CURRICULUM VITAE

Martyn Christopher Davies CBE DSc
FRPharmS CChem FRSC

Emeritus Professor in Biomedical Surface Chemistry

CURRICULUM VITAE

Professor Martyn Christopher Davies CBE

Male: British; 67 years of age;
Born 6th February, 1957 in Pontypridd, South Wales.

UNIVERSITY ADDRESS

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EDUCATION

1977-1980 BSc (1st Class) at the Department of Pharmacy, Brighton Polytechnic final year project on "Applications of Synthetic Biomedical Polymers in Advanced Drug Delivery" (with Professor C Marriott).

1981-1984 PhD studies on the Surface Energetics of Hydroxypropylmethylcellulose, entitled "Properties of aqueous film coatings". (Supervisor - Professor J M Newton) at the Chelsea School of Pharmacy, Kings College, University of London, awarded 1985.

2018 DSc, University of Nottingham, "Scratching the Surface of Pharmaceutical and Biomedical Systems".

2018-20 MA, Open Univeristy, "History of Art".

EMPLOYMENT RECORD

1981 Pre-registration pharmacy graduate at Pharmacy Department, University College Hospital, London (six months), and Research and Development Department, Roche Products Ltd., Welwyn Garden City, Herts (six months).

1984-1985 Department of Pharmacy, University of Manchester.
Temporary Lecturer with responsibilities for teaching physical chemistry.

1985-1991 Department of Pharmaceutical Sciences, University of Nottingham.
Lectureship in Drug Delivery.

1991-1996 Readership in Biomedical Surface Chemistry.

1996-2017 Professor of Biomedical Surface Chemistry (50% from 2007).

1996- Pharmaceutical Consultant.

1997-2013 Chairman, Molecular Profiles Ltd.

1999-2000 Deputy Head of School of Pharmaceutical Sciences.

2000-2003 Head, The School of Pharmaceutical Sciences and The Pharmacy School.

2013-2018 Advisor to the Board of Columbia Laboratories/Juniper Pharmaceutials.

2017- Emeritus Professor, School of Pharmacy, University of Nottingham.

NATIONAL OR INTERNATIONAL RECOGNITION

(A) DISTINCTIONS AND PRIZES

1980 Awarded the Edmund White prize for Best Pharmacy student of the final year at Brighton Polytechnic in June 1980.

1988 Recipient of the 1988 Pharmatec prize ($5,000) for novel work in the Pharmaceutical Sciences in recognition of my surface analysis studies.

1991 Recipient of one of the five 1991 Pfizer Academic Awards in recognition of the excellence of my recently published research (£5,000). The citation reads "For his contribution to the structural characterization of pharmaceuticals and biomaterials through surface analysis to optimize the rational design of drug delivery systems".

1994 Recipient of the UK ESCA Users' Group Science Prize. The citation reads "for work which has been judged to be of outstanding quality and an important contribution to the field of surface science".

1997 Recipient of Controlled Release Society's Young Investigator Award in recognition for my studies on probing biomolecular interactions with materials using surface analytical techniques.

2000 Science Chairman, Millennium Meeting British Pharmaceutical Conference, Birmingham International Conference Centre (1700 attendees).

2001 Elected Scientific Secretary, Controlled Release Society.

2003 Fellow of the Royal Society of Chemistry
Fellow of the American Institute for Medical and Biological Engineering
Recipient of the GlaxoSmithKline International Achievement Award 2003 presented at the British Pharmaceutical Conference September 2003
Fellow of the Royal Pharmaceutical Society of Great Britain

2005 Member, RAE 2008 Pharmacy Panel

2007 Queen's Award for Enterprise in the category of "Innovation" received by Molecular Profiles and a separate award to the School of Pharmacy

2009 Elected Vice-President, Controlled Release Society

2010 Fellow of the Academy of Pharmaceutical Sciences
Fellow of the Controlled Release Society

2011 Queen's Award for Enterprise in the category of "Innovation" received by Molecular Profiles

2011 President, Controlled Release Society (2011-12)

2018 Appointed Commander of the Order of the British Empire (CBE) in the Queen's New Year's 2018 Honours List

2019 Honary Doctorate in Science, University of Brighton

Our Group and School has attracted recognition from within the University being chosen to host visits from dignitaries (including The Secretaries of State for Education and Trade and Industries - John Patten and Michael Heseltine; The Chief Scientific Officer to the Cabinet; Sir Mark Richmond; Sir Richard Sykes, Chairman of GlaxoSmithKline on opening of the GSK Nanotechnology Laboratory; Professor Aaron Klug, President of Royal Society on occasion of opening Institute of Pharmaceutical Sciences; The Chief Executive of the BBSRC - Professor R Baker; Science Minister - Lord Sainsbury) reviewing technology transfer exploitation within the School and to advertise the research profile of the University, the City and DTI Link Schemes. The Group contributed by invitation to an Exhibition on Nanotechnology at the Science Museum and have been invited to be hosts of a number of national scientific and professional meetings.

(B) TECHNOLOGY TRANSFER

In 1997, I cofounded Molecular Profiles Ltd with 3 academic colleagues. The Company was a spinout from the LBSA and I was Chairman from 1997 until 2013. Molecular Profiles aided clients in the development and characterisation of pharmaceutical and biomedical systems. We also provided Phase 1 and 2 clinical trial manufacturing for our clients. Molecular Profiles won the Queen's Award for Enterprise in 2007 and 2011. With a staff of over 60 scientists and over 40,000 sqft pharmaceutical facilities, Molecular Profiles ws acquired by Columbia Laboratories in 2013 and the company was rebranded as Juniper Pharmaceuticals in 2015. I was an Advisor to the Board of Juniper Pharmaceuticals and was Chair of their Scientific Advisory Board. With a staff of over 180 employees, bases in Nottingham and Boston and the product Crinone on the market worldwide, Juniper Pharmaceuticals was acquired by Catalent in 2018.

(C) INVITATIONS TO ADDRESS CONFERENCES AND LEARNED SOCIETIES

During my career, I have had a number of invitations to address conferences and learned societies at a national and international level. A selection are shown below:

1987
- Surface analysis techniques, Drug Delivery Workshop, **Controlled Release Society**, Virginia, USA.
- Surface Characterization of Biomaterials, **American Chemical Society**, Surface and Colloid Science division, Ann Arbor, USA.
- Spectroscopy of Polymers, a **Royal Society of Chemistry** (MACRO Group) Meeting in honour of Professor Irwin, Grasmere.
- Life Science Group, **Eastman Kodak Laboratories**, Rochester, USA.

1988 - **Biomaterials Symposium**, University of Toronto, Canada.

1989 - Surface Characterization of Pharmaceuticals, **Royal Society of Chemistry** meeting, Bradford University.
- Interfaces in Biomaterials Sciences, **European Materials Conference**, Strasbourg, France.
- Polymer Latex 89, **Rubber and Plastics Research Association**, London.
- New Analytical Techniques for Polymer Analysis, **Royal Society of Chemistry** meeting, Loughborough University.

