

Curriculum Vitae - Roger Paul Webb

Personal Details

Full Name	Roger Paul Webb
Date of Birth	14th December 1954
Place of Birth	London, England
Nationality	British
Employer	Advanced Technology Institute, Department of Electronic Engineering University of Surrey, Guildford, Surrey, U.K. GU2 7XH.
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Professional Experience

Dates	Establishment	Position
1979-80	University of Salford	Research Fellow
1980-1983	Department of Physics, Naval Postgraduate School, Monterey, California, USA	Research Instructor
1983-1985	University of Surrey	Research Fellow
1985-1995	Department of Electronic and Electrical Engineering	Lecturer in microelectronics
1993		<i>Merit award for outstanding contribution to department</i>
1995-1998		Senior Lecturer
1998-2002		Reader
2001-2002	Chinese University of Hong Kong	Visiting Professor on 10 month sabbatical
2002- 2003- 2008-2009 2014-2016 2017-	University of Surrey	Professor of Ion Beam Physics Director of the Surrey Ion Beam Centre Acting Director of the Advanced Technology Institute Chair of Faculty Facilities Directorate Director of the UK National Ion Beam Centre

Teaching - Courses Taught

1. Conventional Computer Architectures to levels 1,2, 3 and Masters
2. Programming: C programming to Masters students;
3. Program Design (Pascal) to year 1
4. Software Engineering: final year option and Software Design for level 2 and 3
5. Computer Technology level 1 Maths and Computer Science students
6. Set up laboratories to teach ASIC design using gate arrays; TCAD lab exercises and PERL and Pascal labs
7. Engineering Maths to level 1
8. Computer Modelling and Simulation at Masters level
9. Short courses on Materials Modelling in Ion Implantation and Analysis at Postgraduate level
10. Frontiers of Nanotechnology at Masters Level
11. Instrumentation to level 2
12. Post Doc Courses on Ion Solid Interactions
13. Post Doc & MSc Courses on Ion Beam Analysis theory, practice and applications
14. Engineering & Professional Studies at level 1 and level 3
15. Multi-Disciplinary Design Project – coordinating the execution of the level M MEng projects across all the engineering disciplines in the Faculty. At least 3 different departments are involved in each project, led by a visiting professor from industry. Sponsored by the Royal Academy of Engineering, QinetiQ and Atkins. Around 185 students take this module each year.

Administration

1987- 1997 Director of the Combined (Maths, CS, EE and Physics) Departmental Computer Resource (CDCR). Involved overseeing continued development and use of the departments' combined computing facilities. Responsibilities of the director, with the assistance of the CDCR staff (12 people): maintain and govern the upgrade and use of the joint facilities, bid for funds to improve and maintain the facilities, determine policy and strategy regarding computing in the departments, provision of basic infrastructure for the departments' teaching and research needs.

1999 - 2001 Undergraduate Examinations Officer - provision of exam and student database facilities across the School, involving creation and maintenance of software to upload student data into new information systems and provide exam result evaluation tools.

1997 - 2003 Deputy Director of Surrey Centre for Ion Beam Applications (SCRIBA). SCRIBA houses the EPSRC National Ion Beam Centre, which provides a collaborative Ion Beam service to the UK academic community.

1999 - 2001 Postgraduate tutor for SCRIBA. General tutoring and mentoring role for all PhD students in SCRIBA (25 people). Organizing training for PhD students. Students now enrolled on MRes course for first year.

2003 - 2007 Postgraduate Courses Director for Electronic Engineering. Director of 11 MSc courses for the department. Total cohort of 150 FTE/annum on Masters Courses.

2003 – Director of Surrey Ion Beam Centre, responsible for ensuring future development, funding and usage of the centre. Creation of strategic vision and planning of centre's future.

2005 – Departmental Plagiarism and Academic Misconduct Panel member.

2007 – Member of Faculty Research Committee.

2008 – 2009 Acting Director of the Advanced Technology Institute, responsible for financial planning and development.

2012 – Faculty Grant Application Peer Review Panel.

2013 – Faculty IT Governance Committee. Ensuring that computing facilities across the faculty are maintained at an appropriate standard to support the needs of the faculty.

2014 – 2016 Chair of Faculty Facilities Directorate. Responsible for: Prioritization of faculty capital investment in facilities; Spreading of best practice to support and share equipment and facilities across the faculty.

2017 - Director of the UK National Ion Beam Centre, a consortium of Ion Beam Facilities from Surrey, Huddersfield and Manchester Universities.

Collaborations with Industry

Working with a number of companies such as **IonOptika** for source development and single ion implantation facility;

Eblana, Lumentum, PROpto, Coherent, INEX, and others in R&D projects for process development for device fabrication. Generally the Ion Beam Centre engages with over 35 companies around the world in the use of ion beams for both processing and analyzing commercially relevant materials.

Research

Theme:- ***Simulation and modelling of particle beam processing of materials.***

Development and application of Molecular Dynamics codes for surface studies along with support from Monte Carlo and analytic simulations for ion implantation and radiation damage modelling.

