJ Lisboa and MJ Taylor (Ellis Horwood) Ch. 8 "Neural network based electronic nose using constructive algorithms"
52. Edited book: **Gardner JW** and Bartlett PN (1992) *Sensors & Sensory Systems for an Electronic Nose*, Kluwer Academic Publishers, Dordrecht, NATO ASI Series: Applied Science Vol. 212, pp327. ISBN 0-7923-1693-2.
53. Book chapter: Dodd GH, Bartlett PN and **Gardner JW** 1992 in *Sensors & Sensory Systems for an Electronic Nose* eds. J W Gardner and P N Bartlett (Dordrecht: Kluwer Academic Publishers) NATO ASI Series E: Applied Science **Vol. 212** Ch. 1 pp. 1-12 "Odours, the stimulus for an electronic nose"
54. Book chapter: Bartlett PN and **Gardner JW** 1992 in *Sensors & Sensory Systems for an Electronic Nose* eds. J W Gardner and P N Bartlett (Dordrecht: Kluwer Academic Publishers) NATO ASI Series E: Applied Science **Vol. 212** Ch. 4 pp. 31-52 "Odour sensors for an electronic nose"
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56. Book chapter: Olafsson R, Martinsdottir E, Olafsdottir G, Sigfusson TI and **Gardner JW** 1992 in *Sensors & Sensory Systems for an Electronic Nose* eds. J W Gardner and P N Bartlett (Dordrecht: Kluwer Academic Publishers) NATO ASI Series E: Applied Science **Vol. 212** Ch. 15 pp. 257-272 "Monitoring of fish freshness"
57. Book chapter: **Gardner JW** and Bartlett PN 1991 in *Techniques & Mechanisms in Gas Sensing* eds. P Moseley, J Norris, D Williams (Bristol: Adam Hilger) pp. 347-380 "Pattern recognition in gas sensing"
58. Book chapter: Schild D and **Gardner JW** 1991 In *Cell to Cell Signals in Plants and Animals*, eds. V Neuhoﬀ & J Friend NATO ASI Series, Vol. H51 (Springer-Verlag: Berlin) pp. 96-117 "Detection and coding of chemical signals: A comparison between artificial & biological systems"
59. Book chapter: **Gardner JW** and Bartlett PN 1991 in *Nanotechnology* eds. DJ Whitehouse and K Kawata (Bristol: Adam Hilger) pp. 19-32 "Potential applications of electropolymerised thin organic films in nanotechnology"
60. Book chapter: Corcoran P, Shurmer HV and **Gardner JW** 1991 in *Sensors: Systems & Their Applications* ed. KV Grattan (Bristol: Adam Hilger) pp. 99-105 "Technological aspects of the design and performance of metal oxide odour sensors"
61. Book chapter: **Gardner JW** 1991 in *From Instrumentation to Nanotechnology* eds. JW Gardner and HT Hingle (London: Gordon & Breach) pp. 119-136 "Recent advances in solid-state microsensors"
62. Book chapter: **Gardner JW** and Bartlett PN 1991 in *Advances in Nanoscale Physics Electronics and Engineering Series: Nanotechnology* eds. DJ Whitehouse and K Kawata (London: Adam Hilger) pp. 19-32 "Potential applications of electropolymerised thin organic films in nanotechnology"
63. Edited book: **Gardner JW** and Hingle HT (1991) *From Instrumentation to Nanotechnology*, Gordon and Breach Science Publishers, Philadelphia, pp336. ISBN 2-88124-794-6.
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65. Book chapter: **Gardner JW**, Bartlett PN, Dodd GH and Shurmer HV 1990 *Chemosensory Information Processing*, ed. D Schild (Berlin: Springer-Verlag) pp. 131-173 "The design of an artificial olfactory system"

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67. Thesis: **Gardner JW** 1983 *Charging of grains in discontinuous metal films*, PhD Thesis, University of Cambridge, UK.

II. REFEREED JOURNAL ARTICLES

68. Wardana I, **Gardner JW**, Fahmy S 2021 *Sensors* **21** 1064 "Optimising deep learning at the edge for accurate hourly air quality prediction"
69. Esfahani S, Specht J, Jolly G, Cole M, **Gardner JW** 2020 *MDPI Proceedings* **3** x. "Solid mounted resonator for biomedical application"
70. Esfahani S, Rollins P, Specht J, Cole M, **Gardner JW** 2020 *IEEE Sensors* "Smart city battery operated indoor air quality monitoring system"
71. Esfahani S, Shanta M, Specht J, Xing Y, Cole M and **Gardner JW** 2020 *IEEE Sensors* "Wearable IoT electronic nose for urinary incontinence detection"
72. Esfahani S, Specht J, Jolly G, Cole M, **Gardner JW** 2020 *MDPI Proceedings* **56** 11 "Solidly mounted resonators for biomedical applications"
73. Xing Y, Vincent TA, Fan H, Schaffernicht E, Lilienthal AJ, Cole M, **Gardner JW** 2019 *IEEE Sensors Journal* **19** 12418-12431. "FireNose on mobile robot in harsh environments"
74. Xing Y, Urasinska-Wojcik, **Gardner JW** 2019 *Sens. Act. B* "Plasmonic enhanced CMOS non-dispersive infrared gas sensor for low-cost application"
75. Gardner EL, Vincent TA, Jones RG, **Gardner JW**, Coull J, de Luca A, Udrea F 2019 *IEEE Sensors Journal* **19** 2991-2998 "MEMS thermal flow sensors – an accuracy investigation"
76. Vincent TA, Xing Y, Cole M, **Gardner JW** 2019 *Sens. Act. B* **279** 351-360 "Investigation of response of high bandwidth MOX sensors to gas plumes for application on a mobile robot in hazardous environments"
77. Xing Y, Vincent TA, Cole M, **Gardner JW** 2019 *Sensors* **19** 1180 "Real-time thermal modulation of high bandwidth MOX gas sensors for mobile robot applications"
78. Ghosh R, Gardner JW, Guha P 2019 *IEEE Trans on Electron Devices* **66** 3254-3264 "Air pollution monitoring using near room temperature resistive gas sensors: a review"
79. Urasinska-Wojcik B and **Gardner JW** 2018 *IEEE Sensors Journal* **18** 3502-3508 "H₂S sensing in dry and humid H₂ environment with p-type CuO thick-film gas sensors"
80. Vincent TA, Xing Y, Cole M, **Gardner JW** 2018 *MDPI Proceedings* **2** 858 "Thermal modulation of a high bandwidth gas sensor array in real-time for application on a mobile robot"