1990 - 10th Celebration meeting, **UK ESCA User Group**, ICI Advanced Materials Centre, Wilton, Middlesborough.
- Characterization of Macromolecules used as Pharmaceutical Excipients, **Swedish Academy of Sciences**, Gothenburg.
- Polymer surfaces, **American Chemical Society** symposium, Boston, USA.
- STM of biomolecules, **Royal Society of Chemistry** meeting, Nottingham University.
- Technical Forum, **3M**, Loughborough.

1991 - Polymer Surface and Interfaces II, **Royal Society of Chemistry** and MACRO group meeting, Durham University.
- Surface science in the 1990's, **UKESCA Users Group**, Surrey University.

1992 - Polymer surface analysis, **Royal Society of Chemistry** meeting, UMIST.
- Surfaces and properties of biomaterials, **Joint Kodak/CSMA** meeting, UMIST.
- Surface analysis of biomaterials, **World Congress of Biomaterials**, Germany.
- Molecular Surfaces symposium, **American Vacuum Society**, Germany.

1993 - Science Link, **National Association of British Science**, University of Keele.
- Biomaterial Interfaces Symposium, **American Chemical Society** Meeting, Chicago, USA.

1994 - **AMES Symposium**, Department of Chemistry, University of Edinburgh.
- Visiting Lecture Programme, sponsored by **Courtaulds Group Research**.
- Interactions at Surfaces, **Royal Society of Chemistry** Symposium, Imperial College, University of London.

1995 - **Eidgenossiche Technische Hochschule** (ETH), Zurich.
- Biomedical Polymer Surfaces Symposium, **American Chemical Society**, Anaheim.
- Surface Contamination Meeting, **Centre for Material and Surface Analysis**, Manchester, September.
- New Opportunities in Surface Science, **Interdisciplinary Research Centre in Surface Science**, University of Liverpool, October.
- Biomaterial Interfaces at the Nanoscale, **American Vacuum Society**, Minneapolis, November.
- Groupe Thematique de Recherche sur les Vecteurs, **National French Advanced Drug Delivery Society,** Agen, December.

1996 - Colloids Characterization Symposium, **International Pharmaceutical Association**, March 7 - 9, Mainz, Germany.

1997 - **American Chemical Society symposium**, San Francisco, April 1997.
- Surface analysis of biomaterials, **ECASIA 97**, Gothenburg, June 1997

1998 - Biocolloids, **Royal Soceity of Chemistry-Faraday Division**, University of East Anglia, April 1998.
- **5 th General Meeting of the Belgian Polymer Group**, Universiteit Gent, Ooestende. May 14th-15th 1998
- **Israel Controlled Release Society**, Jerusalem, September 1998.

1999 - **The 3rd International Symposium on Frontiers in Biomedical Polymers including Polymer Therapeutics**, Hotel Lake Biwa, May 23rd-27th Japan.
- **SIMS XII International Conference on Secondary Ion Mass Spectrometry and Related Topics**, Brussels, September 5th-10th 1999.

2000 - **Millennium Microscopy Meeting**, Open University, Middlesex, February 3rd-4th 2000
- **Institute of Physics Congress**, Brighton, March 27th-30th 2000. (Dr CJ Roberts deputised)
- **Croucher Foundation Advanced Study Institute in Frontiers in Surface Analysis and their novel applications**, Hong Kong May 14th-19th 2000 (Dr PM Williams deputised)
- **10th International Conference on Colloid and Interface Science**, Bristol, 23rd-28th July 2000.
- **Millennium Science Conference of Royal Pharmaceutical Society of Great Britain,** Birmingham International Conference Centre, September 10-13th, 2000.
- **47th International Symposium American Vacuum Society,** Boston MA, October 2nd-6th 2000.
- **Special Interest Group Research of the Institute of Food Science & Technology, South Bank University**, London 11th October 2000 (Dr PM Williams deputised).

2001 - **10th International Symposium on Recent Advances in Drug Delivery Systems,** Salt Lake City**,** 19th-22nd February 2001.
- **6th International Symposium on Polymers for Advanced Technology,** Jerusalem, 3rd-7th September 2001
- **AAPS 2001 Annual Meeting**, Colorado, USA, 21st-25th October 2001.

2002 - **5th International Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice**, Wales, 3rd-5th January 2002
- **29th Annual Meeting Controlled Release Society**, Seoul, Korea, 20-25 July 2002

2003 - **AstraZeneca STAT Complex Parenterals Symposium**, Macclesfield
- **Joint CRS-Utah Polymer Therapeutics Meeting – Biomolecular interactions in drug delivery**, March 3rd-6th 2003
- **PITTCON 2003 – Advances in Scanning Force Microscopy: Towards Molecular Recognition Imaging" Symposium**, Orlando, USA, 8th-14th March 2003 (Dr P M Williams deputized)
- **30th Annual Meeting Controlled Release Society**, Glasgow, 19th-23rd July 2003

2004 - **RSC Biological Interactions at Surfaces:Chemistry and Biomaterials Workshop**, London, 15th January 2004
- **31st Annual Meeting Controlled Release Society**, Hawaii, 12th-16th June 2004
- **IUPAC 40th International Symposium on Macromolecules**, Paris 4th-9th July 2004

- **51st American Vacuum Society Symposium,** Anaheim, USA, 14th-19th November 2004
- **BioLiège Bioforum**, Liège, Belgium, 30th November 2004
- **Australasian Pharmaceutical Science Association,** Melbourne, 4th-7th December 2004

2005 - **12th International Symposium on Recent Advances in Drug Delivery Systems**, Salt Lake City, 21st-24th February 2005
- **32nd Annual Meeting Controlled Release Society**, Miami, 20th-22nd June 2005
- **First International Symposium on Biointerface Science**, New Bern, USA,12th-14th May 2005
- **3rd Nanomedicine Conference**, Baltimore, 25th-27th September 2005

2006 - **Gordon Research Conference**, Montana 20-25th August 2006
- **29th Macromolecular Symposium**, Hamburg, 1st-4th October 2006

2007 - **34th Annual Meeting Controlled Release Society**, Long Beach, 12-16th July 2007

2008 - **35th Annual Meeting Controlled Release Society**, New York, 12-16th July 2008
Gordon Research Conference, Aussois, 14-19th September 2008 (Dr M Alexander deputized)

2009 - **UK Surface Analysis Forum**, Nottingham, 1st July 2009

2010 - **Leading Edge Lectures**, University of Toronto, March 2010
- **2nd Innovation in drug delivery conference: from preformulation to development through innovative evaluation process,** co-organized by APGI and ADRITELF, Aix en Provence, France, October 3rd-6th, 2010

2012 - **12th International Symposium, CRS India Chapter**, Keynote speaker, Mumbai, India, 9th-10th February 2012
- **14th Annual Formulation and Delivery of Bioactives Conference**, Dunedin, New Zealand, 15th-16th February 2012
- **39th CRS Annual Meeting and Exposition**, Quebec City, Canada, 15th-18th July 2012
- **16th International Pharmaceutical Technology Symposium**, Antalya, Turkey, 10th-12th September 2012
- **10th International Nanomedicine and Drug Delivery Symposium**, Atlantic City, USA, 28th-30th October 2012

2013 - **Association of Pharmaceutical Scientists Annual Conference**, Edinburgh, Scotland, September 2013

2014 - **Israel Controlled Release Society Meeting**, Maalot, Israel, September 2014.
- **Drug Delivery Symposium**, Leuven, Belgium, September 2014
- **American Vacuum Society**, Baltimore, USA, November 2014

2018 - **Controlled Release Society** Annual Symposium, New York, July 2018.

