



## CURRICULUM VITAE

**Name:** **Professor Julian William Gardner FEng**  
BSc (*Birmingham*), PhD (*Cambridge*), DSc (*Warwick*), CEng, FIET, SMIEEE

**H-index 63, >15,000 citations from Google Scholar; > 500 publications**

### Current Employment/Job Titles:

- Professor of Electronic Engineering, University of Warwick
- Head of Electrical & Electronic Engineering, University of Warwick
- Head of Microsensors & Bioelectronics Laboratory, Warwick University
- Director and Regional Chair of International Society for Olfaction and Chemical Sensors
- Founder and Chief Scientist of Cambridge CMOS Sensors Ltd (now ams Sensors UK Ltd)
- Founder of Sorex Sensors Ltd, UK.

### Work Address:

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### Home Address:

The Terrets, Mill Lane  
Kineton  
Warwick CV35 0LA, UK.

Tel: +44 (0) 1926 640902

**Date of Birth:** 5th August 1958, Oxford, UK.

### Academic Qualifications:

D.Sc. Electronic Engineering, University of Warwick (1997).

Ph.D. Physical Electronics, University of Cambridge (1982).

B.Sc. First Class Honours in Physics, University of Birmingham (1979).

### Current & Past Employment/Job Titles:

2011- Head of Electrical & Electronic Engineering Discipline, Warwick University.

2011- Head of Microsensors and Bioelectronics Laboratory, Warwick University.

2013-2016 Chief Scientist of Cambridge CMOS Sensors Ltd.

2012-16 Treasurer & director of International Society for Olfaction and Chemical Sensing.

2010-12 President of International Society for Olfaction and Chemical Sensing.

2008-10 Vice President of International Society for Olfaction and Chemical Sensing.

- 2008-2012 CTO and Founding director of Cambridge CMOS Sensors Ltd.  
2006-2013 Director of Centre for Cognitive & Neural Systems.  
2003-7 Dean, School of Engineering, Warwick University.  
1998-2003 Head of Electrical & Electronic Engineering Division, Warwick University.  
1994-8 Reader, School of Engineering, University of Warwick.  
1991-4 Senior Lecturer, Department of Engineering, Warwick University.  
1987-91 Lecturer, Department of Engineering, Warwick University.  
1986-7 Research Engineer, Advanced Technology Centre, Molins Plc, Coventry.  
1983-6 Principal & Technical Officer, Safety & Reliability Directorate, AEA Technology.

**Research areas:**

- CMOS Microsensors/Microsystems
- Chemical/Gas Sensing and Artificial Olfaction
- Biomimetic devices (electronic noses and tongues)
- Biomedical engineering
- Intelligent signal processing and pattern analysis

**Education:**

- 1997 DSc, University of Warwick, Coventry, UK.  
1979-83 PhD, Queens' College, University of Cambridge, Cambridge, UK.  
1976-9 BSc at University of Birmingham, Birmingham, UK.  
1969-76 Full Scholarship to Abingdon School, Abingdon, Oxon.  
1976 3 'A' Levels; Chemistry (A), Physics (B), Mathematics (B).  
1974 10 GCSE 'O' Levels; 1 GCSE 'AO' Level.

**Awards (11):**

- 2017 Nominated for IEEE Technical Award (Instrumentation & Measurement Society).  
2015 NMI Innovation Award, London.  
2014 Best of Sensors Expo Award, USA.  
2013 Received CleanTech Company of the Year Award (Business Weekly) from Lord Sainsbury, Cambridge.  
2011 Highly Recommended Start-up Company of the Year, British Engineering in Excellence Awards, London.  
2007 Awarded JJ Thomson Medal for Achievement in Electronics by Institution of Engineering and Technology, UK.  
2004 Wolfson Refurbishment Award funded by Royal Academy of Engineering and Royal Society to create Nanostructures Laboratory.  
2003 Global Research Award from the Royal Academy of Engineering, UK.  
2002 Best paper in session at IEEE Sensors 2002 conference, Florida, USA.  
1995 A paper received both a Diploma for the best section paper at the 17th Edition of Annual Semiconductor Conference, Sinaia, Romania, 11-16 October 1994 and, judged by 9 international referees, the Best Paper Award on behalf of the Microelectronics Journal.  
1995 A journal article was reported in Spotlights 95 (Elsevier) to be the most cited paper in the journal Sensors and Actuators B in 1992.

- 1992            Awarded Diploma in Science pour L'Art competition funded by Moët-Hennessy Louis Vuitton, France.
- 1988            Esso Centenary Award from Royal Society and Fellowship of Engineering.

