

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 Pharmaceuticals.
- 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 was 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, Middlesbrough.
 - 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** - **Eidgenossische 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 Society of Chemistry-Faraday Division**, University of East Anglia, April 1998.
- **5th 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 | <ul style="list-style-type: none"> - 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 | <ul style="list-style-type: none"> - 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 Coleraine
- 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 Targeted 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).
- Inaugural 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 positions 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 Capital 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" programme grant (with M.A.Alexander (PI), C.Alexander, K.Shakesheff, R.Hague, D.Irvine, P.Williams, A.Ghaemmamghami, 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 peer-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: **Pathogenesis 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).
23. M.C.Davies, J.S.Binns, C.D.Melia and D.Bourgeois "FT-Raman spectroscopy of polymeric biomaterials and drug delivery systems" **Spectrochimica Acta**, 46A, 227-283 (1990).
24. M.C.Davies, A.M.Tudor, C.D.Melia, J.S.Binns, P.J.Hendra and S.Church "FT-Raman spectroscopy of pharmaceuticals" **Journal of Pharmaceutical Biomedical Analysis**, 8, 717-720 (1990).
25. M.C.Davies, J.Binns, C.D.Melia, P.Hendra, S.Church and P Stephenson "FT-Raman spectroscopy of drugs and polymeric delivery systems" **International Journal of Pharmaceutics**, 66 223-232 (1990).
26. G.R.Harper, S.S.Davis, Th.F.Tadros, M.C.Davies, D.C.Taylor, M.P.Irving and J.A.Waters "Steric stabilization of microspheres with grafted poly(ethylene oxide)

- reduces phagocytosis by rat Kupffer cells in vitro" **Biomaterials**, 12, 695-700 (1991).
27. M.C. Davies, M.A.Khan, R.A.P.Lynn, J.Heller and J.F.Watts "X-ray photoelectron spectroscopy analysis of the surface chemical structure of some biodegradable poly(orthoesters)" **Biomaterials**, 12, 305-308 (1991).
 28. M.C.Davies, M.A.Khan, A.Domb, R.Langer, J.F.Watts and A.J. Paul "The analysis of the surface chemical structure of biomedical aliphatic poly(anhydrides) using XPS and ToF-SIMS" **Journal of Applied Polymer Science**, 42, 1597-1605 (1991).
 29. M.C.Davies, R.A.P.Lynn, J.Heller, A.J.Paul and J.C.Vickerman "The ToF-SIMS and XPS characterization of the surface chemical structure of some biomedical degradable poly(orthoesters)" **Macromolecules**, 24(20), 5508-5514 (1991).
 30. C.J.Roberts, M.C.Davies, D.E.Jackson, S.J.B.Tendler and P.M.Williams "Controlled nanometer-scale line and symbol formation on graphite in air using a scanning tunneling microscope" **Journal of Physics E: Condensed Matter**, 3, 7213-7216 (1991).
 31. C.J.Roberts, M.J.Wilkins, M.C.Davies, D.E.Jackson, S.J.B.Tendler, P.M.Williams, P.D.Scholes and G.Beamson "The demonstration of controlled probe sample interaction effects achievable with a scanning tunneling microscope on graphite, metallic films, organic molecules and polymeric biomolecules", **Nanotechnology**, 2, 172-181 (1991).
 32. P.M.Williams, M.C.Davies, D.E.Jackson, C.J.Roberts, S.J.B.Tendler and M.J.Wilkins "Biological Applications of scanning tunneling microscopy: novel software algorithms for the display, manipulation and interpretation of STM data", **Nanotechnology**, 1, 5-15 (1991).
 33. P.J.Watts, M.C.Davies, and C.D.Melia "Encapsulation of 5-aminosalicylic acid into Eudragit RS microspheres and modulation of their release characteristics by the use of surfactants" **Journal of Controlled Release**, 16, 311-318 (1991).
 34. D.T.O'Hagen, D.Rahman, J.P.Mcgee, H.Jeffrey, P.Williams, M.C.Davies, S.S.Davis and S.J.Challacombe "Biodegradable microparticles as controlled release antigen delivery systems" **Immunology**, 73, 239-242 (1991).
 35. P.J.Watts, A.M.Tudor, P.J.Hendra, S.Church M.C.Davies, and C.D.Melia "FT-Raman spectroscopy for the qualitative and quantitative characterization of sulphasalazine-containing polymeric microspheres" **Pharmaceutical Research**, 8(10), 1323-1328 (1991).
 36. L.Barrow, K.P.Steed, R.C.Spiller, P.J.Watts, C.D.Melia, M C Davies and C.G.Wilson "Scintigraphic demonstration of Lactulose-induced changes in proximal colonic transit" **Gastroenterology**, 103, 1167-1173 (1992).
 37. P.J.Watts, L.Barrow, K.P.Steed, R.C.Spiller, C.G.Wilson, C.D.Melia and M.C.Davies "The transit rate of different sized microparticles through the colon and the effects of a lactulose-induced catharsis", **International Journal of Pharmaceutics**, 87, 215-221 (1992).
 38. M.C.Davies, P.J.Watts, B.P.Atkin, C.G.Wilson and C.D.Melia "Radiolabelling of Eudragit RS: sulphasalazine microspheres for gamma scintigraphy by neutron activation. 1. Incorporation of samarium oxide and its effects on microsphere drug release rate" **International Journal of Pharmaceutics**, 76, 55-59 (1991).

39. A.Tudor, M.C.Davies, C.D.Melia, D.Lee, R.Mitchell, P.J.Hendra and S.J.Church "The application of near-infrared FT-Raman spectroscopy to the analysis of the polymorphic forms of cimetidine" ***Spectrochimica Acta***, 1389-1394 (1991).
40. A.Tudor, M.C.Davies, C.D.Melia, P.H.Hendra, R.Langer and A.Domb "FT-Raman spectroscopy of some aliphatic and aromatic poly(anhydride) homo- and co-polymers of biomedical significance" ***Spectrochimica Acta***, 1335-1344 (1991).
41. A.Brindley, M.C.Davies, R.A.P.Lynn, J.Hearn and J.F.Watts "The surface chemical characterization of model charged and sterically stabilized polymer colloids by SSIMS and XPS" ***Polymer Communications***, 33(5), 1112-1116 (1992).
42. S.J.B.Tendler, C.J.Roberts, M.C.Davies, M.Sekowski, D.E.Jackson and M.R.Price "Topographical investigations of human ovarian carcinoma polymorphic epithelial mucin" ***Biochemical Journal***, 283, 181-185 (1992).
43. C.J.Roberts, M.C.Davies, D.E.Jackson, and S.J.B.Tendler "Surface damage of sputtered gold films at the high and low resistance settings of a scanning tunneling microscope" ***Surface Science Letters***, 261, L29-L34 (1992).
44. J.Bridgett, M.C.Davies and S.P.Denyer "The control of staphylococcal adhesion to poly(styrene) surfaces by polymer surface modification with surfactants" ***Biomaterials***, 13(7), 411-416 (1992).
45. M.J.Wilkins, M.C.Davies, D.E.Jackson, C.J.Roberts, S.J.B.Tendler and P.M.Williams "The observation of a super-periodic feature on gold with a scanning tunneling microscope" ***Applied Physics Letters***, 60(12), 1436-1437 (1992).
46. M.J.Wilkins, M.C.Davies, D.E.Jackson, C.J.Roberts, and S.J.B.Tendler "The observation of a deuterium isotope effect in controlled line and symbol formation on graphite using a scanning tunneling microscope", ***Journal of Physics E: Condensed Matter***, 4, L331-334 (1992).
47. M.C.Davies, S.R.Leadley, A.J.Paul, J.C.Vickerman, J.Heller and N.M.Franson "Probing the surface chemical structure of some novel poly(ortho esters) prepared with N-methyl and N-phenyl ethanolamine by time-of-flight secondary ion mass spectrometry (ToF-SIMS)", ***Polymers for Advanced Technologies***, 3, 293-301 (1992).
48. D.Q.M. Craig, J.Binns, R.M.Hill, M.C.Davies, C.D.Melia and J.M.Newton "Dielectric characterization of sodium alginate gels", ***Journal of Materials Chemistry***, 2(5), 545-549 (1992).
49. M.C.Davies, C.G.Wilson, P.J.Watts and C.D.Melia "Radiolabelling of polymer microsphere for scintigraphic investigations by neutron activation. 3. Changes in the physical properties of Eudragit RS: sulphapyridine microspheres by incorporating samarium oxide" ***International Journal of Pharmaceutics***, 98, 75-85 (1993).
50. L.Barrow, K.P.Steed, R.C.Spiller, N.A.Maskell, J.K.Brown, P.J.Watts, C.D.Melia, M.C.Davies and C.G.Wilson "Quantitative, noninvasive assessment of antidiarrheal actions of codeine using an experimental model of diarrhea in man" ***Digestive Diseases and Sciences***, 38(6), 996-1003 (1993).
51. P.J.Watts, C.G.Wilson, M.C.Davies, and C.D.Melia "Radiolabelling of polymer microsphere for scintigraphic investigations by neutron activation. 2. Effects of