I have also presented seminars at a number of **UNIVERSITY DEPARTMENTS AND RESEARCH INSTITUTES INCLUDING**:

Materials Science	- ETH, Surrey, Sheffield and London (Queen Mary and Westfield) Universities.
Chemistry	- Edinburgh, UMIST, Nottingham, Reading, Bristol and Gent Universities
Pharmacy	- Manchester, Nottingham, UMIST, Strathclyde, Bath, Aston, Cardiff, Marburg, Utah, Regensburg, National University of Ireland and London (Kings College and The School of Pharmacy) Universities.
Biochemistry	- Keele University
Biophysics	- The Randall Institute, Kings College, London University
Physics	- The Cavendish Laboratory, Cambridge University

I have also presented lectures to a number of research groups within the Pharmaceutical and Chemical Industry including Ciba Geigy, Cyanamid, Glaxo, Merck, Sharp and Dohme, Courtaulds, SmithKline Beecham, Pfizer, Astra Zeneca and Roche.

(D) EXTERNAL EXAMINERSHIPS AND REFEREE DUTIES

(I) EXTERNAL EXAMINER - UNDERGRADUATE STUDIES

1993-1997 - Physical and Surface Chemistry, Biopharmaceutics, Pharmaceutical Technology and Advanced Drug Delivery modules of the BPharm degree, The School of Pharmacy, Kings College, University of London.

2003-2007 - MSc Pharmaceutical Technology, School of Pharmacy, King's College London

2003-2007 - The School of Chemical Sciences and Pharmacy, University of East Anglia

2004-2007 - The School of Pharmacy and Pharmacology, University of Bath

2007-2011 - School of Pharmacy, National University of Ireland

2010-2013 – School of Pharmacy, University of Brighton

2011-2014 - School of Pharmacy, University of Central Lancashire

(II) EXTERNAL EXAMINER - POSTGRADUATE STUDIES

External PhD examiner at the following Departments and Universities:

Pharmacy
- University of Wales at Cardiff (2).
- University of Bath
- University of Belfast
- Kings College, University of London (4)
- University of East Anglia (2)
- School of Pharmacy (2)
- UCL (1)

Chemistry
- University of Durham (2)
- University of Southampton (MPhil)
- University of Manchester Institute of Science and Technology (2)

	- University of Coleraine - Sheffield Hallam University - Catholic University of Louvain
Physics	- HH Wills Laboratories, University of Bristol (2) - DeMontfort University - The Cavendish Laboratory, University of Cambridge
Biotechnology	- Institute of Biotechnology, University of Cambridge (2) - University of Colraine
Materials Sci.	- University of Sheffield (3) - University of Surrey
Chemical Engineering	- Imperial College, London (2)

I have also acted as internal examiner to numerous PhD viva-voce examinations within the School of Pharmacy.

(III) REFEREE - JOURNALS

I regularly act as a referee for a variety of surface, analytical, biomaterials, biophysical and pharmaceutical journals including:

Analytical Chemistry, Colloids and Surfaces, Surface and Interface Analysis, Biomaterials, Journal of Colloid and Interfacial Science, Pharmaceutical Research, Journal of Microscopy, Carbohydrate Polymers, Biomaterials, Journal of Controlled Release, Macromolecules, Langmuir and Materials in Medicine.

(IV) REFEREE - RESEARCH GRANTS

Since 1987, I have been asked to act as referee for numerous grant applications:

BBSRC, EPSRC, AFRC, Leverhulme Trust, The Wellcome Trust and Medical Research Council.

I was a member of the Medical Engineering Subcommittee, Materials Commission, EPSRC (1995-1997).

I am a member of the EPSRC Life Sciences College (1999-).

RPSGB Academic Excellence Awards Panel member (2006-2010)

(V) CONFERENCE/MEETING ORGANISATION SINCE 1990

1990 Co-organiser and host of **Royal Society of Chemistry** Biological Methods Group "1st UK International Meeting on Biological Applications of STM". Nottingham 23-24th September 1990 (165 Participants).

1993 Co-organiser and host for **Department of Trade and Industry** "New Business Opportunities in Nanotechnology and Biosciences Workshop" on "Scanning Probe Microscopy". Nottingham 1st September 1993 (15 participants).

1994 Organiser and host of **UK ESCA User Group** Meeting "Honey, I shrunk the sample", Nottingham 14th January 1994 (115 participants).
Co-organiser and host of **Royal Society of Chemistry** Biological Methods Group Meeting on "Surface Plasmon Resonance: current applications and new horizons". Nottingham 11th July 1994 (80 participants).

1995 Co-organiser and host, Inaugural **UK Controlled Release Society** Meeting "Controlled Release in the UK - current perspectives and future horizons", Nottingham, Jan 9th, 1995 (140 participants)

Co-organiser of **Controlled Release Society** Meeting Workshop "Novel approaches to biomaterials characterisation", Seattle, July 30th - August 2nd 1995.

Organiser and host of the **Royal Microscopic Society** "Scanning Probe Microscopy", Nottingham, April 24-25th, 1995

Co-organiser and host of the **EPSRC Nanotechnology** Meeting "Biological Applications of Nanotechnology", Nottingham, June, 1995.

Member of Organising Committee, **European Biomaterials Conference**, Porto, September 1995.

2000 Science Chairman, Millennium meeting of **British Pharmaceutical Conference**, Royal Pharmaceutical Society of Great Britain, Birmingham International Convention Centre, September 2000 (1700 attendees).

Co-organiser (with Dr Jane Lawrence, Kings College, University of London), Biological Sessions, and Member of Organising Committee, **10th International Conference on Colloid & Interface Science**, Bristol, June 2000 (150-200 attendees in sessions).

Symposium Session Organiser, "**The Genomic Revolution; an update"; British Pharmaceutical Conference, Royal Pharmaceutical Society of Great Britain**. Glasgow Conference Centre, September 2001.

2001 Member of Advisory Board for the **5th International Symposium on Polymer Therapeutics: From Laboratory to Clinical Practice** (with Ruth Duncan and Helmut Ringsdorf & International Advisory Committee), Welsh School of Pharmacy, Cardiff University 3-5 January 2002.