**Learned Society Membership:**

Fellow of the Royal Academy of Engineering, UK (2006)  
Fellow of the Institution of Engineering and Technology, UK (since 1996)  
Fellow of Institute of Physics, UK (2004-8)  
Senior Member of Institute of Electrical & Electronic Engineers, USA (since 2002)  
Fellow of Alexander van Humboldt Society, Germany (since 1994)

**Current Research Staff and Postgraduate Students:**

- 3 Postdoctoral research assistants
- 6 PhD students (25 successfully graduated)
- 1 MSc/MPhil student (22 successfully graduated)

**Recent Grants and Contracts – Total Value of ca. £5 million**

2016-19 EU Horizon 2020 EU project called “SaSHa”. CI for Warwick €300k  
2015-18 EU Horizon 2020 EU project called “SmokeBot” with Orebro University. PI for Warwick. €560k  
2015-18 EU Horizon 2020 “Nanonets2sense” with Cambridge CMOS Sensors. €475k  
2013-17 FP7 EU ICT Collaborative project called “Multi-Sensor Platform for Smart Building Management” with Samsung and Siemens. PI for Warwick: €400k.  
2014-17 EPSRC project on Supergen programme with UCL. PI for Warwick £350k  
2011-15 Work package leader on FP7 EU Large scale integrating project called “Grafol” with Philips and Thales. Spin-out €250k  
2011-4 Work package leader on FP7 EU STREP called “SOIHITS” with Zarlink and Honeywell to start late 2011 for 3 years. PI for Warwick: €500k  
2011-12 Work package leader on EEDS project called “SOI IR sources” May 2011 to 2012. Spin-out £180k  
2009-12 EU FP7 funded Large Scale Integrating project called “Technotubes” with Philips and Thales. €360k for spin-out company.  
2009-13 EU COST project called “nanoTP”. Work package 2 leader on devices.  
2007-11 EU funded FET project on “Intelligent Chemical Communication”. €2M  
2007-10 EPSRC responsive mode grant on “Nanostructures”. £300k  
2007-10 TSB funded technology project on “Ultra-low power gas sensors” £150k.  
2004-7 Denso plc. Industrial contract “Design of smart sensors”. £248k  
2003-5 Sony (Germany). Research contract on “Ratiometric gas sensors”. £65k  
2004-5 Royal Society. Wolfson Laboratory Scheme. “Wolfson Nanostructures Laboratory”. £200k  
2004 HEFCE. SRIF2 programme. “Microsculpting Laboratory”. £230k  
2004 NATO Advanced Workshop on “Electronic Noses and Sensors for the Detection of Explosives”. £28k  
2001-4 EPSRC. Responsive mode grant. “Adaptive neuromorphic analogue VLSI chip for odour sensing”. £142,114. Total value of project with Edinburgh and Leicester is £400k  
2001-4 EU. Second network on artificial olfactory sensing. Warwick value is £11k  
2003 Royal Academy of Engineering. Global research award. “Smart electronic tongue and nose-on-a-chip”. £19k  
2001-3 Wellcome Trust. “Novel Biosensor”. £284k

2002-3 Honeywell plc (USA). “Smart SOI gas sensors for future use in wireless applications”. £26k  
2001-3 Welch-Allyn. “Rapid screening of ENT infections using an electronic nose”. £80k  
2001-3 Wellcome Trust. “Development of novel bioprobe”. £284k

**Manuscripts reviewed for:**

- Bioelectronics and Biosensors
- IEE Journals (various)
- IEEE Journals (various)
- Institute of Physics Journals (Various)
- Nature/ Nature Letters
- Royal Society
- Royal Society of Chemistry
- Sensors and Actuators

**Grant proposals reviewed for:**

- EU, Horizon 2020, and ERC.
- Royal Academy of Engineering
- Biological & Biochemistry Research Council (UK).
- Department of Trade and Industry (UK)
- Engineering & Physical Research Council (UK)
- National Science Foundation (USA)
- Government bodies in Australia, Denmark, India, Israel, Italy, Spain, Sweden, New Zealand, UK, USA.

**Services to Profession:**

*External National Committees and Editorships:*

- Academic mentor for Royal Academy of Engineering
- Deputy-Chair of ERC Panel PE8 for Consolidator Grants (2013-16)
- President of International Society for Olfaction and Chemical Sensors (2009-11)
- Vice-President of International Society for Olfaction and Chemical Sensors (2008-9 )
- Chair of Scientific Council, EU Network of Excellent on Machine Olfaction (2003- 8)
- Expert for NATO Science programme (2006-10 )
- Member of EPSRC College
- Series Editor of Wiley-VCH on “Sensor Applications” – 4 volumes published (1999- )
- Member of EPSRC Advisory panel on Basic Technologies Materials (2006)
- Editorial board member of IOP Smart Materials and Systems journal (2001-2004)
- Governor of Silsoe Research Institute, BBSRC (2001-5)
- Advisor to Wellcome Trust (2004) and EU Science programme (2002-5)
- Member of DTI Advisory Panel for LINK programme on Basic Technologies (2002-4)
- Associate Editor of the IEEE Sensors Journal (2000-5)
- Executive Member of IEE Professional Network on Microsystems Technology and Nanotechnology (2001-3)
- Member of DTI/EPSC Advisory panel for LINK programme Sensors and Sensor Systems (1997-2002)