irradiation on the properties of Eudragit RS: sulphapyridine microspheres"
International Journal of Pharmaceutics, 98, 63-73 (1993).

52. P.D.Scholes, M.C.Davies, S.S.Davis, L.I.Illum and M.Vert "The preparation of sub-200 nm colloidal particles from poly(lactide-glycolide copolymers)", **Journal of Controlled Release**, 25, 145-153 (1993).
53. S.S.Davis, L.Illum, S.M.Moghim, M.C.Davies, C.J.Porter, I.S.Muir, A.Brindley, N.M.Christy, M.E.Norman, P.Williams and S.E.Dunn, "Microspheres for targeting drugs to specific body sites", **Journal of Controlled Release**, 24, 157-163 (1993).
54. W.Lin, A.G.A.Coombes, M.C.Davies, S.S.Davis and L Illum, "Preparation of sub-100 nm human serum albumin nanospheres using a pH-coacervation method, **Journal of Drug Targeting**, 1, 237-243 (1993).
55. A.M.Tudor, M.C.Davies, S.J.Church, P.J.Hendra, and C.D.Melia "The qualitative and quantitative analysis of chlorpropamide polymorphic mixtures by near infrared FT-Raman spectroscopy", **Pharmaceutical Research**, 10(12), 1772-1776 (1993).
56. M.C.Davies, A.M.Tudor, S.J.Church, J.Heller, and C.D.Melia "The analysis of biomedical poly(ortho esters) by near infrared FT-Raman spectroscopy", **Spectrochimica Acta**, 49A, 5/6, 675-680 (1993).
57. A.M.Tudor, M.C.Davies, S.J.Church, G.Hastings, M.Barbosa, J.Sandos-Domingos, M.Anderson, S.Morrey, and C.D.Melia "The analysis of biomedical hydroxyapatite powders and hydroxyapatite coatings on metallic medical implants by near infrared FT-Raman spectroscopy", **Spectrochimica Acta**, 49A, 5/6, 759-767 (1993).
58. G.J.Leggett, M.C.Davies, D.E.Jackson and S.J.B.Tendler "Chemisorption of thiol compounds onto gold surfaces studied by static secondary ion mass spectrometry and relevance of data to ion formation mechanisms during sputtering", **Journal of the Chemical Society, Faraday Transactions**, 89(1), 179-180 (1993).
59. M.J.Wilkins, M.C.Davies, D.E.Jackson, J.R.Mitchell, C.J.Roberts, B.T.Stokke and S.J.B.Tendler "Comparison of scanning tunneling microscopy and transmission electron microscopy image data of a microbial polysaccharide" **Ultramicroscopy**, 48, 197-202 (1993).
60. M.C.Davies, R.A.P.Lynn, J.Hearn, J.F.Watts, J.C.Vickerman and D.Johnson "The surface chemical analysis of a series of persulphate initiated charged stabilized poly(butyl methacrylate) latices using XPS and SSIMS" **Journal of Colloid and Interfacial Science**, 156, 229-239 (1993).
61. J.Bridgett, M.C.Davies and S.P.Denyer "In vitro assessment of bacterial adhesion to hydromer-coated cerebrospinal fluid shunts", **Biomaterials**, 14, 184-188 (1993).
62. C.J.Roberts, M.C.Davies, D.E.Jackson and S.J.B.Tendler "Towards the low-force imaging of biological and biomedical material by atomic force microscopy", **Nanobiology**, 2, 73-79 (1993).
63. G.J.Leggett, M.J.Wilkins, M.C.Davies, D.E.Jackson, C.J.Roberts and S.J.B.Tendler "A scanning tunneling microscopy and transmission electron microscopy study of poly(ethylene oxide) films", **Langmuir**, 9, 1115-1120 (1993).
64. G.J.Leggett, M.C.Davies, D.E.Jackson and S.J.B.Tendler "Surface studies by static secondary ion mass spectrometry: adsorption of 3-mercaptopropionic acid and