81. Xuan W, Cole M, **Gardner JW**, Thomas S, Villa-Lopez F, Wang X, Dong S, Luo J 2017 *J. Micromech. Microeng.* **27** 055017 "A film bulk acoustic resonator oscillator based humidity sensor with graphene oxide as the sensitive layer"
82. Urasinska-Wojcik B and **Gardner JW** 2017 *IEEE Sensors Letters* Vol. 1 No.4 "Identification of H₂S impurity in hydrogen using temperature modulated metal oxide resistive gas sensors with a novel signal processing technique"
83. Urasinska-Wojcik B, Vincent TA, Chowdhury MF, **Gardner JW** 2017 *Sens. Act. B* **239** 1051-1059 "Ultrasensitive WO₃ gas sensors for NO₂ detection in air and low oxygen environment"
84. **Gardner JW** and Vincent TA 2016 *Sensors* **16** 947 "Electronic Noses for Well-Being: Breath Analysis and Energy Expenditure"
85. Vincent TA and **Gardner JW** 2016 *Sens. Act. B* **236** 954-964 "A low cost MEMS based NDIR system for the monitoring of carbon dioxide in breath analysis at ppm levels"
86. Santra S, Sinha AK, de Luca A, Ali SZ, Udrea F, Guha PK, Ray SK, **Gardner JW** 2016 *Nanotechnology* **27** Article 125502 DOI: 10.1088/0957-4484/27/12/125502 "Mask-less deposition of Au-SnO₂ nanocomposites on CMOS MEMS platform for ethanol detection"

87. De Luca A, Santra S, Ghosh R, Ali SZ, **Gardner JW**, Guha PK, Udrea F 2016 *Nanoscale* **8** 4565-4572 “Temperature-modulated graphene oxide resistive humidity sensor for indoor air quality monitoring”
88. Thomas S, Cole M, Villa-Lopez FH, **Gardner JW** 2016 *Sens. Act. A* **244** 138-145 “High frequency surface acoustic wave resonator-based sensor for particulate matter detection”
89. Thomas S, Villa-Lopez F, Theunis J, Peters J, Cole M, **Gardner JW** 2016 *IEEE Sensors Journal* **16** 2282-2289 “Particle sensor using solidly mounted resonators”
90. Villa-Lopez F, Rughoobur G, Thomas S, Flewitt AJ, Cole M, **Gardner JW** 2016 *Measurement Science and Technology* **27** Article 025502 “Design and modelling of solidly-mounted resonators for low-cost particle sensing”
91. Vincent TA, **Gardner JW**, Chappell MJ, Hattersley JG, Wilson A 2016 *Procedia Engineering* **168** 129-132 “Measurement of energy expenditure on a smartphone using a handheld breath analyser”
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93. Chowdhury MF, Hopper R, Ali SZ, **Gardner JW**, Udrea F 2016 *Procedia Engineering* **168** 1204-1207 “MEMS infrared emitter and detector for capnography applications”
94. Ali SZ, de Luca A, Hopper R, Boual S, **Gardner JW**, Udrea F 2015 *IEEE Sensors Journal* **15** 6775-6782 “A low-power, low-cost infra-red emitter in CMOS technology”
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99. De Luca A, Cole M, Hopper R, Boual S, Warner J, Robertson A, Ali Z, Udrea F and Gardner JW 2015 *Applied Physics Letters* **106**, 194101 “Enhanced spectroscopic gas sensors using in-situ grown carbon nanotubes”
100. Olsson SB, Challiss RAJ, Cole M, Gardeniers JG, **Gardner JW**, Guerrero A, Hannson BS and Pearce TC 2015 *Bioinspiration & Biomimetics* **10** (4) 043001 “Development of an insect-based infochemical communications technology”
101. Cole M, Spulber I and **Gardner JW** 2015 *Sens. Actuators B: Chem.* **207** 1147-1153 “Surface acoustic wave electronic tongue for robust analysis of sensory components”
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103. de Luca A, Cole MT, Hopper RH, Ali SZ, Udrea F, **Gardner JW** and Milne WI 2014 *Procedia Engineering* “SOI CMOS MEMS infra-red thermal source with carbon nanotubes coating”
104. Hopper R, Ali SZ, Chowdhury MF, Boual S, de Luca A, **Gardner JW** and Udrea F 2014 *Procedia Engineering* “A CMOS-MEMS thermopile with an integrated temperature sensing diode for Mid-IR thermometry”
105. Vincent TA, Wilson A, Hattersley JG, Chappell MJ and **Gardner JW** 2014 *Procedia Engineering* “Design and modelling of a portable breath analyser for metabolic rate measurement”
106. Thomas S, Cole M, de Luca A, Torrisi F, Ferrari AC, Udrea F and **Gardner JW** 2014 *Engineering Procedia* “Graphene-coated Rayleigh SAW resonators for NO₂ detection”
107. Pearce TC, Karout S, Racz Z, Capurro A, Gardner JW and Cole M 2013 *Frontiers in Neuroscience* **7** 119 1-17 “Rapid processing of chemosensor transients in a neuromorphic implementation of the insect macroglomerular complex”
108. Guha PK, Santra S, Covington J, Udrea F, **Gardner JW** *Sensors and Actuators B* “ZnO nanowires based sensors grown on fully processed SOI CMOS substrate” at press

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110. Falconi C, di Natale C, Martinelli E, d’Amico A, Zampetti E, **Gardner JW**, van Vliet C 2012 *Sensors and Actuators B* **174** 577-585 “1/f noise and its unusual high-frequency deactivation at high biasing currents in carbon black polymers with residual 1/f^γ noise and a preliminary estimation of the average trap energy”
111. Che Harun FK, Covington JA and **Gardner JW** 2012 *IET Nanobiotechnology* **6** 45-51 “Mimicking the biological olfactory system: a portable electronic mucosa”
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113. Vivancos J, Rácz Z, Cole M, **Gardner JW** 2012 *Sensors and Actuators B* **171-172** 469-477 “Surface acoustic wave based analytical system for the detection of liquid detergents”
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395. Udrea F, Ali SZ and **Gardner JW**, "CMOS micro-hotplate array design for nanomaterial-based gas sensors" *Proceedings of IEEE Conference CAS*, 13-18 October, Romania, 2008, pp143-146.