*Recent activities associated with International Conferences:*

- Honorary Fellow and member of technical committee of Eurosensors 2016 (Budapest)
- Appointed member of technical committee of CENICS conference 2013 (Spain)
- Chair of the Steering Committee of The International Symposium on Olfaction & Electronic Noses (ISOEN 2013)
- Member of International Steering Committee of International Meeting of Chemical Sensors 2000-2012
- Member of Technical Advisory Board of IASTED Biomedical Engineering Conf 2008-12
- Executive member of Eurosensors Steering Committee (2000-2011)

- Co-director of ISOCS Winter Schools in 2009, 2011, 2014, 2015.

*Other Professional Activities*

- Member of International Advisory Committee, Engineering Department Cambridge University.
- Member of Technical Advisory Board, Nevada Nano, USA.
- Appointed Academic Advisor to ECS u/g courses at Southampton University 2014.
- Appointed Visiting Professor in the Faculty of Electrical Engineering at Universiti Teknologi Malaysia (UTM) 2013.
- External examiner for two departments at Faculty of Electrical Engineering at Universiti Teknologi Malaysia (UTM) 2013.
- External examiner for new MSc programme in Industrial Electronics for Southampton University 2013.
- External examiner on undergraduate programme for Cambridge University (2011-13).
- External examiner on undergraduate programme for Durham University (2010-12).
- Senior Research Fellow at Cambridge University, UK (2007-10).
- External examiner on MSc degree at Nanyang Technological University, Singapore (2005-9).
- Visiting Professor at Center for the Engineering of Electronic and Acoustic Materials, Penn State University, USA (1998-2005).
- Member of Advisory Board of Cyrano Science, USA (1998-2005).
- Appointed to Editorial Board of Sensors Update, Wiley-VCH Publishers (1998-2004)
- Alexander von Humboldt Research Fellow, Germany (1994- ).
- Consultant to Hewlett-Packard, USA (1997-2001).
- Visiting Professorship at Seoul National University, Korea (1997).
- Visiting Professor at Gintic Institute of Manufacturing Technology, Nanyang Technological University, Singapore (1996-7).
- Consultant to Alpha MOS, France (1994-6).
- Visiting Professor (Japan Society for Promotion of Science) at Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan.

*External PhD Examiner for:*

- Overseas: Leuven Technical University, Nanyang Technical University, University of Barcelona,
- UK University of: Birmingham, Brunel, Cambridge, Durham, Edinburgh, Heriot-Watt, Imperial College London, Leeds, Leicester, Manchester, Nottingham, Sheffield, Southampton, UCL

**Recent Services to the University:**

|         |  |
|---------|--|
| 2014-   | Industrial Advisory Board, School of Engineering                         |
| 2012-14 | Chair of review panel for Insititue of Education                         |
| 2010-16 | Co-ordinating New York University Abu Dhabi partnership with Engineering |
| 2009-15 | Co-ordinating partnership with IBEC in Barcelona.                        |
| 2006-8  | University Senate  |
| 2005-7  | University Research Committee  |
| 2005-7  | University International Committee                                       |
| 2004-7  | Faculty of Science Advisory Borad  |
| 2003-7  | University International Strategy Committee                              |
| 2003-7  | University Finance Committee   |
| 2003-7  | University Academic Committee  |

**Services to the School:**

2011- Head of Electrical & Electronic Engineering Discipline  
2006-13 Founding Director, Centre for Cognitive & Neural Systems  
2003-7 First Dean of School of Engineering  
1999-2003 Head of Electrical & Electronic Engineering Division  
1996-9 Director, Centre of Microengineering and Nanotechnology  
1993-6 Director of Postgraduate Studies

**Media Work:**

Local Radio Interviews: Mercia Sound, The Bear, Fox FM, Radio Galaxy, Heart FM.  
National Radio Interviews: Science Now, BBC Radio 4, BBC World Service, Radio 5 Live.  
TV programmes: BBC1 Tomorrow's World, BBC2 QED, BBC1 Midland Today

**Teaching Experience:**

MSc Microsensors and Microsystems Technology, Industrial Measurement Systems (Brunel University); Data Processing (Cranfield University); Microsensors (NTU, Singapore), Microsensors and Electronic Noses (Taiwan).

4<sup>th</sup> Year: ASICs, MEMS and Smart Devices, Analogue VLSI design

3rd Year: Fundamentals of Modern VLSI Design, Quality Techniques & Reliability Engineering, Automatic & Robotics

2nd Year: Instrumentation & Reliability, Information Engineering, Electronic Systems

1st Year: Digital Electronics, Engineering Systems Analysis, PCB CAD, Industrial Systems, Industrial Seminars, Professional Studies, Mobile Robots.