- cysteine onto gold surfaces" **Journal of Physical Chemistry**, 97, 5348-5355 (1993).
65. M.C.Davies, R.A.P.Lynn, S.S.Davis, J.Hearn, J.F.Watts, J.C.Vickerman and A.J.Paul "The preparation of polymer latex particles with immobilised sugar residues, and their surface characterisation by XPS and ToF-SIMS" **Langmuir**, 9, 1637-1645 (1993).
 66. M.J.Wilkins, M.C.Davies, D.E.Jackson, C.J.Roberts and S.J.B.Tendler "An investigation of substrate and sample preparation effects on scanning tunneling microscopy studies on Xanthan Gum", **Journal of Microscopy**, 172(3) 215-221 (1993).
 67. M.C.Davies, R.A.P.Lynn, S.S.Davis, J.Hearn, J.C.Vickerman and A.J.Paul "The application of time-of-flight SIMS for the surface characterisation of polymer latex particles prepared with imobilized sugar residues", **Journal of Colloid and Interfacial Science**, 161 83-90 (1993).
 68. M.C.Davies, C.I.De Matteis, D.E.Jackson, G.Beamson, D.Briggs, J.Heller and N.M.Franson "High resolution monochromated x-ray photoelectron spectroscopy (XPS) studies on novel biodegradable poly(ortho esters) prepared using N-methyl and N-phenyl diethanolamine, correlated with binding energies obtained from ab initio molecular orbital methods", **Journal of Electron Spectroscopy and Related Phenomena**, 63, 221-238 (1993).
 69. S.P.Denyer, M.C.Davies and G.Hanlon "Mechanisms of microbial adherence" In: **Microbial Biofilms: Formation and Control**, S.P.Denyer and S.P.Gorman, Eds., Society of Applied Bacteriology Technical Series (No. 30), 13-27 (1993).
 70. S.P.Denyer, G.W.Hanlon, M.C.Davies and S.P.Gorman "Antimicrobial and other methods of controlling microbial adhesion in infection" In: **Microbial Biofilms: Formation and Control**, S.P.Denyer and S.P.Gorman, Eds., Society of Applied Bacteriology Technical Series (No. 30), 147-165 (1993).
 71. G J Leggett, M C Davies, C J Roberts, D E Jackson, S J B Tendler and P.M.Williams "Approaches to the immobilization of proteins at surfaces for the analysis by scanning tunneling microscopy", **Langmuir**, 9, 2356-2362 (1993).
 72. G J Leggett, M C Davies, D E Jackson, C J Roberts, S J B Tendler and P Williams "Studies of covalently immobilization protein molecules by scanning tunneling microscopy: the role of water in image contrast mechanism" **Journal of Physical Chemistry**, 97, 8852-8854 (1993).
 73. H.S.Munro, R.J.Ward, M.C.Davies and R.D.Short "The characterisation of plasma polymers by XPS and static SIMS" **Polymer**, 34(11), 2250-2255 (1993).
 74. S.Stolnik, M.C.Davies, L.Illum, S.S.Davis, M.Boustta and M.Vert "The preparation of sub-200 nm biodegradable colloidal particles from poly(b-malic acid-co-benzyl malate) copolymers and thier surface modification with poloxamer and poloxamine surfactants" **Journal of Controlled Release**, 30, 57-67 (1994).
 75. S.E.Dunn, A.Brindley, S.S.Davis, M.C.Davies and L.Illum "Polystyrene-poly(ethylene glycol) (PS-PEG2000) particles as model systems for site-specific drug delivery: Part 2. The effect of PEG surface density on the *in-vitro* cell interaction and *in vivo* biodistribution" **Pharmaceutical Research**, 11(7) 1456-1460 (1994).

76. R Bowtell, J.C.Sharp, A.Peters, P.Mansfield, A.R.Rajabi-Siahboomi, M.C.Davies and C.D.Melia, "NMR Microscopy of hydrating hydrophilic matrix pharmaceutical tablets" **Journal of Magnetic Resonance Imaging**, 12(2) 361-364 (1994).
77. A.R.Rajabi-Siahboomi, R.W.Bowtell, P.Mansfield, A Henderson, M.C.Davies and C.D.Melia, "Structure and behaviour in hydrophilic matrix sustained release dosage forms: 2. NMR imaging studies of dimensional changes in the gel layer and core of HPMC matrices undergoing hydration" **Journal of Controlled Release**, 31, 121-128 (1994).
78. V A Brown, D A Barrett, P N Shaw, M C Davies, H J Ritchie, P Ross, A J Paul and J F Watts, "Characterisation of a range of alkyl-bonded silica HPLC stationary phases: XPS and ToF-SIMS studies", **Surface Interface Analysis**, 21, 263-273 (1994).
79. M.C.Davies, A.Brindley, S.E.Dunn, L.Illum and S.S.Davis "The surface chemical analysis and biological fate of model polymer colloids with surface grafted poly(ethylene glycol) for site-specific drug delivery systems" In: **Surfaces Properties of Biomaterials**, R.West and G.Batts (eds), Butterworth-Heinemann Ltd, 133-145 (1994).
80. J.Davies, A.C.Dawkes, A.G.Haymes, C.J.Roberts, R.F.Sunderland, M.J.Wilkins, M.C.Davies, S.J.B.Tendler, D.E.Jackson and J.C.Edwards "A scanning tunneling microscopy comparison of passive antibody adsorption and biotinylated antibody linkage to streptavidin on microtiter wells" **Journal of Immunological Methods**, 167, 263-269 (1994).
81. K M Shakesheff, M C Davies, D E Jackson, C J Roberts, S J B Tendler, V A Brown, R C Watson, D A Barrett and P N Shaw "Imaging the surface of silica microparticles with the atomic force microscope: a novel sample preparation method, **Surface Science Letters**, 304, L393-L399 (1994).
82. P M Williams, M C Davies, D E Jackson, C J Roberts and S J B Tendler, "The structural refinements and measurement of biomolecules using novel software algorithms and methodologies", **Journal of Vacuum Science and Technology**, 12(3), 1456-1460 (1994).
83. K M Kreusel, J R Adair, N R A Beeley, M C Davies, D E Jackson, C J Roberts, S J B Tendler and P M Williams "Conformational differences in two hinge IgG4 antibodies observed by scanning tunneling microscopy" **Journal of Vacuum Science and Technology**, 12(3), 1517-1520 (1994).
84. P.J.Watts, C.G.Wilson, M.C.Davies and C.D.Melia "Radiolabelling of polymer microspheres for scintigraphic investigations by neutron activation. 4. A pharmacoscintigraphic study of colon-targeted Eudragit RS: sulphapyridine microspheres in human volunteers" **International Journal of Pharmaceutics**, 102, 101-108 (1994).
85. P M Baldwin, J Adler M.C.Davies and C D Melia "Holes in starch granules: confocal, SEM and light microscopy studies of starch granules structure" **Starch/Starke**, 46(9), 341-346 (1994).
86. M.C.Davies, R.A.P.Lynn, J.Hearn, J.F.Watts, J.C.Vickerman and D.Johnson "Evidence for preferential surface enrichment in the surface chemical analysis of a series of poly(butyl methacrylate-co-methyl methacrylate) latices using XPS and static SIMS, **Langmuir**, 10, 1399-1409 (1994).