2002 Scientific Secretary, **29th Annual Meeting Controlled Release Society**, July 20-25, Seoul, Korea
Organising Committee and Session Chair, **Surface Engineering for Competitive Advantage, Advanced Materials Research Institute**

2003 Programme Organising (with J Kopeck, K Park, J Anderson, S-J Lee), **Joint CRS-Utah Polymer Therapeutics Meeting**, March 3-5
Scientific Secretary, **30th Annual Meeting Controlled Release Society**, July 19-23, Glasgow
Special Drug Delivery Session in Honour of Bob Davis, **British Pharmaceutical Conference**, Harrogate, September 15-17

2004 Scientific Secretary, **31st Annual Meeting Controlled Release Society**, 12th-16th June 2004, Hawaii, USA

2005 Organising Committee, **3rd Symposium on Nanomedicine and Drug Delivery**, October 2005, Baltimore
Scientific Secretary, **32nd Annual Meeting Controlled Release Society**, 20-22nd June, Miami, USA

2006 Scientific Secretary, **33rd Annual Meeting Controlled Release Society**, Vienna, 22nd-6th July 2006
Organising Committee, **4th International Nanomedicine and Drug Delivery Symposium**, Omaha, 8-10th October 2006

2007 Scientific Secretary, **34th Annual Meeting Controlled Release Society**, Long Beach, 7th-12th July 2007

(VI) SERVICE TO PROFESSIONAL AND LEARNED SOCIETIES

Member of UK ESCA Users Group Committee (1991-95)

Founder of the UK Controlled Release Society, Acting-Chairman of the Steering Committee, Elected Secretary (1994-97); Organiser of Inaugural Meeting.

Member of the Controlled Release Society Best Conference Paper Committee (1993-96) and Global Chapters Committee (1994-7)

Member of the Biomaterial Interfaces Committee of the American Vacuum Society (1994-99; 2000-1).

Member of the Board of Governors, Controlled Release Society (1997-2000)

Member, National Initiative Drug Delivery, Royal Pharmaceutical Society of Great Britain (1998).

Member, Academy of Pharmaceutical Sciences and Science Committees, Royal Pharmaceutical Society of Great Britain (1998-2000)

Member, Science Committee, Royal Pharmaceutical Society of Great Britain (1999-2001).

Scientific Secretary and Member of Board, Controlled Release Society (2001-2007)

Fellow, American Institute for Medical and Biological Engineering (2003-)

Fellow (retired), Royal Pharmaceutical Society (2003-)

Member, Academy of Pharmaceutical Sciences Advisory Board (2003-7)

Member, Royal Society of Medicine (2007-)

Member, RAE 2008 Sub Panel 13 – Pharmacy (2006-8)

Member, Department of Health, Modernising Pharmacy Careers Programme Board (2009)

Vice-President and Member of the Board, Controlled Release Society (2010-13)

Fellow, Academy of Pharmaceutical Sciences (2010-)

President and Member of the Board, Controlled Release Society (2011-12)

(VII) MEMBERSHIP OF EDITORIAL BOARDS

Editor: Nanobiology (1993-1999)
Associate Editor: Drug Delivery and Translational Research (2011-)
Guest Editor: The Analyst (1994: Scanning Probe Microscopy Edition)

Editorial Boards:

- Advanced Drug Delivery Reviews (2000-10)
- European Journal of Pharmaceutical Sciences (2001-)
- Journal of Controlled Release (2004-18)
- Journal of Biopharmaceutics and Biotechnology (2005-)
- Journal of Pharmaceutical Sciences (2008-)
- Pharmaceutical Nanotechnology (2010-)
- Journal of Drug Delivery and Translational Research (2010-18)

(VII) MEMBERSHIP OF LEARNED SOCIETIES

- Royal Pharmaceutical Society of Great Britain (Fellow, retired)
- Royal Society of Chemistry (Fellow)
- Royal Society of Medicine
- American Institute for Medical and Biological Engineering (Fellow)
- Controlled Release Society (Fellow)
- UK Academy of Pharmaceutical Scientists (Fellow, retired)

(VIII) DIRECTORSHIPS & INDUSTRIAL ADVISORY BOARDS

- Co-Founder, Director and Chairman, Molecular Profiles (1998-13)
- Advisor to Board, Columbia Laboratories Ltd (2013-15)
- Advisor to Board, JuniperPharma Ltd (2015-18)
- Chair, Scientific Advisory Board, Columbia Laboratories & JuniperPharma (2013-17)
- Member, Scientific Advisory Board, Quadrant Healthcare Ltd. (1998-2001).
- Director, Regentec (2001-6)
- Member, Board, Critical Pharmaceuticals (2007-10)

DEPARTMENTAL and UNIVERSITY DUTIES

DEPARTMENT DUTIES

- Chair, Researchers Forum Committee (2008-12)
- Member, Knowledge Transfer Committee (2009-), Chair (2011-)
- DTC First Year Postgraduate Tutor, EPSRC and AstraZeneca Doctoral Training Centre in Targetted Therapeutics (2008-2017)
- Member, School Management Group (2011-2015)
- Head, The Pharmacy School and The School of Pharmaceutical Sciences (2000-2003)
- Deputy-Head, School of Pharmacy (1997-2000)
- Chair, Departmental Postgraduate Committee (1997-9)
- Chair, Institute of Pharmaceutical Sciences Development Committee (1997-2000)

- Member, Department Management Group (1995-2008)
- Member, Curriculum Review Committee (1994-97)
- Member, Departmental Strategy Group (1993-2008)
- Member, Course Review Committee (1993-98)
- Member, Research Committee, Teaching Quality Audit (1993-99)
- Department Postgraduate Tutor (1989-96)
- Coordinator, Drug Delivery section of undergraduate course (1985-96)
- Undergraduate admissions (1985-2017)
- Academic Tutor and Mentor (1985-2017)

UNIVERSITY DUTIES

- Member, Innovation Board (2011-2017)
- Member, Campaign Strategy Board (2013-2017)
- Member, Technical Grading Panel (2000-2003)
- Member, Senate (2000-2003)
- Member, Strategy Group for Information Services Committee (1999-2003).
- Member, Materials Strategy Committee (1998-2001).
- Inaugral co-Chair, Cancer Research Center at Nottingham (CRN) (2003-4)
- Chair, University Postgraduate Training Committee (1996-98)
- Vice Dean, Health Sciences, Life Sciences and Agricultural Division (43 Depts) Nottingham University Graduate School (1995-97)
- Member of 19 University Appointment Boards for lectureships and Professorial chairs (1987-2017)
- Member, University Student Affairs Committee (1995-97)
- Member, Science, Agricultural and Medical Postgraduate Studies Committees (1995-1998)

RESEARCH SUPERVISION

(A) POSTGRADUATE STUDENTS (OVER 70 SINCE 1985)

From 1986, I have co-supervised over 70 PhD students to successfully complete and defend their PhD thesis. Many have gone onto postdoctoral fellowships (including Nottingham (4), Cambridge, Strathclyde, Surrey, London, MIT (2), ETH (Zurich), University of Washington, Georgia Institute of Technology, University of Michigan), many hold prominent posts within the Pharmaceutical, Chemical, Polymer & Diagnostics Industries and 1 has moved successfully into Pharmacy Management. My first student is now Director for Drug Delivery of a multinational pharmaceutical company.

(B) POSTDOCTORAL RESEARCH WORKERS (OVER 40 SINCE 1985)

I have co-supervised more than 40 postdoctoral fellows since 1985 whose previous scientific training ranged from Biochemistry, Surface Science, Polymer Chemistry, Electronic Engineering, Biophysics, Physics, Physical Chemistry, Analytical Chemistry and Pharmaceutical Sciences.