Theme:- ***Instrumentation.***

Real time software for Rutherford Backscattering Spectroscopy data collection, analysis and simulation creating a fully automated materials analysis system and equipment control. New instrument development of atmospheric pressure Secondary Ion Mass Spectrometry (AP-MeV-SIMS).

Theme:- ***Ion Beam Centre***

General strategic planning for the development and maintenance of the Surrey Ion Beam Centre. Ensuring the facilities offered are maintained at the state-of-the-art to support UK academia and industry in the use of ion beams for general materials applications and analysis. My major role (apart from research in this area) has been to reposition the Ion Beam Centre business model from an EPSRC (SRC) central facility for microelectronics in the 1980s, supported by a core rolling grant, to a "ticket only" mid-range facility which derives its income solely from usage, supported by EPSRC, the EU and industrial users. All staff and costs to run the facility are obtained through this funding route. As of January 2017 is the Director of the EPSRC UK National Ion Beam Centre bringing together the Ion Beam facilities at Universities of Manchester, Huddersfield and Surrey

Professional Affiliations and External Committees

Member of Institute of Physics

Elected member of the Bohemische Physical Society

Committee member of the Ion and Plasma Surface Interactions group of the Institute of Physics (1984-2001)

Editorial Board of Radiation Effects and Defects in Solids

Editorial Board of Nuclear Instruments and Methods in Physics Research B

Chair of the International Scientific Committee of Computer Simulation of Radiation Effects in Solids (COSIRES)

International Scientific Committee of Symposium on the Physics of Ionised Gases

International Scientific Committee of Ion Surface Interactions Conference

International Scientific Committee of Ion Beam Analysis Conference

International Scientific Committee of the European Conference on Accelerators in Applied Research and Technology

Chair of the International Scientific Committee of the Radiation Effects in Matter Conference

Various IAEA advisory panels in the UK, Austria, Lisbon, Japan and South Africa

Evaluation panel for EU framework 6/7 modeling proposals

Evaluation panel for joint EU-NFS call for modeling proposals

International Scientific Advisory Board member of the Finnish Centre of Excellence in Atomic Layer Deposition

International Scientific Advisory Committee FAMA, Serbia

Publications

Over 240 publications in refereed international scientific journals as well as a number of conference presentations and book chapters, both invited and contributed. (see attached)

Over 200 international presentations at conferences and meetings, almost half of which were invited presentations.

h-index = 33; over 4,300 citations

Post Graduate Students Supervised and Examined

Supervised 30 PhD students, 26 to completion with 2 still in progress.

External examiner on 34 PhD theses from Universities of Loughborough, Salford, UMIST, Paisley, Helsinki, Chinese University of Hong Kong, Newcastle Australia, Newcastle UK, Sheffield, Manchester, Dublin City, UCL(Belgium)...