396. Best Poster Award: Santra S, Ali SZ, Guha PK, Udrea JW, Gardner JW and Milne WI "Carbon nanotube gas sensor integrated on CMOS substrate" *Cambridge CNT Symposium*, 11 December, Cambridge, 2008.
397. **Gardner JW**, Covington JA, Tan SL and Pearce TC *GOSPEL Workshop on Bio-inspired Signal Processing, Barcelona, Spain, 24-26 January 2007*, "A biologically-inspired artificial olfactory mucosa"
398. **Gardner JW**, Apostolidou A, Cole M, Dowson C, Edmunds S, and Sehra G, *Proc. Biomedical Engineering 2007*, Austria, Feb 2007. "Towards a low-cost optical biosensor system for biomedical immunoassay applications"
399. Cole M, Mutukwa SS, Briand D, de Rooij NF and **Gardner JW** *Proceedings of ISOEN, St. Petersburg, Russia, 3-5 May 2007* "SH-SAW dual delay line based e-tongue system with improved discrimination capabilities"
400. **Gardner JW**, Tan SL, Covington JA and Pearce TC, *Technical Digest of Transducers and Eurosensors 2007*, pp 2465-2467, Lyon, France, June 10-14, 2007 "Enhanced discrimination of complex odours based upon spatio-temporal signals from a micro-mucosa"
401. **Gardner JW** and Taylor JE, *Technical Digest of Transducers and Eurosensors 2007*, pp 2473-2476, Lyon, France, June 10-14, 2007 "Novel convolution based signal processing techniques for a simplified artificial olfactory mucosa"
402. Tan SL, Covington JA, **Gardner JW** and Pearce TC, *AsiaSim 2007*, Seoul, Korea, October 10-12, 2007 "Finite element simulation of biomimetic olfactory microsystem for spatio-temporal signal generation"
403. Iwaki T, Covington JA and **Gardner JW**, *Proc. of IEEE Sensors 2007 conference*, pp 1229-1232, Atlanta, USA, October 28-21, 2007 "Identification of vapours using a single carbon black/polymer composite sensor and a novel temperature modulation technique"
404. Che Harun FK, King PH, Covington JA and **Gardner JW**, *Proc. of IEEE Sensors 2007 conference*, pp 1361-1363, Atlanta, USA, October 28-21, 2007 "Novel gas chromatographic microsystem with very large sensor arrays for advanced odour discrimination"
405. Udrea F, Maeng S, **Gardner JW** et al., *Proc. of IEEE Electron Devices Meeting*, pp 831-834, Washington DC, USA, December 9-12, 2007 "Three technologies for a smart miniaturized gas sensor: SOI CMOS, micromachining and CNTs – challenges and performance"
406. **Gardner JW**, Beeby L, Chappell M, Udrea F, Yates J and Dowson CG, *Proc. of the 24th IASTED International Multi-conference Biomedical Engineering*, 15-17 Feb. 2006, "Identification of staphylococcus aureus infections by volatile chemical headspace analysis"
407. Invited Paper: **Gardner JW**, CAPE lecture series, University of Cambridge, UK, 31 March 2006, "Microsensors and MEMS for chemical and biological detection"
408. Covington JA, Tan SL, Pearce TC, Hamilton A and **Gardner JW**, *Proc. of IET Seminar on MEMS Sensors & Actuators*, 27-28 April 2006, London, UK, 107-112 "Towards a truly biomimetic olfactory microsystem: an artificial olfactory mucosa"
409. Koickal TJ, Hamilton A, Pearce TC, Tan SL, Covington JA and **Gardner JW**, *Proc. IEEE Circuits & Systems Symposium (ISCAS 2006)*, May 2006, "Analog VLSI design of an adaptive neuromorphic chip for olfactory systems"

410. Keynote Paper: **Gardner JW**, *Euroensors XX, Gothenberg, Sweden, Sept. 2006*. “Technologies for chemical sensors and microsystems”
411. **Gardner JW**, Covington JA, Tan SL, and Pearce TC, *Euroensors XX, Gothenberg, Sweden, Sept. 2006*. “A biologically inspired artificial olfactory mucosa”
412. Guha PK, Ali SZ, Udrea F, Milne WI, Iwaki T, Covington JA and **Gardner JW**, *Euroensors XX, Gothenberg, Sweden, Sept. 2006*. “Novel design and characterisation of SOI CMOS micro-hotplates for gas sensors”
413. Khawaja J, Cole M, **Gardner JW**, *Euroensors XX, Gothenberg, Sweden, Sept. 2006*. “Gold nanoparticle CMOS sensor for VOC detection”
414. Iwaki T, Covington JA, **Gardner JW**, Udrea F, Blackman CS and Parkin IP, *Proc. IEEE Sensors Conference, Korea, Oct. 2006*. “SOI-CMOS based single crystal silicon micro-heaters for gas sensors”.