I am proud that over 20 have moved onto academic postions in University Science (7) and Pharmacy (8) Departments and 6 hold personal chairs (Professors) in internationally leading research Schools. Some have moved onto further prestigious postdoctoral fellowships, where 2 have been awarded a BBSRC Advanced Training Fellowship and 2 have been awarded an EPSRC Advanced Training Fellowship.

RESEARCH GRANTS and CONTRACTS

(I) SPECIAL RESEARCH STUDENTSHIPS AWARDED

1985 - SERC Quota studentship.
1986 - 2 SERC Quota studentships.
1987 - 2 SERC Case awards with Cyanamid and Polymer Laboratories.
1988 - 2 SERC Instant and 2 SERC Quota awards.
1989 - 2 SERC Quotas and 1 SERC Instant award.
1990 - SERC Case award with Celltech, 1 EEC Brite awards, and 1 from industry (Dow).
1991 - 2 EEC Brite awards, 1 MAFF/DTI award and 2 from industry (Viggo, Kelco).
1992 - SERC Quota award, 1 EEC Brite award and 1 MAFF/DTI award.
1993 - 1 EEC Brite awards, 1 SERC Case award with SmithKlineBeecham and one award from industry (Courtaulds)
1994 - 1 SERC Case Award with Kodak Ltd, SERC Quota award and one award from industry (Alpha Beta Ltd)
1995 - 1 BBSRC Quota award, 2 Departmental CASE awards (Oxford Molecular Ltd and SmithKline Beecham), one award from industry (Lilly Group Research)
1996 - 2 BBSRC Quota awards and 2 BBSRC Case awards (SmithKline Beecham and Severn Trent)
1997 - BBSRC Quota awards, 1 BBSRC and EPSRC Case awards (SmithKline Beecham and Biocompatibles Ltd). 1 special EPSRC studentship unfilled.
1998 - BBSRC Quota award and EPSRC Case Awards (Smithkline Beecham) and 2 University awards.
1999 - BBSRC Case award (Glaxo Wellcome)
2000 - BBSRC Case award (Biocompatibles)
2001 - 1 BBSRC Quota award, 1 BBSRC Committee Studentship – "Nanometre-scale surface chemical characterization of engineered biomimetic materials"
2002 - BBSRC Committee Studentship – "Molecular-scale characterization of Gene Therapy Delivery Systems"
2003 - BBSRC Case Award (GlaxoSmithKline), EPSRC Case Award (Avecia)
2006 - BBSRC Strategic Studentship "Nanoscale analysis of polymer microarrays for biomaterial stem cell interaction"
- EPSRC Studentship with National Physical Laboratory
2007 - Industrial Studentship (Unilever)
2008 - Industrial Studentship (3M)
- EPSRC Doctoral Training studentship
2009 - Industrial Studentship (3M)
- RSPGB Academic Excellence Award Studentship
2010 - Industrial Studentship (Abbott)
2011-5 - 3 Doctoral Training studentships

(II) GENERAL RESEARCH AWARDS

The detailed list of the general research awards obtained since 1985 is shown below. Most are collaborative with grants with colleagues in the Laboratory of Biophysics & Surface Analysis. No contract research awards are shown.

1986 £2,000 **Nuffield Foundation Award**. "The surface analysis of oral vaccines".

£4,290 **SERC**, award for studies at SERC regional centre,"Surface analysis of biomaterials and pharmaceuticals with SIMS".

1987 £36,205 **SERC**, "ToF-SIMS analysis of protein adsorption".

	£41,000	**SERC**, "Colloidal carriers for drug targeting", (cooperative award with ICI Pharmaceuticals); (with Prof S S Davis).
	£23,500	**Reckitt and Colman**, "Novel microparticulate systems for oral drug delivery".
	£9,000	**Cyanamid**, "Polymer-drug-conjugates", (with Drs P.N.Shaw and I.S.Blagbrough).
	£7,000	**Polymer Laboratories** "Immobilization of biomolecules to colloid surfaces".
	£42,000	**Pharmatec** "Controlled release of drugs from polymeric matrices", (with Dr C.D.Melia and Prof S.S.Davis).
1988	£60,000	**MRC**, "Colloidal systems for aids vaccine" (with Dr P Williams and Prof S S Davis).
	£30,000	**WHO**, "Particulate systems as oral vaccines" (with Dr P Williams and Prof S S Davis).
	£67,775	**SERC Grant** "The Selective Delivery of Drug Carriers to Bone Marrow" (with Prof SS Davis and Dr PM Williams)
1989	£15,000	**Reckitt and Colman** "Novel microparticulate systems for oral drug delivery", (with Drs C Wilson and CD Melia).
	£5,000	**Courtaulds Research**, contribution towards SERC Case award, "FT-Raman spectroscopy of biomaterials".
	£33,950	**SERC**, "ToF-SIMS analysis of polymeric biomaterials and pharmaceuticals".
	£67,653	**SERC**, (1989-1992) "Drug targeting to tissue sites using colloidal delivery systems: phase 2 Biodegradable colloids" (with Profs SS Davis and L Illum)
1990	£40,000	**SERC**, "SIMS analysis of biomaterials"(with Profs SS Davis and JV Wood).
	£46,000	**SERC**, "Novel microparticles for colonic drug delivery", (cooperative award with Reckitt and Colman); (with Drs CD Melia, CG Wilson and R Spiller).
	£32,000	**Dow (Europe)** "Controlled release of drugs from novel polymer systems", (with Dr CD Melia).
	£52,000	**SERC**, "Biodegradable colloids for drug targeting", (cooperative award with ICI Pharmaceuticals); (with Prof SS Davis).
	£80,000	**EEC BRITE award**, "Surface analysis of hydroxyapatite biomaterials coatings".
	£620,000	**EEC BRITE** award "Novel surface coatings for colloidal particulates", (with Prof SS Davis).
	£6,000	**Celltech** "STM of monoclonal antibodies", (with Dr SJB Tendler).