87. J.Davies, C.J.Roberts, A.C.Dawkes, J.C.Edwards, T.O.Glasbey, A.G.Haynes, M.C.Davies, D.E.Jackson, M.Lomas, K.Shakesheff, S.J.B.Tendler, M.J.Wilkins and P.M.Williams, "The use of scanning probe microscopy and surface plasmon resonance as analytical tools in the study of antibody coated microtiter wells" **Langmuir**, 10, 2654-2661 (1994).
88. S.P.Denyer, P.Williams, M.C.Davies, B.Modun, R.G.Finch, A.Cockayne and J.P.Arbuthnott, "Cell surface characteristics of Staphylococci grown in vitro in peritoneal dialysis fluid and in vivo in a peritoneal chamber implant" In **"Molecular Pathogenesis of Surgical Infections"** (I.Eliasson, ed.) Springer Verlag, London (1994).
89. T.O.Glasbey, G.N.Batts, M.C.Davies, D.E.Jackson, C.V.Nicholas, M.D.Purbrick, C.J.Roberts, S.J.B.Tendler and P.M.Williams, "The use of a polymer film to estimate AFM probe profile" **Surface Science Letters**, 318 (L1219-1224) 1994.
90. S.Stolnik, S.E.Dunn, M.C.Garnett, M.C.Davies, A.G.A.Combes, S.S.Davis and L.Illum, "Surface modification of poly(lactide-co-glycolide) nanospheres by novel biodegradable poly(lactide)-poly(ethylene glycol) copolymers", **Pharmaceutical Research**, 11(12), 1800-1808 (1994).
91. M.J.Wilkins, M.C.Davies, D.E.Jackson, C.J.Roberts, S.J.B.Tendler, J.R.Mitchell and S.Hill, "Studies on xanthan structure by scanning tunneling microscopy", In: **Food Hydrocolloids: Structures, Properties and Functions**, K.Nishinari and E.Doi, Plenum Press, New York, 131-134 (1994).
92. K.M.Shakesheff, M.C.Davies, D.E.Jackson, G.J.Leggett, C.J.Roberts, S.J.B.Tendler and P.M.Williams, "Imaging of poly(ethylene oxide) spherulites by atomic force microscopy", **Nanobiology**, 3(1), 41-48 (1994).
93. K.M.Shakesheff, M.C.Davies, C.J.Roberts, D.E.Jackson, S.J.B.Tendler, A.Shard and A.Domb, "In-situ AFM imaging of polymer degradation in an aqueous environment", **Langmuir**, 10(12) 4417-4419 (1994).
94. G.W.Hanlon, M.C.Davies, S.P.Denyer, J.Bridgett, J.Bilbruck and G.P.Martin "The control of bacterial adhesion by hydrophilic materials - a surface physicochemical approach" In: **Surfaces Properties of Biomaterials**, R.West and G.Batts (eds), Butterworth-Heinemann Ltd, 71-80 (1994).
95. W.Lin, A.G.A.Coombes, M.C.Garnett, M.C.Davies, E.Schacht, S.S.Davis and L.Illum, "Preparation of sterically stabilized human serum albumin nanospheres using a novel dextranox-MPEG crosslinking agent", **Pharmaceutical Research**, 11 (11) 1588-1592 (1994).
96. A.G.A.Coombes, P.D.Scholes, M.C.Davies, L.Illum and S.S.Davis "Resorbable polymeric microspheres for drug delivery - production and simultaneous surface modification using PEO-PPO surfactants, **Biomaterials**, 15(9), 673-680 (1994).
97. K.M.Shakesheff, M.C.Davies, C.J.Roberts, D.E.Jackson, S.J.B.Tendler, and A.Domb, "In-situ atomic force microscopy visualisation of the degradation of melt crystallized poly(sebacic anhydride)", **Macromolecules**, 28, 1108-1114 (1995).
98. A.G.Shard, M.C.Davies, S.J.B.Tendler, D.E.Jackson, P.N.Lan, E.Schacht, and M.D.Purbrick "Surface organisation of polyurethanes observed by static secondary ion mass spectrometry " **Polymer**, 36(4) 755-779 (1995).

99. Q.H.Wan, P.N.Shaw, M.C.Davies and D.A.Barrett, "Chromatographic behaviour of positional isomers on porous graphitic carbon", **Journal of Chromatography**, 697 219-227 (1995).
100. A.Brindley, S.S.Davis, M.C.Davies and J.F.Watts "Polystyrene colloids with surface grafted poly(ethylene oxide) as model systems for site-specific drug delivery. Part 1: preparation and surface characterisation", **Journal of Colloid and Interfacial Science**, 171, 150-161 (1995).
101. A.C.Hodsdon, J.R.Mitchell, M.C.Davies and C.D.Melia , " Structure and behaviour in hydrophilic matrix sustained release dosage forms : 3. The influence of pH on the sustained release performance of and internal gel structure of sodium alginate matrices" **Journal of Controlled Release** 33:143-152 (1995).
102. S.Stolnik, M.C.Garnett, M.C.Davies, L.Illum, M.Bousta, M.Vert and S.S.Davis "The colloidal properties of surfactant-free biodegradable nanospheres from poly(β -malic acid-co-benzyl malate)s and poly(lactic acid-co-glycolide)" **Colloids and Surfaces**, 97(3), 235-245 (1995).
103. K.Shakesheff, M.C.Davies, C.J.Roberts, Tendler, S.J.B., Williams, P. and Heller, J., "The release of protein from a poly(ortho ester) film studied by in-situ atomic force microscopy" **Langmuir**, 11(7),2547-2553 (1995).
104. X.Chen, K.M.Shakesheff, M.C.Davies, J.Heller, C.J.Roberts, S.J.B.Tendler and P.M.Williams "The degradation of a thin polymer film studies by simultaneous *in situ* atomic force microscopy and surface plasmon resonance analysis, **Journal of Physical Chemistry**, 99(29), 11537-11542 (1995).
105. C J Roberts, P.M.Williams, J.Davies, A.C.Dawkes, J.Sefton, J.C.Edwards, A.G.Haynes, C.Bestwick, M.C.Davies and S.J.B.Tendler "Real-space differentiation of IgG and IgM antibodies deposited on microtitre wells by scanning force microscopy" **Langmuir** , 11(5), 1822-1826 (1995).
106. G.R.Harper, S.S.Davis, M.C.Davies, M.E.Norman, Th.F.Tadros, D.C.Taylor, M.P.Irving, J.A.Waters and J.F.Watts "Influence of surface coverage with poly(ethylene oxide) on attachment of sterically stabilized microspheres to rat Kupffer cells *in-vitro*" **Biomaterials**, 16(6), 427-439 (1995).
107. A.P.Shivji, F.Brown, M.C.Davies, K.H.Jennings, C.J.Roberts, S.J.B.Tendler, M.J.Wilkinson and P.M.Williams "Scanning tunneling microscopy studies of β -amyloid fibril structure and assembly" **FEBS Letters**,371, 25-28 (1995).
108. K.M.Shakesheff, X.Chen, M.C.Davies, A.Domb, C.J.Roberts, S.J.B.Tendler and P.M.Williams "Relating the phase morphology of a biodegradable polymer blend to erosion kinetics using simultaneous *in situ* atomic force microscopy and surface plasmon resonance analysis" **Langmuir**, 11 (10) 3921-3927 (1995).
109. M.C.Davies, R.A.P.Lynn, J.Hearn, A.J.Paul, J.C.Vickerman and J.F.Watts, "Surface chemical characterisation using XPS and ToF-SIMS of latex particles prepared by the emulsion copolymerisation of functional monomers with methyl methacrylate and 4-vinyl pyridine" **Langmuir**, 11 (11) 4313-4322 (1995).
110. L.S.Cutts, P.A.Roberts, J.Adler, M.C.Davies and C.D.Melia, "Determination of localised diffusion coefficients in gels using confocal laser scanning microscopy" **Journal of Microscopy**, 180(20) 131-139 (1995).