415. Ali SZ, Guha PK, Lee CC, Udrea F, Milne WI, Iwaki T, Covington JA and **Gardner JW**, *Proc. IEEE Sensors Conference, Korea, Oct. 2006*. “High temperature SOI CMOS tungsten micro-heaters”
416. **Gardner JW**, Cole M, Dowson CG, Newton P and Sehra G, *IASTED International Conference on Biomedical Engineering, Innsbruck, Austria, 16-18 Feb 2005* “Smart acoustic sensor for the detection of bacteria in milk”
417. Pearce TC, Covington JA, Tan SL, **Gardner JW**, Koickal TJ and Hamilton A, *IEEE Neural Engineering Conference, Washington, USA 16-19 March 2005* “Silicon based neuromorphic implementation of the olfactory bulb”
418. Acevedo J, Maldonado S, Al-Khalifa S, Gil P, and **Gardner JW**, *11th International Symposium on Olfaction and Electronic Noses, Barcelona, Spain, 13-15 April 2005* “Design of a programmable, portable low cost electronic nose”
419. Pardo M, Sberveglieri G and **Gardner JW**, *11th International Symposium on Olfaction and Electronic Noses, Barcelona, Spain, 13-15 April 2005* “Benchmarking feature selection for e-noses”
420. Invited Paper: **Gardner JW**, *IEE Seminar on MEMS Sensor Technologies, London, UK 25 April 2005*, “Smart tongue”
421. Koickal TJ, Tan SL, Hamilton A, Covington JA, **Gardner JW** and Pearce TC, *IEEE Instrumentation Measurement Conference, Ottawa, Canada, 17-19 May 2005* “A smart interface circuit to ameliorate the loss of measurement range in chemical microsensor arrays”
422. Iwaki T, Covington JA, Udrea F, Ali SZ, Guha PK and **Gardner JW**, *Journal of Physics: Conference Series 15 (2005) 27-32*, “Design and simulation of resistive SOI CMOS micro-heaters for high temperature gas sensors”
423. Leonte I, Sehra G, Cole M, Hesketh P and **Gardner JW**, *Proc. of Euroensors XIX, Barcelona, Spain, 11-14 Sept. 2005* “High frequency SH-SAW devices for liquid sensing”
424. Pardo M, Sberveglieri G and **Gardner JW**, *Proc. 4th IEEE Conf. on Sensors, Irvine, California, USA, Oct. 31 – 3 Nov. 2005*, “Feature selection for high dimensionality data in chemical sensing”
425. Cole M, **Gardner JW**, Leonte I, Sehra G, Noh HS and Hesketh PJ, *Proc. 4th IEEE Conf. on Sensors, Irvine, California, USA, Oct. 31 – 3 Nov. 2005*, “Voltage modulated SAW microtrap system: smart assaying of biomaterials”
426. Tan SL, Covington JA, and **Gardner JW**, *SPIE Meeting on Smart Sensors and Materials, San Diego, March 2004*. “Ultra-fast chemical sensing microsystem employing resistive nanomaterials”
427. **Gardner JW**, Garcia-Guzman J, and Cole M *SPIE Meeting on Smart Sensors and Materials, San Diego, March 2004*. “Smart ASIC chip for vapour detection based upon carbon black/polymer composite materials”
428. Invited Tutorial: **Gardner JW**, *3rd NOSE Short Course on Fundamentals of Signal and Data Processing, 21-26 March 2004*. “Feature selection techniques”
429. Sun MC, Chetwynd DG, and **Gardner JW**, *Proc. of Euspen 2004, Glasgow, Scotland, May-June 2004* “A simple microtensometer for polymeric microparts”

430. Covington JA, LLaudet E, Dale N and **Gardner JW**, *8th World Congress on Biosensors: Biosensors 2004*, Granada, Spain 24-26 May 2004. “A bio-probe with integrated electrode array for in-situ chemical measurement”.
431. Pearce TC, Koickal TJ, Fulvi-Mari C, Covington JA, Tan S, **Gardner JW** and Hamilton A, *Brain Inspired Cognitive Systems*, Aug 29-Sept 1 2004, Stirling, Scotland. “Silicon-based neuromorphic olfactory pathway implementation”
432. Leonte I, Hunt M, Sehra G, Cole M and **Gardner JW**, *Proceedings of IEEE Postgraduate Student Colloquium*, Manchester, September 2004, p. 47-52 “SAW bioliquids sensor with RF interrogation”
433. Invited Paper: **Gardner JW**, Workshop on “From chemical communication to olfaction”, Delwart Foundation, Louvain, Belgium, Oct 22-24 2004, “State-of-the-art electronic nose technology and silicon implementation”
434. Invited Paper: **Gardner JW**, Seminario Sensores Inteligentes para a deteccao e separacao de rolhas com aromas estranhos, Portugal, Sept 23 2004 “Application of smart sensors in the cork industry”
435. Yates JWT, Chappell MJ and **Gardner JW**, *Proceedings of IEEE Sensors Conference*, Vienna, Austria, 24-27 Oct 2004, p. 1253-1256 “Phenomena based dynamic model of carbon black polymer composite materials”
436. Leonte I, Hunt MS, Sehra G, Cole M, **Gardner JW**, Noh HS, Hesketh PJ, *Proceedings of IEEE Sensors Conference*, Vienna, Austria, 24-27 October 2004, p. 919-922 “Towards a wireless microsystem for liquid analysis”
437. Tan SL, Covington JA, **Gardner JW** and Hesketh PJ, *Proceedings of IEEE Sensors Conference*, Vienna, Austria, 24-27 Oct 2004, p. 1171-1174 “Ultra fast/ low volume odour delivery package for chemical microsystems”
438. Dutta R, **Gardner JW** and Hines EL, *Proceedings of IEEE Sensors Conference*, Vienna, Austria, Sept. 2004, p. 324-326 “ENT bacteria classification using a neural network based Cyrano 320 electronic nose”