Internal examiner on 38 PhD theses

Research Funding

1. *Ion Beam Facility for Microelectronics, (EPSRC) Oct'87 - £876,287 – with Stephens, Sealy, Hemment, Mynard*
2. *University of Surrey Ion Beam Facility for Microelectronics, (EPSRC) Dec'87 -£59,561 – with Stephens, Sealy, Hemment, Mynard*
3. *The Fabrication of New Silicon Devices Using MBE and Ion Implantation,(EPSRC) Oct'88 - £255,535 – with Parker, Wilson, van den Berg, Whall*
4. **Fundamental Studies to Develop New Process Models, (EPSRC GR/F36200) July '89 - £77,580*
5. *Surrey Ion Beam Facility for Microelectronics, Aug '89 - £2,112,376 – with Stephens, Sealy, Hemment, Mynard*
6. **Scanning Tunnelling Microscopy of Semiconductors, (EPSRC GR/F57786) Oct. '89 - £164,688*
7. *A Molecular Dynamics Study of Carbon Self-Sputtering, (EPSRC GR/F84683) March '90 - £4,000 – with RSmith*
8. *Surrey Ion Beam Facility for Microelectronics, (EPSRC) Aug '91 - £1,118,572 – with Stephens, Sealy, Hemment, Mynard*
9. *Non-Destructive Characterisation Of Semiconductors Using Microscope Spectrophotometry, (EPSRC GR/H14366) Feb. '92 - £61,347 – with Criddle, Reeson*
10. *Ion Beam Facility for Microelectronics, (EPSRC GR/J42298) Feb'94 - £2,203,948 – with Sealy, Stephens, Hemment*
11. *Ion Beam Facility for Microelectronics, (EPSRC GR/K56247) Nov'95 - £3,923,379 – with Sealy, Stephens, Hemment*
12. *Ion Beam Facility for Microelectronics, (EPSRC GR/L78512) Mar'98 - £2,006,966 – with Sealy, Stephens, Hemment, Homewood*
13. *Irradiation Damage Technology for Manufacturable Superconducting Devices, (EPSRC GR/L66199) Jan '98 - £113,793 – with Jeynes, Kelly*
14. **Irradiation Damage Technology for Manufacturable Superconducting Devices,(EPSRC GR/M85210) Jan'00 -£161,185 – with Kelly*
15. **Automated Ion Beam Analysis System, (HVEE funding) Jan'00 £45,000 – with Sealy, Jeynes*
16. *An Enhanced UK Facility for Ion Beam Analysis of Key Strategic Materials, (EPSRC GR/M94434) July'00 - £929,921 – with Sealy, Jeynes, Clough, Breese, Spyrou*
17. *Validation of Shallow Junctions by STM, (EPSRC GR/N39364) Feb'01 - £330,915 – with Kelly, Silva, Weiss*
18. **The Surrey University Ion Beam Centre,(EPSRC GR/R50097) March'02 – £2,065,115 – with Sealy, Kirkby, Homewood*
19. **Community Meeting on the Future of Ion Surface Interactions in the UK, (EPSRC GR/S48363) Feb'03 - £6,129 – with Sealy*
20. *Knowledge Transfer Partnership on Manufacturable X-ray detectors (KTP-DTI) June '04 - £123,792 - with E2V and Gwilliam,*
21. *BioMed Network for High Energy Ion Beams, (EPSRC GR/S91512) May '04 - £63,109 – with Kirkby, Grime, Ready, Clough, Spyrou*
22. *Marie Curie Training Network for Application of MeV Ion Beams to Cell Irradiation (FP6) Jan '05 - £300,000 – with Grime, Kirkby*
23. *MeV Ion Nanobeams: Nanotechnology for the 21st Century, (EPSRC EP/C009592) Sept '05 - £256,845 – with Grime, Kirkby, Clough, Gwilliam, Jeynes*
24. **New Developments in ToF-SIMS Surface Mass Spectrometry with ATR_IR Spectroscopy, (EPSRC EP/C009339) Sept '05 - £227,208 – with Kirkby*
25. **University of Surrey Ion Beam Centre, (EPSRC EP/D032210) March '06 - £2,271,580 – with Sealy, Kirkby, Homewood, Gwilliam, Jeynes, Grime*
26. **University of Surrey Ion Beam Centre, (EPSRC additional ticket income for beam time) March '06 - £1,090,573*
27. *The Non Scaling Fixed Field Alternating Gradient (NS-FFAG) Accelerator, (EPSRC EP/E032869) April '07 – £7,472,363 - with Kirkby and 5 other Universities*
28. *Enhancing new developments in ToF-SIMS through researcher exchanges, (EPSRC EP/F012985) Oct '07 - £109,825 – with Vickerman and Lockyer*
29. *Laser Induced Beams of Radiation and their Applications (LIBRA), (EPSRC EP/E035728) Nov '07 - £4,707,229 – with Kirkby and 4 other Universities*
30. **SPIRIT – Support for Public & Industrial Research Using Ion Beam Technology, (EU – FP7) March '09 - £1,069,314 - with 7 other European centres, total value ~£5.5M)*
31. *Coherent Optical and Microwave Physics for Atomic Scale Spintronics in Silicon (COMPASSS) , (EPSRC EP/H026622) February '10 - £6,106,847 – with Murdin, Gwilliam, Al-Khalili and 3 other Universities*
32. **University of Surrey Ion Beam Centre, (EPSRC service level agreement), March '10 - £2,319,303 paid to date*
33. **Ambient Pressure Mass Spectrometry at the Sub Micron Scale (MeV-SIMS), (EPSRC EP/I036516) December '11 - £1,278,391 – with Ward and Kirkby*
34. **Marie Curie Research Training Network SPRITE, (EU- FP7), Jan '13 - £440,601 – with 9 other European partners*
35. *Radiation Damage in Nanoporous Nuclear Materials, (EPSRC EP/M01861X) July '15 - £287,062*
36. *UK National Ion Beam Centre Mid Range Facility Funding (EPSRC NS/A000059) January '17 - £8,836,433 (inc VAT) – with Universities of Manchester and Huddersfield.*
37. *Quantum technology capital: Multi-species single-ion implantation (EPSRC EP/N015215) April '16 - £2,950,032 - with Curry, Murdin, Cox and Kearney*
38. *IBA-DAPNe: a new system for sub-micron scale molecular speciation and quantification (EPSRC EP/P001440) November '16 – £513,369 – with Bailey, Crean and Kearney*
39. *Vacancy-Rich Silicon as a Flexible Thermoelectric Material (EPSRC EP/N035216) November '16 - £216,237 – with Bennett*
40. *RADIATE – Research & Development with Ion Beams – Advancing Technology in Europe January '19 - £900,000 EU Transnational Access project with 18 partners across the EU.*
41. *High Resolution Ione Beam Analysis Facility (EPSRC EP/T01931X) January '20 - £1,570,473 – with Grime, Bailey, England and Sampson*