111. A.G.Shard, M.C.Davies, S.J.B.Tendler, C.V.Nicholas, M.D.Purbrick and J.F.Watts "Surface characterisation of methyl methacrylate - polyethylene glycol methacrylate copolymers by SIMS and XPS" **Macromolecules**, 28, 7855-7859 (1995).
112. M.C. Parker, M.C.Davies, C.J.Roberts and S.J.B.Tendler "The effect of controlled hydration on STM images of covalently attached proteins", **Journal of Physical Chemistry**, 99(43) 16155-16161 (1995).
113. C.C. Ribeiro, M.A.Barbosa, A.Machado, A.Tudor and M.C.Davies "Modifications in the molecular structure of hydroxyapatite induced by Ti ions detected by FT-IR, FT-Raman, EDS and thermogravimetry", **Materials in Medicine**, 6(12)829-834 (1995).
114. A.G.Shard, L.Sartore, M.C.Davies, P.Ferruti, A.J.Paul and G.Beamson "An investigation of the surface chemical structure of some biomedical poly(amido amine)s using high resolution X-ray photoelectron spectroscopy (XPS) and time-of-flight secondary ion mass spectrometry (ToF-SIMS)" **Macromolecules**, 28, 8259-8271 (1995).
115. C.J. Roberts, A. Shivji, M.C. Davies, S.J.B.Tendler, P.M. Williams, I. Fiebrig, S.S. Davis and S. E. Harding "A study of highly purified pig gastric mucin by scanning tunneling microscopy", **Protein and Peptide Letters**, 2 (1995) 409-414.
116. D.A.Barrett, V.A.Brown, P.N.Shaw, M.C.Davies, H.Ritche and P.Ross "Surface characterisation of a range of alkyl-bonded silica HPLC stationary phases: chromatographic behaviour of neutral, acidic and basic test solutes" **Journal of Chromatographic Science**, 34: 146-56 (1996).
117. C.J.Roberts, M.C.Davies, S.J.B.Tendler, P.Williams, J.Davies, A.C.Dawkes, G.D.L.Yearwood and J.C.Edwards "Imaging IgM and IgG antibodies and Fab and F(ab)₂ antibody fragments to molecular resolution on an industrial substrate using scanning force microscopy, **Ultramicroscopy**, 62, 149-155 (1996).
118. E.N.Antonov, V.N.Bagratashvili, V.K.Popov, E.N.Sobol, S.M.Howdle, T.L.Parker, K.Parker, M.C.Davies, C.J.Roberts. "Atomic force microscopic study of the surface morphology of apatite films deposited by pulsed laser ablation", **Biomaterials**, 18;1043-1049 (1997).
119. X.Chen, M.C.Davies, C.J.Roberts, K.M.Shakesheff, S.J.B.Tendler and P.M.Williams "Dynamic surface events measured by simultaneous probe microscopy and surface plasmon detection" **Analytical Chemistry**, 68(8) 1451-1455 (1996).
120. A.G.Shard, C.Volland, M.C.Davies and T.Kissel, "Information on the monomer sequence of poly lactic acid and random copolymers of lactic acid and glycolic acid by examination of SSIMS ion intensities" **Macromolecules**, 29(2) 748-754 (1996).
121. K.M.Shakesheff, M.C.Davies, A.Domb, A.Shard, C.J.Roberts, S.J.B.Tendler and P.M.Williams "Surface-analysis of biodegradable polymer blends of poly(sebacic anhydride) and poly(dl-lactic acid)" **Macromolecules**, 29(6) 2205-2212 (1996).
122. J.Vandorpe, E.Schacht, S.Stolnik, M.C.Garnett, M.C.Davies, L.Illum and S.S.Davis "Poly(organo)phosphazine nanoparticles surface modified with poly(ethylene oxide)" **Bioengineering and Biotechnology**, 52(1), 89-95 (1996).

123. M.J. Wilkins, C.J. Roberts, M.C. Davies, D.E. Jackson, K.M. Kreusel, G.J. Leggett, S.J.B. Tendler and P.M. Williams "Scanning Tunnelling Microscopy: A Proposed Way Forward" **Surface Properties of Biomaterials**, 99-116 (1992).
124. A.G.Shard, M.C.Davies and E.Schacht "Chain end contribution in the static secondary ion mass spectrometry of oligomeric poly(ethylene oxide)" **Surface and Interfacial Science**, 24(12) 787-793 (1996).
125. P. M. Williams, K. M. Shakesheff, M. C. Davies, D. E. Jackson, C. J. Roberts and S. J. B. Tendler, "Towards True Surface Recovery : Novel methods for scanning probe image reconstruction and surface property investigations" **Langmuir**, 12 (14), 3468-3471 (1996).
126. X.Chen, M.C.Davies, C.J.Roberts, K.M.Shakesheff, S.J.B.tendler and P.M.Williams, "A combined surface plasmon resonance and scanning force microscopy instrument" **Journal of Vacuum Science and Technology**, 14(3) 1582-1586 (1996).
127. P.M.Williams, K.M.Shakesheff, M.C.Davies, D.E.Jackson, C.J.Roberts, S.J.B.Tendler, "Blind reconstruction of scanning probe image data" **Journal of Vacuum Science & Technology B**, 14, 2, 1557-1562 (1996).
128. M.C. Parker, M.C.Davies and S.J.B.Tendler "Hydrogen-Bonding Molecules And Their Effect On Scanning Tunneling Microscope Image-Contrast Of Covalently Immobilized Protein Molecules" **Journal Of Vacuum Science & Technology B**, Vol.14, No.2, 1432-1437 (1996)
129. X.Y.Chen, M.C.Davies, C.J.Roberts, K.M.Shakesheff, S.J.B.Tendler and P.M.Williams "Dynamic Surface Events Measured By Simultaneous Probe Microscopy And Surface-Plasmon Detection" **Analytical Chemistry** vol.68, No.8, pp.1451-1455 (1996).
130. S.Stolnik, M.C.Garnett, M.C.Davies, L.Illum, S.S.Davis, M.Bousta and M.Vert "Nanospheres Prepared From Poly(Beta-Malic Acid) Benzyl Ester Copolymers - Evidence For Their In-Vitro Degradation", **Journal of Materials Science in Materials Medicine**, Vol.7, No.3, pp.161-166 (1996).
131. A.R.Rajabiahboomi, R.W.Bowtell, P.Mansfield, M.C.Davies, C.D.Melia "Structure And Behavior In Hydrophilic Matrix Sustained-Release Dosage Forms .4. Studies Of Water Mobility And Diffusion-Coefficients In The Gel Layer Of Hpmc Tablets Using Nmr Imaging" **Pharmaceutical Research**, Vol.13, No.3, pp.376-380 (1996).
132. D.A.Barrett, V.A.Brown, M.C.Davies and P.N.Shaw "Characterisation of a range of alkyl-bonded silica HPLC stationary phases: correlation of quantitative surface analysis data with the retention behaviour of neutral, acidic and basic solutes" **Analytical Chemistry**, 68, 2170-2178 (1996).
133. J.C.Smith, M.C.Davies, CD.Melia, S.P.Denyer and M.R.Derrick "Uptake of drugs by catheters: influence of the drug molecule on sorption by polyurethane catheters" **Biomaterials**, 17, 1469-1472 (1996).
134. S.Allen, J.Davies, A.C.Dawkes, M.C.Davies, J.C.Edwards, M.C.Parker, C.J.Roberts, J.Sefton, S.J.B.Tendler and P.M.Williams, "In situ observation of streptavidin-biotin binding on an immunoassay well surface using an atomic force microscope" **FEBS Letters** 390, 161-164 (1996).