439. Ali SZ, Gonzalez W, **Gardner JW** and Udrea F, *Proceedings of IEEE Semiconductor Conference 2004*, Sinaia, Romania, 4-6 October 2004, vol. 2, p. 351-354 “Analysis of high temperature SOI microhotplates”
440. **Gardner JW**, Boilot P, and Hines EL, *Proc. ISOEN, Latvia, 25-27 June 2003*. “Enhancing e-nose performance by data fusion and sensor selection”
441. Yates JW, **Gardner JW**, Chappell MJ, Bolt F, Beeby L and Dowson C, *IFAC*, 2003. “Chemical sensor screening of blood samples: robust analysis via data set reduction”
442. **Gardner JW**, Covington JA, Shaw G, Parkin I, and Udrea F, *Proc. Eurosensors XVII, Portugal, 21-24 September 2003*. “SOI gas sensors with low temperature CVD films”
443. Sehra G, Cole M and **Gardner JW**, *Proc. Eurosensors XVII, Portugal, 21-24 September 2003*. “Miniature taste sensing system based on dual SAW sensor device”
444. Tamadoni R, Bartlett PN, Chetwynd DG, and Gardner JW, *Proc. Eurosensors XVII, Portugal, 21-24 September 2003*. “Investigation of a conducting polymer O-ring seal for microvalves”
445. Invited Paper: **Gardner JW**, *Nato Advanced Research Workshop on Electronic Noses and Explosive Detection*, Coventry, 1-2 October 2003. “Review of electronic nose technology”
446. Covington JA, Tan SL, Hamilton A, Koickal T, Pearce TC, and Gardner JW, *Proc. IEEE Sensors 2003 Conference*, Canada, 22-24 October 2003. “Combined smart chemoresistive/FET sensor array”
447. Invited Tutorial: **Gardner JW**, *IEEE Sensors 2003 Conference, Canada, 22-24 October 2003*. “Electronic Noses: towards a nose-on-a-chip”
448. Invited Talk: **Gardner JW**, Georgia Institute of Technology, Atlanta, USA, September 2003. “Biosensors, Electronic Noses and Electronic Tongues”

449. Fang Q, Chetwynd DG, **Gardner JW**, Toh C, Bartlett PN *E_MRS-2002, Spring Meeting, Symposium Q: Current Trends in Nanotechnologies, 2002*, “Investigation of conducting polymers as microvalve seals”
450. Invited Paper: **Gardner JW** *Ist NOSE II Short Course, 24 Feb - 1 Mar, 2002*, “Applications of electronic noses”
451. Invited Paper: **Gardner JW** *Ist NOSE II Short Course, 24 Feb - 1 Mar, 2002*, “Market aspects”
452. Government report: *A Strategic Framework for 2015, Foresight Publication, DTI, March 2002*. DTI Pub 6030/3k/03/02/NP. URN 02/808
453. **Gardner JW** *Public Consultation Document, DTI Conference Centre, 14 March 2002*, “Sensors for trends for monitoring the environment, industrial health and safety”
454. Bartlett PN, Guerin S, Marwan J, **Gardner JW**, Lee SM, Willett MJ, LeClerc SA *Proc. Symp. Microfabricated Systems & MEMS, Electrochemical Society, Philadelphia, May 2002*, “A micromachined planar pellistor using an electrochemically deposited nanostructured catalyst”
455. Bartlett PN, Guerin S, Marwan J, **Gardner JW**, Lee SM, Willett MJ, LeClerc SA *Proc. Symp. Microfabricated Systems & MEMS, Electrochemical Society, Philadelphia, May 2002*, “Sensors for trends for monitoring the environment, industrial health and safety”
456. Cole M, Sehra GS, **Gardner JW**, Varadan VJ *Proc. IEEE Sensors 2002, Florida, 12-14 June 2002*, “Fabrication and testing of smart tongue devices for liquid sensing”.
457. Covington JA, Udrea F, **Gardner JW** *Proc. IEEE Sensors 2002, Florida, 12-14 June 2002*, “Resistive gas sensor with integrated MOSFET micro hot-plate based on an analogue SOI CMOS process”.
458. Invited Paper: **Gardner JW**, Cole M, Udrea F *Proc. IEEE Sensors 2002, Florida, 12-14 June 2002*, “CMOS gas sensors and smart devices”.
459. Udrea F, Liu CC, Covington JA and **Gardner JW** *Proc. 9th Int. Meeting on Chemical Sensors, Boston, 7-10 July 2002*, “Development of smart gas sensors using SOI technology and embedded micro-FET heaters”.
460. Leclerc SA, Willett MJ, Lee SM, **Gardner JW**, Marwn J and Bartlett PN *Proc. 9th Int. Meeting on Chemical Sensors, Boston, 7-10 July 2002*, “Optimisation of mesoporous catalysts for combustible gas sensor applications”.
461. Leclerc SA, Willett MJ, Lee SM, **Gardner JW**, Marwn J and Bartlett PN *Proc. 9th Int. Meeting on Chemical Sensors, Boston, 7-10 July 2002*, “Novel combustible gas sensors employing micromachined silicon substrates and nanostructured catalysts”.
462. Cole M, **Gardner JW** and Bartlett PN *Proc. 9th Int. Meeting on Chemical Sensors, Boston, 7-10 July 2002*, “Integrated CMOS resistive ratiometric smart devices for odour and vapour sensing”.
463. Keynote Paper: **Gardner JW** *Proc. 9th Int. Meeting on Chemical Sensors, Boston, 7-10 July 2002*, “Electronic noses: from macro to nano scaled devices”.
464. Cole M, Guzman G and **Gardner JW** *Proc. Eurosensors XVI, Prague, September 2002*, “Smart ratiometric ASIC chip for a palm-top VOC monitor”.
465. Lu CC, Covington JA, Udrea F, **Gardner JW** *Proc. Eurosensors XVI, Prague, 15-18 September 2002*, “Electro-thermal characterisation of high-temperature smart gas sensors in SOI technology”.