1991	£1,032,000	**MAFF/DTI /LINK** Scheme "The hydration of food and pharmaceutical systems in food and pharmaceutical industries" (with Drs CD Melia, DE Jackson and J Mitchell).
	£58,000	**SERC** "Surface characterization and chromatographic behaviour of alkyl bonded silaceous chromatographic materials", (with Drs P N Shaw and D Barrett).
	£420,000	**SERC/DTI LINK** scheme "The development of scanning tunnelling microscopy into a biophysical tool for the investigation of protein structure and function" with VG Microtech and Glaxo Group Research (with Drs S J B Tendler and D E Jackson).
	£91,000	**Kelco International** "A study of hydrophilic characteristics of alginate and xanthan"(with Drs J R Mitchell and C D Melia).
	£39,000	**Viggo-Spectramed** "Surface interaction of drugs with polymers".
	£15,000	**Dow** (Europe), additional funds for the project, "Controlled release of drugs from novel polymer systems", (with Dr C.D.Melia).
1992	£111,640	**SERC Teaching company scheme** "Colon drug delivery" (with Drs Spiller, Wiseman, and Haresign) with Danbiosyst.
	£87,000	**EEC BRITE** award "Design and evaluation of a heparin adsorbing filter for application in extracorporeal haemodialysis" in collaboration with the Universities of Gent and Brescia [At Nottingham].
	£140,000	**EEC BRITE** award "The development of improved biocompatible materials for urological and other medical devices" in collaboration with Kodak Ltd, Fidia spa, Universities of Naples, Brighton and Gent and St Bartholomews Hospital. [At Nottingham]
1993	£742,000	**SERC/DTI LINK** scheme, Nanotechnology initiative "The development of atomic force microscopy for biomedical applications in nanotechnology" with Kodak Ltd, VG Microtech, and Oxford Molecular. Equipment donated by Hewlett Packard (with Drs S J B Tendler and D E Jackson).
	£82,798	**SERC** "Surface modification of porous graphitic carbon as a chromatographic support for the separation of chiral and polar compounds" with Shandon Scientific (with Drs P N Shaw and D Barrett).
	£45,000	**SERC** "An integrated surface plasmon resonance / scanning probe microscope for biomolecular analysis" (with Drs S J B Tendler and D E Jackson).
	£37,748	**Courtaulds** "Studentship to study the surface analysis of surfactant adsorption at polymer films" (with Dr S J B Tendler).

	£36,000	**SERC Case Award with SmithKline Beecham** "Scanning probe microscopy of biomolecular structure and function" (with Dr S J BTendler).
1994	£144,911	**SERC** "Novel polymer support materials for the chromatographic separation of biomolecules" with Polymer Laboratories (with Drs P N Shaw and D Barrett).
	£36,000	**Alpha-Beta Ltd** "Studentship on Scanning Probe Microscopy studies of novel polysaccharides" (with Dr S J B Tendler).
1995	£54,855	**EPSRC** (1995-1997) "Novel algorithms for the investigation and reconstruction of surface structure by scanning probe microscopy" (with S J B Tendler and C J Roberts).
	£38,000	**Lilly Group Research** (1995-1998) "Scanning probe microscopy of biomolecular structure" (with S J B Tendler and C J Roberts).
	£126,136	**BBSRC**, "Chromatographic materials for the specific separation of oligonucleotides and nucleic acids" (with Drs P N Shaw and D A Barrett).
	£24,641	**EPSRC Project Grant** (1995-1997) "Probing forces of molecular interactions" (with SJB Tendler and CJ Roberts).
	£36,000	**Oxford Molecular/University of Nottingham** (1995-1998) "Computational investigations of scanning probe microscopy" (with S J B Tendler and C.J.Roberts).
	£472,974	**EPSRC Project Grant** (1995-1999) "The development of a unique imaging TOFSIMS instrument with femtosecond laser positionization capability" (with Prof JC Vickerman and Drs CM Carr and GJ Leggett)
1996	£150,521	**EPSRC** (1996-1998) "The development of advanced analytical tools for the rapid screening of immobilized combinatorial libraries" (with S.J.B.Tendler and C.J. Roberts).
	£160,000	**Cancer Research Campaign Programme Grant** (1996-2000) "SPM Studies of drug-DNA interactions" (with S.J.B.Tendler and M.F.G. Stevens).
	£212,000	**BBSRC Equipment and Industry Initiative** "The development of a near-field optical probe technology into a biophysical tool for the study of biomolecular and biological systems". BBSRC £106,000, Topometrix Corporation £106,000.(with S.J.B.Tendler and C.J. Roberts).
	£151,456	**BBSRC** Project Grant (1996-1999) "Probing and optimising immunosensor surfaces at the molecular level" (with S.J.B.Tendler, C.J. Roberts and Johnson and Johnson Clinical Diagnostics).
	£60,000	**Hewlett-Packard** Instrument Donation (1996-1997) "Computational algorithms for scanning probe microscopy analysis" (with S.J.B.Tendler, C.J. Roberts and P.M. Williams).

£25,333 **EPSRC** Project Grant (1996-1997) "The characterization of refractive index in thin films to nanometre spatial resolution" (with S.J.B.Tendler, P.M. Williams and C.J. Roberts).

£14,000 **SmithKline Beecham plc** (1996-1999) "Scanning probe microscopy studies of biomolecular structure and function" (with S.J.B.Tendler and C.J. Roberts).

£15,000 **Severn Trent plc** (1996-1999) "Electrokinetic analysis - applications in pharmaceutical analysis" (with S.J.B.Tendler and C.J. Roberts).

£104,833 **Action Research** (1996-1999) " The role of protein interactions with novel polymers used in tissue repair" (with S.J.B.Tendler, S Downes and C.J.Roberts).

£30,000 **Royal Society Paul Instrument Fund** (1996-1997) "For the construction of a quantitative intermolecular force sensor" (with S.J.B.Tendler and C.J. Roberts).

£47,413 **Elan Corporation** (1996-1997) "Surface Chemistry of peptide grafted polymer surfaces" (with S J B Tendler and C.J.Roberts).

1997 £132,684 **BBSRC Project Grant** (1997-2000) "Atomic force microscopy characterisation of the molecular forces of adhesion in nucleic acids" (with S J B Tendler, C J Roberts and C Laughton).

£145, 656 **BBSRC Project Grant** (1997-2001) "The study of biomolecular and biomedical systems by near-field optical microscopy" (with S J B Tendler, C J Roberts and P M Williams).

£554,000 **BBSRC Link Scheme (Analytical Biotechnology Initiative)** (1997-2001) "Two-dimensional mapping of molecular interactions at the interfaces of next generation immunoassay systems"
£230,000 - BBSRC,
£264,000 - Johnson and Johnson Clinical Diagnostics,
£60,000 - Digital Instruments/LOT Oriel.
(with S J B Tendler, C.J. Roberts and P.M. Williams).

£59,129 **Glaxo Wellcome Project Grant** (1997-1998) "Biophysical evaluation of DNA-Lipid complexes" (with P M Williams, C J Roberts and S J B Tendler).

£14,000 **SmithKline Beecham plc** (1997-2000) "Surface characterization of drug crystals using novel atomic force microscopy techniques" (with S J B Tendler, P.M.Williams and C.J. Roberts).

£15,000 **Biocompatibles plc** (1997-2000) "SPM studies of biocompatible surfaces" (with S J B Tendler, P.M. Williams and C.J. Roberts).

45,812 **EU Human Captital Mobility Award** "Study of Biointeractions at ECU functionalized polymeric surfaces" (with S.J.B.Tendler, C.J. Roberts and S O Vansteenkiste, Universiteit Gent, Belgium).