135. C.D.Melia, L.S.Cutts, J.Adler, M.C.Davies, P.A.Roberts and S.Hibbert, "Measuring dynamic processes inside hydrating biopolymer matrices using confocal laser microscopy" in, ***Gums and Stabilisers for the Food Industry 8***, G.O.Philips, P.A.Williams and D.J.Wedlock, eds., IRL Press at Oxford University Press, p.17-26 (1996).
136. P.M. Baldwin, R.A. Frazier, J. Adler, T.O. Glasbey, M.P. Keane, C.J. Roberts, S.J.B. Tendler, M.C. Davies & C.D. Melia, "Surface imaging of thermally sensitive particulate and fibrous materials with the atomic force microscopy: a novel sample preparation method" ***Journal of Microscopy***, Vol. 184, Pt 1, 75-80 October (1996).
137. M-C Parker, M.C.Davies, C.J.Roberts, N.Patel, S.J.B.Tendler and P.M.Williams "A novel organic solvent based coupling method for the preparation of covalently immobilized proteins" ***Protein Science***, 5:2329-2332 (1996).
138. A.P.Shivji, M.C.Davies, S.J.Roberts, S.J.B.Tendler and M.J.Wilkinson "Molecular surface morphology studies of B-amyloid self-assembly: effect of pH on fibril formation, ***Protein & Peptide Letters***, 3, 407-414 (1996).
139. L.S.Cutts, S.Hibbert, J.Adler, M.C.Davies and C.D.Melia "Characterisation of drug release within controlled release dosage forms using the confocal laser scanning microscope" ***Journal of Controlled Release***, 42, 115-124 (1996).
140. S.Tasker, G.Matthijs, M.C.Davies, C.J.Roberts, E.H.Schacht, S.J.B.Tendler "Molecular resolution imaging of dextran monolayers immobilized on silica by atomic force microscopy" ***Langmuir***, 12(26), 6436-6442 (1996).
141. Q.H.Wan, M.C.Davies, P.N.Shaw, D.A.Barrett "Retention behavior of ionizable isomers in reversed-phase liquid-chromatography - a comparative-study of porous graphitic carbon and octadecyl bonded silica". ***Analytical Chemistry***, 68(3), 437-446 (1996).
142. M.C.Davies, R.A.P.lynn, J.Hearn, A.J.Paul, J.C.Vickerman, J.F.Watts "Surface chemical characterization using XPS and ToF-SIMS of latex-particles prepared by the emulsion copolymerization of methacrylic-acid and styrene", ***Langmuir***, Vol.12, No.16, pp.3866-3875 (1996).
143. M.C. Davies. "Surface chemical characterisation of colloidal particles" ***Particle & Particle Systems Characterisation*** 13 (6) 380 (1996)
144. S.A. Hagan, A.G.A.Coombes, M.C.Garnett, S.E.Dunn, M.C.Davies, L.Illum, S.S.Davis, S.E.harding, S.Purkiss and P.R.Gellert "Polylactide-poly(ethylene glycol) copolymers as drug delivery systems. 1. Characterisation of water dispersible micelle-forming systems" ***Langmuir***, 12(9) 2153-2161 (1996).
145. X.Chen, M.C.Davies, C.J.Roberts, S.J.B.Tendler and P.M.Williams "Effect of scanning force microscope geometry on probe-sample contact force", ***Review of Scientific Instruments***, 68 (4) 1773-1775 (1997).
146. S.E.Dunn, A.G.A.Coombes, M.C.Garnett, S.S.Davis, M.C.Davies, L.Illum " In-vitro cell interaction and in-vivo biodistribution of poly(lactide-co-glycolide) nanospheres surface modified by poloxamer and poloxamine copolymers", ***Journal of Controlled Release***, 44(1), 65-76 (1997).
147. RA.Frazier, M.C.Davies, G.Matthjis, C.J.Roberts, E.Schacht, S.Tasker and S.J.B.Tendler "The self assembly and inhibition of protein adsorption by thiolated

- dextran monolayers at hydrophobic metal surfaces" In: **Surface Modification of Polymeric Materials**, B D Ratner and D.G.Castner, Plenum Press, New York, p.117-128 (1997).
148. D.Briggs and M.C.Davies "Quantitative study of methyl methacrylate - poly (ethylene glycol) methacrylate copolymer films using high mass resolution ToF-SIMS" **Surface Interface Analysis**, 25 (9) 725-733 (1997).
 149. R.J.Green, J.Davies, M.C.Davies, C.J.Roberts and S.J.B.Tendler "Surface plasmon resonance for real-time in-situ analysis of protein adsorption to polymer surfaces" **Biomaterials**, 18, 405-413 (1997).
 150. S.Allen, X.Chen, J.Davies, M.C.Davies, .C.Dawkes, J.C.Edwards, C.J.Roberts, J. Sefton, S.J.B.Tendler and P.M.Williams, "The detection of antibody-antigen binding events with the atomic force microscope", **Biochemistry**, Vol.36, No.24, pp.7457-7463 (1997).
 151. W.Lin, M.C.Garnett, M.C.Davies, F.Bignott, P.Ferruti, S.S.Davis and L.Illum "Preparation of surface modified albumin nanospheres" **Biomaterials**, 18(7) 559-565 (1997).
 152. A.G.Shard, M.C.Davies, S.J.B.Tendler, L.Bennedetti, M.D.Purbrick, A.J.Paul and G.Beamson, "X-ray photoelectron spectroscopy and ToF-SIMS investigations of hyaluronic acid derivatives, **Langmuir**, 13(10) 2808-2814 (1997).
 153. E.N. Antonov, V.N. Bagratashvili, V.K. Popov, E.N. Sobol, M.C. Davies, S.J.B. Tendler, C.J. Roberts and S.M. Howdle, "Atomic force microscopic study of the surface morphology of apatite films deposited by pulsed laser ablation" **Biomaterials** 18 (15)1043-1049 (1997).
 154. T.I.Armstrong, M.C.Davies and L.Illum "Human serum albumin as a probe for protein adsorption to nanoparticles: relevance to biodistribution" **Journal of Drug Targeting**, 4(6) 389-398 (1997).
 155. A.G.A.Coombes, S.Tasker, M.Lindblad, K.Hoste, V.Toncheva, E.Schacht, M.C.Davies, L.Illum and S.S.Davis "Biodegradable polymeric microparticles for drug delivery and vaccine formulation - the surface attachment of hydrophilic species using the concept of PEG anchoring segments" **Biomaterials**, 18 (17), 1153-1161 (1997).
 156. N.Patel, M.C.Davies, M.Lomas, C.J.Roberts, S.J.B.Tendler, P.M.Williams, "STM of insulators with the probe in contact with an aqueous layer" **Journal of Physical Chemistry B**, 101(26) 5138-5142 (1997)
 157. J Vandorpe, E Schacht, S Dunn, A Hawley, S Stolnik, SS Davis, MC Garnett, MC Davies, L Illum "Long circulating biodegradable polyphosphazene nanoparticles surface modified with polyphosphazene-poly(ethylene oxide) copolymer" **Biomaterials**, 18 (17), 1147-1152 (1997)
 158. P.M.Baldwin, C.D.Melia and M.C.Davies "The surface chemistry of starch granules studied by time of flight secondary ion mass spectrometry" **Journal of Cereal Science**, 26 (3), 329-346 (1997).
 159. X.Chen, M.C.Davies, C.J.Roberts, S.J.B.Tendler, P.M.Williams, J.Davies, A.C.Dawkes and J.C.Edwards "Recognition of protein adsorption onto polymer surfaces by scanning probe microscopy and probe-surface adhesion measurements with protein-coated probes" **Langmuir**, 13, 4106-4111 (1997).