466. Sehra G S, Covington JA, Cole M, and **Gardner JW** *Proc. 9th International Symposium on Olfaction and Electronic Nose, Rome, 29 September – 2 October 2002, eds A d’Amico and C di Natale*, “Combined electronic nose/tongue for liquid analysis”.
467. Invited Paper: **Gardner JW** *Proc. NOSE II Workshop, Rome, 3-4 October 2002*, “An overview of the electronic nose market”.
468. Invited Talk: **Gardner JW** *Cambridge Physical Society Seminar Series, Cavendish Laboratory, Cambridge, UK, November 2002*, “Electronic noses: from macroscale to nanoscale devices”
469. **Gardner JW** *Advances in Sensor Technologies Symposium, Warwick University, February 2001* “Advances in Microsensors and MEMS”
470. Invited Talk: **Gardner JW**, *Electrochemical Seminar, Southampton University, March 2001*, “Micromachined structures for chemical applications”

471. Lu C-C, Udrea F, **Gardner JW**, Setiadi D, Dogaru T, Tsai TH and Covington JA, *Proc. of SPIE*, **4408**, pp.86-95, (2001). “Design and coupled-effect simulations of CMOS micro gas sensors built on SOI thin membranes”.
472. Cole M, **Gardner JW** and Bartlett PN *Proc. ISOEN 8, Washington DC, USA, 25-28 March 2001* “Low-drift odour ratiometric resistive elements for analogue CMOS smart sensors”
473. Fang Q, Chetwynd DG and **Gardner JW** *2nd Euspen Conference, May, 2001* “Tensile properties of conducting polymer fibres”
474. Llobet E, Brezmes J, Ionescu R, Vilanova X, Al-Khalifa S, **Gardner JW**, Barsan N and Corrieg X *Technical Digest of Transducers 01, Munich, 10-14 June 2001* “Wavelet transform and fuzzy ARTMAP based pattern recognition for fast gas identification using a micro-hotplate gas sensor”
475. **Gardner JW**, Lee SM, Bartlett PN, Guerin S, Briand D, de Rooij NF *Technical Digest of Transducers 01, Munich, 10-14 June 2001* “Silicon planar microcalorimeter employing nanostructured films”
476. **Gardner JW**, Covington JA, Udrea F, Dogaru T, Lu C-C and Milne W *Technical Digest of Transducers 01, Munich, 10-14 June 2001* “SOI-based micro-hotplate microcalorimeter gas sensor with integrated BiCMOS transducer”
477. Keynote Paper: **Gardner JW** and Cole MV *5th Int. Conf. on Breath Odor, Tokyo, 1-2 July 2001* “Medical applications of electronic nose technology”
478. Invited Paper: Varadan VK and **Gardner JW** *8th Annual International Symposium on Smart Structures and Materials: Smart Electronics and MEMS, 4-8 March, Newport Beach, California, USA, SPIE code no.4334-48, (2001).* “Smart tongue for monitoring the freshness of orange juice and milk”.
479. Al-Khalifa S, **Gardner JW** and Maldonado-Bascon S *Proc. Sensors and Their Applications, City University, UK, 3-6 September 2001* “Rapid multicomponent analysis using a thermally-modulated resistive gas microsensor and a discrete wavelet transform”
480. Lu C-C, Sediadi D, Udrea F, Milne WI, Covington JA and Gardner *Int. Conference on Modelling & Simulation of Microsystems, MSM 2000, San Diego, USA, March, 2000, pp.297-310* “3D thermo-electro-mechanical simulations of gas sensors based on SOI membranes”
481. Searle GE, **Gardner JW**, Chappell M, Godfrey KR and Chapman MJ *12th IFAC Symposium on System Identification, SYSID 2000, Santa Barbara, USA, 21-23 June 2000* “System identification of electronic nose data for monitoring cyanobacteria in potable water: black-box modelling”
482. Covington JA, **Gardner JW** and Briand D *8th Int. Conf. on Chemical Sensors, Basel, Switzerland, 3-5 July, 2000* “A polymer gate FET sensor array for detecting organic vapours”
483. Covington JA, **Gardner JW**, Toh C, Bartlett PN, Briand D and de Rooij NF *7th Int. Symposium on Olfaction and Electronic Noses, Brighton, UK, 20-24 July 2000* “Array of MOSFET devices with electrodeposited conducting polymer gates for vapour and odour sensing”
484. Tamadoni R, **Gardner JW**, Dyer DC, Krauss A, Weimar U, Besnard I, Bartlett PN, Gier L, Stefano C, Briand D, van der Schoot B, Sundgren H and Davide F, *8th Int. Conf. on Chemical Sensors, Basel, Switzerland, 3-5 July 2000* “A cabin air analyser for automotive application”
485. Llobet E, Rubio J, Vilanova X, Brezmes J, Correig X, **Gardner JW** and Hines EL, *8th Int. Conf. on Chemical Sensors, Basel, Switzerland, 3-5 July 2000* “Electronic nose simulation tool centred on PSPICE”
486. de Matos R, Dow CS and **Gardner JW** *7th Int. Symposium on Olfaction and Electronic Noses, Brighton, UK, 20-24 July 2000* “Investigation of the growth characteristics of E. coli using headspace”
487. Boilot P, Hines EL, **Gardner JW**, Hero M, Fink C, Mitchell J and Spencer J *7th Int. Symposium on Olfaction and Electronic Noses, Brighton, UK, 20-24 July 2000* “Detection of bacteria causing eye infection using an electronic nose”
488. Cole M, **Gardner JW**, Covington JA, Fife D, Kwok CY, Brignell JE and Bartlett PN *14th European Conference on Solid-state Transducers, Copenhagen, Denmark, August 27-30, 2000* “Active bridge polymeric resistive device for vapour sensing”

489. Udrea F, Setiadi D, **Gardner JW**, Covington JA, Dogaru T and LU CC 14th *European Conference on Solid-state Transducers, Copenhagen, Denmark, August 27-30, 2000* “A novel class of smart gas sensors using CMOS micro-heaters embedded in an SOI membrane”
490. Cole M, **Gardner JW**, Brignell JE and Bartlett PN 6th *Joint Warwick-Tokyo Nanotechnology Symposium, Coventry, UK, 18-21 September 2000* “Characterisation of a poly(pyrrole) and poly(bithiophene) five element CMOS-compatible active bridge devices”
491. Lee SM, **Gardner JW**, Dyer DC, Bartlett PN and Tan YM 6th *Joint Warwick-Tokyo Nanotechnology Symposium, Coventry, UK, 18-21 September 2000* “Silicon planar pellistor employing nanostructured films and a micro-hotplate”
492. Invited Paper: Varadan VK and **Gardner JW** *Proc. SPIE on Smart Electronics and MEMS, Newport Beach, USA, March 1999* “Smart tongues and smart noses”
493. **Gardner JW**, Covington JC and Hatfield JV *Proc. SPIE on Smart Electronics and MEMS, Newport Beach, USA, March 1999* “Conducting polymer FET devices for vapour sensing”