	£30,000	**BBSRC Special Studentship** (1997-2000) "Regulation of peptide epitope and mimotope recognition by antibodies (with SJB Tendler and MR Price).
	£147,121	**BBSRC Project Grant** (1999-2000), "The study of biomolecular and biomedical surfaces by near-field optical microscopy" (with SJB Tendler and CJ Roberts).
1998	182,000	**EU BRITE- EURAM Programme** "Lipostin". Partners ECU include Universities of Brighton, Gent, Naples and Milan (with S Howdle).
	£43,000	**Elan Corporation Project Grant** "Surface Chemistry of peptide grafted polymer surfaces II" (with SJB Tendler, PM Williams and CJ Roberts).
	£158,980	**BBSRC Project Grant** (1998-2001) "Spatially controlled cell engineering: A strategy to control nervous tissue micro-architecture" (with K Shakesheff, SJB Tendler, PM Williams and CJ Roberts).
	£13,200	**University of Nottingham, Research Committee** "A bioengineering solution to the prevention of bacterial colonisation on biomaterials" (with K Shakesheff and Miguel Camara).
	£251,328	**EPSRC Project Grant** (1998-2001) "Manufacturing of Biointeractive Scaffolds for Tissue Engineering using Supercritical Fluid Technology" (with SM Howdle & Kevin Shakesheff).
	£15,000	**Oxford Molecular/BBSRC CASE Award** (1998-2001) "Computational studies on biomolecular recognition" (with SJB Tendler, CJ Roberts & PM Williams).
	£30,000	**Royal Pharmaceutical Society Studentship** (1998-2001) "AFM studies of drug/DNA interactions" (with SJB Tendler, CJ Roberts & PM Williams).
	£30,000	**BBSRC Special Studentship** (1998-2001) "Near-field probe microscopy of micro-patterned biomolecular surfaces in aqueous environments" (with SJB Tendler, CJ Roberts, & PM Williams).
	£30,000	**University of Nottingham/Orthoclinical Diagnostics Studentship** (1998-2001) "Manipulation of biomolecules by optical tweezers and probe microscopy in an epifluorescence optical microscope" (with SJB Tendler, CJ Roberts & PM Williams).
	£9,762	**Royal Society Equipment Award** (1998-1999) "Combined optical tweezers and atomic force microscopy" (with SJB Tendler, CJ Roberts & PM Williams).
	£51,202	**EPSRC Analytical Science Programme Project Grant** (1998-2001) "Analysis of near-field optical contrast: Chemical sensing at the nanoscale" (with SJB Tendler, CJ Roberts & PM Williams).

1999	£338,960	**EPSRC Project Grant** (1999-2002) "Instrumentation for the spatial analysis of reactions at interfaces" (with PM Williams, Dr CJ Roberts, SJB Tendler, KM Shakesheff).
	£173,648	**BBSRC Project Grant** (1999-2001) "The Dynamics of Biomolecules at Interfaces studied by Pulsed Force Atomic Force Microscopy" (with SJB Tendler, CJ Roberts, PM Williams).
	£37,000	**EPSRC Industrial Studentship with SmithKline Beecham** (1999-2002) "Initiation and growth of drug crystals" (with CJ Roberts, SJB Tendler, PM Williams, H Saibil, London).
	£251,328	**EPSRC Project Grant** (1999-2002) "Manufacturing of biointeractive scaffolds for tissue engineering using super critical fluid technology" (with Profs S Howdle and KM Shakesheff).
	£34,000	**BBSRC Special Studentship** (1999-2002) "3D reconstruction of structure" (with SJB Tendler, CJ Roberts, PM Williams).
	£2,200,00	**Joint Infrastructure Fund** (1999-2001) "New Institute of Pharmaceutical Sciences" (with BW Bycroft (Principle applicant) and SJB Tendler).
2000	£223,123	**EPSRC Multi User Equipment Grant** (2000-2002) "The thermal characterisation of materials at the sub-micron scale by scanning thermal microscopy" (with CJ Roberts, SJB Tendler, SM Howdle, KM Shakesheff, DM Grant, PM Williams, S Allen).
	£301,000	**BBSRC Project Grant** (2000-2003) "Cryogenic Force Microscopy of Biomolecular Structure" (with SJB Tendler, CJ Roberts, PM Williams, S Allen, Oxford Instrument and SmithKline Beecham).
	£153,540	**BBSRC Project Grant** (2000-2003) "The investigation of molecular interactions in ribonucleic acids" (with S Allen and SJB Tendler).
2001	£365,000	**EPSRC Strategic Equipment Initiative Grant** "Time-of-flight secondary ion mass spectrometry" (with D Briggs & M Chesters).
	£60,330	**EPSRC Project Grant** (2001-2004) "The development of a magnetically controlled force microscope, for high resolution single molecule force spectroscopy" (with S Allen, CJ Roberts, SJB Tendler, PM Williams).
	£348,903	**EPSRC Project Grant** (2001-2004) "The direct measurements of single macromolecule-membrane interactions" (with P O'Shea, & S Allen).
	£229,428	**BBSRC Grant** (2001-2004) "Biomembrane force probe for mapping energy landscapes in protein interactions and folding" (with S Allen, SJB Tendler, P Williams & CJ Roberts).
2002	£653,331	**EPSRC Grant** (2002-2005) "Characterisation of Surfaces, Thin Films and Nanometre Scale Structures by X-Ray Photoelectron Spectroscopy" (with D Briggs, SJB Tendler, CJ Roberts, KM Shakesheff, MA Chesters, SM Howdle, Dr P Moriarty).

	£109,756	**EU Marie Curie Training Site Status** "Atomic Force Microscopy of Biomolecules & Materials Relevant to Healthcare"
	£253,703	**EPSRC Grant** (2002-2005) "Biomimetic Fibres for Tissue Engineering" (with KM Shakesheff, CD Melia, D Briggs and C Ives).
2003	£24,000	**BBSRC Case Studentship with GlaxoSmithkline** (2003-2006)
	£20,000	**EPSRC Case Studentship with Avecia** (2003-2006)
2005	£299,658	**BBSRC Grant** (2005-2008) "Defining nanoscale high through-put screening of stem cell - biomaterial interactions"
		BBSRC Strategic Studentship "Nanoscale analysis of polymer microarrays for biomaterial stem cell interaction"
	£324,976	**EPSRC Grant** (2005-2008) "Pico-Newton MEMS Technology for Biological Force Measurement"
2006	£222,024	**Tibotec Pharmaceuticals Ltd** (2006-2008) "Characterisation of solid dispersions" (with C Roberts)
	£558,000	**Nitto Denko Corporation** (2006-2008) "Development of a novel nanoparticulate systems for mucosal delivery (nasal and buccal)" (with S Stolnik, C Roberts)
	£186,268	**EPSRC** (2006-2010) "Colloidal Cell Delivery Systems" (with C Alexander, K Shakesheff)
2007	£362,695	**EPSRC** (2007-2012) "Centre for comprehensive materials analysis" (with C Roberts, R Jones, J Henderson, P Brown, M Alexander)
2008	£1,121,481	**wellcome Trust** (2008-2012) "Polymers resistant to bacterial colonization" (with M Alexander and P Williams)
2009		**3M** studentship on inhalation particulate interactions
2010	£33,699	**Abbott** studentship on drug eluting stents (2010-2013)
	£1,965,861	**EPSRC** (2010-2013) "Future-proof synthetic surfaces for the automated manufacture of human pluripotent stem cells (with M Alexander, C Denning, L Young and D Barrett)
	£20,006	**RPSGB** studentship (2010-2013)
2011		International student (with J.Burley & M.Alexander)
2012	£25,000	University of Nottingham **Hermes Fellowship** "Building a case for first-in-man anti infection catheter trial" (with M.A.Alexander, and P.Williams) (2/12-8/12)
2014	$140,000	**J&J Vision** (with M.A.Alexander, C.J.Roberts and M.Piggott)

2015	£6,603,692	**EPSRC** (2015-2020) "Next Generation Biomaterials Discovery" programe grant (with M.A.Alexander (PI), C.Alexander, K.Shakesheff, R.Hague, D.Irvine, P.Williams, A.Ghaemmaghami, R.Wildman, C.Denning, A.M.Grabowska).
2015	$250,000	**J&J Vision** (with M.A.Alexander, C.J.Roberts and M.Piggott)
2015		International studentship (with D.Scurr & M.A.Alexander)

PUBLICATIONS RELATED TO RESEARCH

All papers cited below have been reviewed within peered-reviewed journals and books.