160. Q-H.Wan, P.N.Shaw, M.C.Davies and D.A.Barrett "Chiral chromatography of amino acids on porous graphitic carbon with a series of N-substituted L-phenylalanine selectors: effect of the anchor molecule on enantioselectivity" **Journal of Chromatography**, 765, 187-200 (1997).
161. R.A Frazier, M.C.Davies, G.Matthijs, C.J.Roberts, E.Schacht, S.J.B.Tendler and P.M.Williams "High resolution atomic force microscopy of dextran monolayer hydration" **Langmuir**, Vol.13, No.18, pp.4795-4798 (1997).
162. S.R.Leadley, M.C.Davies, M.Vert, C.Braud, A.J.Paul, A.G.Shard and J.F.Watts "Probing the surface chemical structure of novel biodegradable poly(B-Malic acid) and its ester derivatives using ToF-SIMS and XPS" **Macromolecules**, Vol.30, No.22, pp.6920-6928 (1997).
163. R.J.Green, S.Tasker, J.Davies, M.C.Davies, C.J.Roberts and S.J.B.Tendler "The adsorption of PEO/PPO/PEO triblock copolymers at the solid/liquid interface: a surface plasmon resonance study" **Langmuir**, 13 (24) 6510-6515 (1997).
164. N. Patel, M.C. Davies, M. Hartshorne, R. J. Heaton, C.J.Roberts, Giles H.W. Sanders, S.J.B. Tendler and P.M. Williams "Immobilization of protein onto homogeneous and mixed carboxylate terminated SAMs", **Langmuir** 13 (24) 6485-6490 (1997).
165. A.G Shard, M.C. Davies, Y.X. Li, C. Volland, T.Kissel. "XPS and SIMS analysis revealing surface segregation and short range order in solid films of block copolymers of PEO and PLGA", **Macromolecules** 30 (10) 3051-3057 (1997).
166. P.M.Baldwin, M.C.Davies and C.D.Melia. "Starch granule surface imaging using low-voltage scanning electron microscopy and atomic force microscopy", **International Journal Of Biological Macromolecules**, 21, 1-2, 103-107 (1997).
167. R.A.Frazier, M.C.Davies, G.Matthijs, C.J.Roberts, E.Schacht, S.J.B.Tendler and P.M.Williams, "In-situ surface plasmon resonance analysis of dextran monolayer degradation by dextranase" **Langmuir**, 13, (26) 7115-7120 (1997).
168. P.M.Williams, M.C.Davies, C.J.Roberts and S.J.B.Tendler " Scanning probe data analysis using the Internet: development of a world-wide web scanning probe microscopy data analysis system" **The Analyst**, 122, 1001-1006 (1997).
169. S.Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Atomic force microscopy in analytical biotechnology". **Trends in Biotechnology**, 15 (3) 101-105 (1997).
170. Q.H. Wan, P.N. Shaw, M.C. Davies, D.A. Barrett. "Role of alkyl and aryle substituents in chiral ligand exchange chromatography of amino acids - Study using porous graphitic carbon coated with N-substituted-L-proline selectors", **Journal of Chromatography A**, 786 (2) 249-257 (1997).
171. P.M. Baldwin, M.C. Davies, C.D. Melia. "Starch granule surface imaging using low-voltage scanning electron microscopy and atomic force microscopy", **International Journal Biological Macromolecules**, 21 (1-2) 103-107 (1997).
172. M.C. Davies, R. Frazier, S.J.B. Tendler, C.J. Roberts, P.M. Williams, G. Matthijs, E. Schacht. "The formation and surface biomolecular interactions of PEG grafted monolayers using SPR, XPS and AFM" **Abstracts of Papers of the American Chemical Society** 213 (2) p62 (1997).

173. S.R. Leadley, M.C. Davies, C.C. Ribeiro, M.A. Barbosa, A.J. Paul, J.F. Watts. "Investigation of the dissolution of the bioceramic hydroxyapatite in the presence of titanium ions using ToF-SIMS and XPS", **Biomaterials** 18 (4) 311-316 (1997).
174. Q-H.Wan, P.N.Shaw, M.C.Davies and D.A.Barrett, "Chiral Chromatography of amino acids on porous graphitic carbon coated with a series of N-substituted L-phenylalanine selectors - Effect of the anchor molecule on enantioselectivity", **Journal of Chromatography A**, 765, (2), 187-200 (1998).
175. X.Chen, N.Patel, M.C.Davies, C.J.Roberts, S.J.B.Tendler, P.M.Williams, J.Davies, A.C.Dawkes and J.C.Edwards "Application of protein-coated scanning force microscopy probes in measurement of surface affinity to protein adsorption" **Applied Physics A**, A66, S631-S634 (1998).
176. N. Patel, M.C. Davies, M. Hartshorne, R.J. Heaton, C.J. Roberts, S.J.B. Tendler and P.M. Williams "A Study of the Physical Adsorption and Chemical Immobilization of Catalase Molecules onto Carboxylate Terminated Self-Assembled Monolayers", **Applied Physics A**, A66, S1-S6 (1998).
177. X.Chen, S.L.McGurk, M.C.Davies, C.J.Roberts, K.M.Shakesheff, S.J.B.Tendler, P.M.Williams, J.Davies, A.C.Dawkes and A.Domb, "Chemical and morphological analysis of surface enrichment in a biodegradable polymer blend by phase-detection imaging atomic force microscopy", **Macromolecules**, 31, (7), 2278-2283 (1998).
178. S.M.Cannizzaro, R.F.Padera, R.Langer, R.Rogers, F.E.Black, M.C.Davies, S.J.B.Tendler and K.M.Shakesheff "A novel biotinylated degradable polymer for cell-interactive applications", **Biotechnology and Bioengineering**, 58, (5), 529-535 (1998).
179. R.J.Green, M.C.Davies, C.J.Roberts and S.J.B.Tendler " A surface plasmon resonance study of albumin adsorption to PEO-PPO-PEO triblock copolymers", **Journal of Biomedical Materials Research**, 42, (2), 165-171 (1998).
180. P.M. Williams, M.C. Davies, C.J.Roberts and S.J.B. Tendler "Noise-compliant tip-shape derivation", **Applied Physics A**, 66 (2) S911-S914 (1998).
181. A.Moore, P.M.Williams, M.C.Davies, D.E.Jackson, C.J.Roberts and S.J.B.Tendler "An enthalpic approach to the analysis of the scanning force ligand rupture experiment", **Journal Chemical Society, Perkins Trans 2**, 253-258 (1998).
182. S.R.Leadley, M.C.Davies, A.Domb, R.Nudelman, A.J.Paul and G Beamson, "The Analysis of the surface chemical structure of copolymers of poly(sebacic anhydride) with ricinoleic acid maleate using XPS and ToF-SIMS", **Macromolecules**, 31 (25) 8957-8965 (1998).
183. L.H. Pope, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams, DNA analysis with scanning probe microscopy. **Analytical Communications**, 35 (2) 5H-7H (1998).
184. S.R Leadley, K.M Shakesheff, M.C Davies, J. Heller, N.M. Franson, A.J Paul, A.M Brown and J.F Watts. "The use of SIMS, XPS and in situ AFM to probe the acid catalysed hydrolysis of poly(orthoesters)" **Biomaterials**, 19, (15), 1353-1360 (1998).