494. **Gardner JW**, Udrea F and Milne W *Proc. SPIE on Smart Electronics and MEMS, Newport Beach, USA, March 1999* “Numerical simulation of a new generation of high-temperature micropower gas and odour sensors based on SOI technology”
495. Setiadi D, Udrea F, Milne WI, Covington J and **Gardner JW** *SPIE Meeting, USA, 1999* “3D numerical simulation of novel SOI MOSFET based gas sensors”
496. Plenary Paper: **Gardner JW** *Proc. Sensors & their Applications X, Cardiff, 5-8 Sept. 1999* “Towards a nose-on-a-chip: micromachining of a miniature olfactory system”
497. **Gardner JW**, Dow CS, Shin HW, Searle G and Chappell M *International Symposium on Olfaction & Electronic Noses, Tuebingen, Germany, 20-2 September 1999* “Dynamical signal processing techniques for bioprocess monitoring”
498. Shin HW, **Gardner JW**, Hines EL and Dow CS, *International Symposium on Olfaction & Electronic Noses, Tubingen, Germany, 20-2 September 1999* “Classification of toxicity and growth of cyanobacteria in water with an electronic nose”
499. Singh S, Hines E L and **Gardner JW** *Proc. 3rd Int. Conf. on Artificial Neural Networks and Genetic Algorithms, 1998 Wein, Springer 537-540* “Classifier Systems based on possibility distributions: a comparative study”
500. **Gardner JW** 9th *CIMTEC, Florence, Italy, June 1998* “Pattern recognition in gas sensing”
501. Ingleby P, **Gardner JW**, and Bartlett P N *Proc. Eurosensors XII, Vol. 1, ed. N White, IOP Publishing Ltd, Bristol pp. 135-139 1998* “Characterisation of a CMOS current drive chip for an array of six polymeric resistive gas sensors”
502. Cole M, **Gardner JW**, Lim A W Y, Scivier P K and Brignell J E *Proc. Eurosensors XII, Vol. 2, ed. N White, IOP Publishing Ltd, Bristol pp. 1099-1102 1998* “Characterisation of a CMOS current drive chip for an array of six polymeric resistive gas sensors”
503. Hatfield J, Covington JA and **Gardner JW** *Proc. of Int. Conf. on Chemical Sensors, Beijing, June, 1998* “GasFETs incorporating conducting polymers as gate materials”
504. **Gardner JW** *Proc. 5th Int. Symp. on Electronic Noses, Baltimore, USA., 27-30 Sept., 1998* “An electronic nose to diagnose illness”
505. Invited Talk: **Gardner JW** *South East Midlands branch of Institution of Agricultural Engineers, Silsoe, 3 March 1997* “Electronic noses: fabrication and application”
506. Hines E L, **Gardner JW**, Molinier F, Craven M A and Bartlett P N *Sensor Technology Opportunities in the Upstream Oil and Gas Industries, DTI Conference, London 6 May 1997* “Sensor data processing via intelligent systems”
507. Shin H W, Lloyd C and **Gardner JW** *Proceedings of Transducers '97, Chicago, 16-19 June 1997, pp. 935-938* “Combined resistive and calorimetric sensing of gases using a single micromachined device”
508. **Gardner JW**, Lloyd C R, Pike A C, Brignell J E, Scivier P, Bartlett P N, Duke A J and Elliott J M *Proc. Eurosensors XI, Warsaw, Poland, 21-24 September 1997* “Conducting polymer based resistance micro-bridge for sensing of gases and vapours”

509. Scivier P K, White N M, Brignell J E, **Gardner JW** and Vidic M M *Proc. Eurosenors XI, Warsaw, Poland, 21-24 September 1997* “Pulsed current analog CMOS ASIC excitation of polymer-based gas sensors”
510. **Gardner JW** and Gardner W E *Proc. of British Institute of Non-destructive Testing conference, UK, 16-18 September 1997* “The role of electronic noses in condition monitoring”
511. Invited Paper: **Gardner JW** *Proc. of 3rd East Asian Conf. on Chemical Sensors, Seoul, Korea, 5-6 November 1997* “Diagnosing illness with an electronic nose”
512. Shin H W and **Gardner JW** *Proc. of 3rd East Asian Conf. on Chemical Sensors, Seoul, Korea, 5-6 November 1997* “A combined resistive and calorimetric gas sensor”
513. Invited Paper: **Gardner JW** and Bartlett PN, *Pittsburgh Conf. on Analytical Chemistry and Applied Spectroscopy, 4-7 March 1996, Chicago, USA* “The history of electronic noses”
514. Invited Paper: **Gardner JW** and Bartlett PN, *Pittsburgh Conf. on Analytical Chemistry and Applied Spectroscopy, 4-7 March 1996, Chicago, USA* “The future of electronic noses”
515. Invited Paper: **Gardner JW**, *The Institute of Physics Annual Congress, 23-25 April 1996, Telford, UK* “Chemical and biological silicon sensors”
516. Bartlett P N, Elliott J and **Gardner JW**, *Euroanalysis IX, 1-7 Sept. 1996, Bologna, Italy* “Applications of, and developments in, machine olfaction”
517. Ingleby P, Covington J, **Gardner JW** and Bartlett P N *10th European Conference on Solid-state Transducers (Eurosenors X), Leuven, Belgium, 9-11 September 1996* “Dual resistance-mass polymeric sensor for improved gas sensing”
518. Dyer DC and **Gardner JW** *10th European Conference on Solid-state Transducers (Eurosenors X), Leuven, Belgium, 9-11 September 1996* “High precision interface for a hybrid electronic nose”
519. Chetwynd DG and **Gardner JW** *IEE Colloquium on Conducting Polymers and their applications in transducers and instrumentation, Digest No. 96/242, 30 October 1996* “Tribological applications of conducting polymer films in micromechanical devices”
520. Dyer DC and **Gardner JW** *IEE Colloquium on Conducting Polymers and their applications in transducers and instrumentation, Digest No. 96/242, 30 October 1996* “Interface electronics for resistive and piezoelectric polymer gas sensors”
521. Invited Paper: **Gardner JW** *3rd International Symposium on Olfaction & Electronic Noses, Miami, Florida, 3-6 November 1996* “Electronic nose technology: present & future”
522. **Gardner JW**, Craven MA and Hines EL *3rd International Symposium on Olfaction & Electronic Noses, Miami, Florida, 3-6 November 1996* “Classification of bacteria age and type using an array of metal oxide sensors and pattern recognition techniques”
523. Invited Paper: Hines EL, **Gardner JW**, Molinier F, Craven MA and Bartlett PN *Royal College of Anaesthetists, Symposium, London, 7-8 November 1996* “Can we mimic human sensory systems?”