FULL PAPERS

1. J.C. Gilbert, C.Washington, M.C.Davies, and J.Hadgraft "The behaviour of Pluronic F-127 in aqueous solution studied using fluorescent probes" ***International Journal of Pharmaceutics*** 40, 93-99 (1987).

2. J.C.Gilbert, J.L.Richardson, M.C.Davies, K.J.Palin and J. Hadgraft "The effect of solutes and polymers on the gelation properties of Pluronic F-127 solutions for controlled drug delivery" ***Journal of Controlled Release*** 5, 113-118 (1988).

3. M.C.Davies, A.Brown, J.M.Newton and S.R.Chapman "SSIMS and SIMS imaging analysis of a drug delivery system" ***Surface and Interfacial Analysis*** 11, 591-595 (1988).

4. R.A.P.Lynn, M.C.Davies, R.D.Short, S.S.Davis, J.C.Vickerman and P. Humphrey "Characterization of polymer colloids by SSIMS and XPS" ***Polymer Communications*** 29, 365-367 (1988).

5. D.W.Fakes, M.C.Davies, J.M.Newton and A.Brown "The surface analysis of a plasma modified contact lens surface by SSIMS" ***Surface and Interfacial Analysis*** 13, 233-236 (1988).

6. M.C.Davies, R.D.Short, J.C.Vickerman and P.Humphrey "The analysis of cellulose ethers by secondary ion mass spectroscopy" ***Polymer and Material Science and Engineering*** 59, 729-733 (1988).

7. M.C.Davies, R.D.Short, S.P.Denyer, J.C.Vickerman, M.A.Khan, S.S.Davis and P.Humphrey "The surface characterization of untreated and plasma modified polyesters by SSIMS, XPS and bacterial adhesion" ***ibid***, 59, 739-743 (1988).

8. M.Roberts, M.C.Davies, S.S.Davis and P. Williams "The production of stable, protein coated microspheres" ***Journal of Colloid and Interfacial Science***, 132(2), 585 - 588 (1989).

9. M.C.Davies, A.Brown, M.A.Khan and P.Humphrey "Quantitative static secondary ion mass spectrometry analysis (SSIMS) of polymers" ***6th International Conference on SIMS***, Versailles, Ed A.Benninghoven, A.M.Huber and H.W.Werner, J. Wiley, 667-690 (1989).

10. M.C.Davies, R.D.Short, M.A.Khan, J.F.Watts, A.Brown, A.J.Eccles, P. Humphrey, J.C.Vickerman and M.Vert "An XPS, static SIMS and ToF-SIMS analysis of biodegradable biomedical polyesters" ***Surface and Interfacial Analysis***, 14, 115-120 (1989).

11. R.D.Short and M.C.Davies "Radical cations in SIMS spectra of polymers" ***International Journal of Mass Spectrometry and Ion Formation***, 89, 149-155 (1989).

12. F.Koosha, M.C.Davies, R.H.Muller and S.S.Davis "The surface chemical structure of poly(B-hydroxybutyrate) microparticles produced by the solvent evaporation process" ***Journal of Controlled Release***, 9, 149-157 (1989).

13. M.C.Davies, I.R.Wilding, R.D.Short, M.A.Khan, J.F.Watts and C.D.Melia "An analysis of the surface chemical structure of Eudragit film coating polymers by XPS" ***International Journal of Pharmaceutics***, 57, 183-187 (1989).

14. R.K.Kallury, V.J.Kroll, M.Thompson, R.D.Short and M.C.Davies "XPS and SSIMS analysis of phospholipids immobilized to silanized silica surface" ***Analytical Chemica Acta***, 225, 369-389 (1989).

15. S.P.Denyer, J.A.Evans, M.C.Davies, R.G.Finch, D.G.E.Smith, M.H.Wilcox and P.Williams "Phenotypic changes in Staphylococcal cell surface characteristics associated with growth in human peritoneal dialysis fluid", in: ***Pathogenisis of Wound and Biomaterial-Associated Infections***, Eds: T.Wadstrom, L.Eliasson and A.Ljungh, Springer-Verlag London UK, 450-455 (1990).

16. M.C.Davies, R.C.Rowe and R.D.Short "Surface chemical characterization of cellulose derivatives by SSIMS" In: ***Cellucon 89***, P. A.Williams, Ed., Ellis Horwood Ltd, Chichester, (Chapter 43) 345-352 (1990).

17. M.C.Davies, I.R.Wilding, C.D. Melia and A. Brown) "SSIMS analysis of Methacrylate copolymers" ***Journal of Applied Polymer Science*** 39, 1827-1835 (1990).

18. M.C.Davies, M.A.Khan, R.D.Short, C.Pouton, M.K.Aktar and J.F.Watts "SIMS and XPS analysis of poly(caprolactone) and poly(hydroxybutyrate-valerate) copolymers" ***Biomaterials***, 11, 228-234 (1990).

19. M.C.Davies, R.A.P.Lynn, S.S.Davis and J.Hearn "Surface analysis of polymer latex particles by SIMS and XPS" ***Polymer and Material Science and Engineering***, 62, 889-894 (1990).

20. S.P.Denyer, J.A.Evans, M.C.Davies, R.G.Finch, D.G.E.Smith, M.H.Wilcox and P Williams) "Influence of carbon dioxide on the surface characteristic and adherence potential of coagulase-negative staphylococci", ***Journal of Clinical Microbiology***, 28, 1813-1817 (1990).

21. M.C.Davies, I.R.Wilding, R.D.Short, C.D.Melia and R.C.Rowe "The in situ chemical analysis of polymer film coatings using static secondary ion mass spectrometry (SSIMS)" ***International Journal of Pharmaceutics***, 62, 97-103 (1990).

22. M.C.Davies, D.E.Jackson, M.R.Price and S.J.B.Tendler "Scanning tunneling microscopy imaging of the tumor associated antigenic 20 amino acid human polymorphic epithelial mucin core peptide fragment" ***Cancer Letters***, 55, 13-16 (1990).

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PUBLISHED ABSTRACTS

Well over **300 abstracts** (mostly peer-reviewed) have been submitted to international scientific meetings.

PATENTS

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Coinventors – Professor M.C. Davies, Dr. S. Clarke, Dr. A.L. Lewis

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