524. Invited Paper: **Gardner JW** *10th Colloquium of Gas Analysis & Sensing Group, 16-17 December 1996, Swansea* “New electronic noses”
525. **Gardner JW** *1995 IEMRS 1995 Spring Meeting, Strassbourg (France) May 22-26, 1995 Symposium A, Microstructuring and Microsensors.* “Application of conducting polymer technology in Microsensors”
526. Welham CJ, **Gardner JW** and Greenwood J *Technical Digest of Transducers '95-Eurosenors IX, Stockholm, Sweden, 25-29 June 1995* “A laterally driven micromachined resonant pressure sensor”
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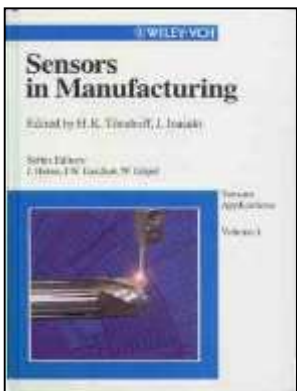
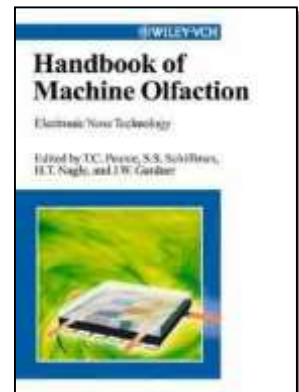
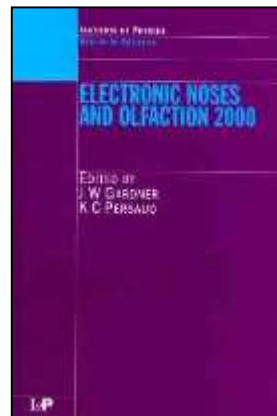
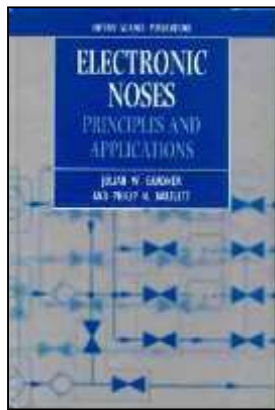
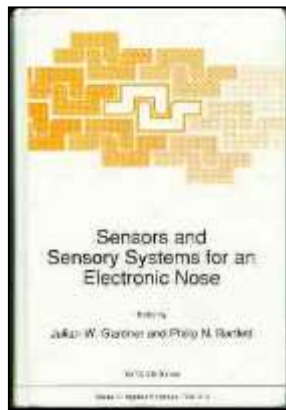
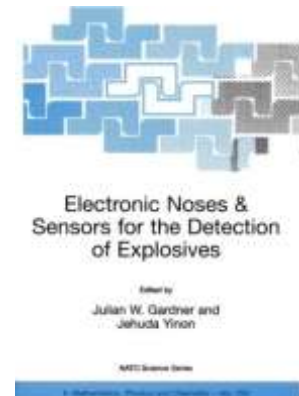
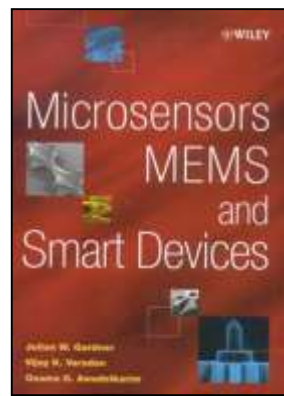
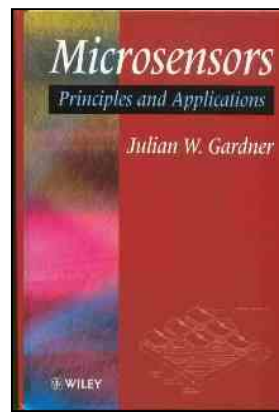
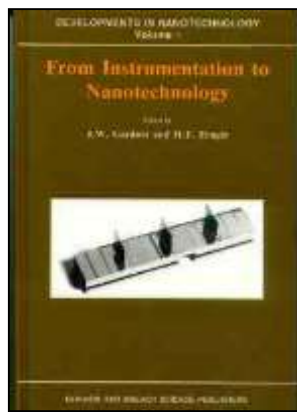
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