185. P.M. Baldwin, J. Adler, M.C. Davies and C. D. Melia. "High resolution imaging of starch granule surfaces by atomic force microscopy" **Journal of Cereal Science**, 27, (3), 255-265 (1998).
186. L.H. Pope, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams. "DNA analysis with scanning probe microscopy". **Analytical Communications**, 35, (3), H5-H7 (1998).
187. G.M. Power, D.A. Barrett, M.C. Davies, I.D. Pitfield and P.N. Shaw. "The use of ATR-FTIR to study the adsorption of bovine serum albumin onto model reversed-phase chromatography surfaces". **Abstracts of Papers of the American Chemical Society**, 216, (2), 483-Phys (1998).
188. G.M. Power, D.A. Barrett, M.C. Davies, I.D. Pitfield and P.N. Shaw. "The study of BSA adsorption onto model reversed phase chromatography surfaces using plasmon resonance". **Abstracts of Papers of the American Chemical Society**, 216, (2), 468-Phys (1998).
189. S.O. Vansteenkiste, M.C. Davies, C.J. Roberts, S.J.B. Tendler. "Scanning probe microscopy of biomedical interfaces". **Progress in Surface Science**, 57, (2), 95-136 (1998).
190. S. Corneillie, P.N. Lan, E. Schacht, M.C. Davies, A. Shard, R. Green, S. Denyer, M. Wassall, H. Whitfield, S. Choong. "Polyethylene glycol-containing Polyurethanes for Biomedical Applications". **Polymer International**, 46 (3), 251-259 (1998).
191. G.A. Hutcheon, S. Downes, M.C. Davies. "Interactions of chondrocytes with methacrylate copolymers". **Journal of Materials Science - Materials in Medicine** 9 (12) 815-818 (1998).
192. X. Chen, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams, J. Davies, A.C. Dawkes, J.C. Edwards. "Interpretation of tapping mode atomic force microscopy data using amplitude-phase-distance measurements". **Ultramicroscopy** 75 (3) 171-181 (1998)
193. S. Allen, X. Chen, J. Davies, M.C. Davies, A.C. Dawkes, J.C. Edwards, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "The application of force microscopy to immunodiagnostic systems imaging and biomolecular adhesion measurements". **Applied Physics** 66 (1) S255-S261 (1998).
194. N. Patel, R. Padera, G.H.W. Sanders, S.M. Cannizzaro, M.C. Davies, R. Langer, C.J. Roberts, P.M. Williams, K.M. Shakesheff. "Spatially controlled cell engineering on biodegradable polymer surfaces". **FASEB Journal** 12 (14) 1447-1454 (1998).
195. C.J. Roberts, S. Allen, X. Chen, M.C. Davies, S.J.B. Tendler, P.M. Williams. "Measurement of Intermolecular Forces Using Force Microscopy: Breaking Individual Molecular Bonds" **Nanobiology** 4; 163-175 (1998).
196. R.J.Green, M.C.Davies, C.J.Roberts and S.J.B.Tendler "Competitive protein adsorption as observed by surface plasmon resonance", **Biomaterials**, 20, (4), 385-391 (1999).
197. A. Moore, P.M. Williams, M.C. Davies, D.E. Jackson, C.J. Roberts, S.J.B. Tendler. "Analysing the origins of receptor-ligand adhesion forces measured by the

- scanning force microscope" **Journal Chemical Society Perkin Trans. 2** 419-423 (1999).
198. M.C. Garnett, S. Stolnik, S.E. Dunn, I. Armstrong. Wu Lin, E. Schacht, P. Ferutti, M. Vert, M.C. Davies, L. Illum, S.S. Davis. "Application of Novel Biomaterials in Colloidal Drug Delivery Systems" **MRS Bulletin May** 24 (5), 49-56 (1999).
 199. P.D. Scholes, A.G.A. Coombes, L. Illum, S.S. Davis, J.F. Watts, C. Ustariz, M. Vert, M.C. Davies. "Detection and determination of surface levels of poloxamer and PVA surfactant on biodegradable nanospheres usign SIMS and XPS" **Journal of Controlled Release** 59, 261-278 (1999).
 200. N. Patel, G.H.W. Sanders, K.M. Shakesheff, S.M. Cannizzaro, M.C. Davies, R. Langer, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Atomic Force Microscopy analysis of highly defined protein patterns formed by microfluidic networks" **Langmuir** 15;7252 (1999).
 201. S. Allen, J. Davies, M.C. Davies, A.C. Dawkes, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "The influence of epitope availability of AFM studies of antigen-antibody interactions" **Biochemical Journal** 341;173-178 (1999).
 202. S. Kitching, P.M. Williams, C.J. Roberts, M.C. Davies, S.J.B. Tendler. "Quantifying surface topography and scanning probe image reconstruction" **Journal of Vacuum Science & Technology B** 17 (2);273-279 (1999).
 203. F.E. Black, M. Hartshorne, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams, K.M. Shakesheff. "Surface Engineering and Surface Analysis of a Biodegradable Polymer with Biotinylated End Groups" **Langmuir** 15 (9); 3157-3161 (1999)
 204. K.R. Morgan, C.J. Roberts, S.J.B. Tendler, M.C. Davies, Williams, P.F. "A C-13 CP MAS NMR spectroscopy and AFM study of the structure of Glucagel™, a gelling beta-glucan from barley". **Carbohydrate Research** 315 (2), 169-179 (1999).
 205. L.H. Pope, M.C. Davies, C.A. Laughton, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Intercalation-induced changes in DNA supercoiling observed in real-time by atomic force microscopy" **Analytical Chimica Acta** 400; 27-32 (1999).
 206. S.L. McGurk, R.J. Green, G.H.W. Sanders, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Molecular interactions of biomolecules with surface engineered interfaces using atomic force microscopy and surface plasmon resonance", **Langmuir** 15;5136-5140 (1999).
 207. H.K.L. Blackley, N. Patel, M.C. Davies, C.J. Roberts, S.J.B. Tendler, M.J. Wilkinson, P.M. Williams. "Morphological development of β (1-40)-amyloid fibrils", **Experimental Neurology** 158,437-443 (1999).
 208. G.H.W. Sanders, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Shear force and phase imaging of protein boundaries" **Langmuir**, 15 (17) 5433-5436 (1999).
 209. S.L McGurk, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Screening the bionteractions of nanospheres intended for site-specific delivery using surface plasmon resonance" **Journal of Colloid and Interface Science**, 218,456-461 (1999).

210. N. Patel, R. Bhandari, K.M. Shakesheff, S.M. Cannizzaro, M.C. Davies, R. Langer, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Printing patterns of biospecifically adsorbed protein", **Journal of Biomaterials Science - Polymer Addition** 11; 319-331 (2000).
211. S.O. Vansteenkiste, S.I. Corneillie, E. Schacht, X. Chen, M.C. Davies, M. Moens, L. Van Vaeck. "Direct measurement of protein adhesion at biomaterial surfaces by scanning force microscopy" **Langmuir** 16 (7): 3330-3336.
212. L.H. Pope, M.C. Davies, C.A. Laughton, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Atomic Force Microscopy studies of intercalation-induced changes in plasmid DNA tertiary structure", **Journal of Microscopy** 199; Pt. 1; 68-78 (2000).
213. A. Danesh, X. Chen, M.C. Davies, C.J. Roberts, G.H.W. Sanders, S.J.B. Tendler, P.M. Williams, M.J. Wilkins. "Polymorphic discrimination using atomic force microscopy: -distinguishing between two polymorphs", **Langmuir** 16, 866-870; 2000.
214. M.M. Stevens, S. Allen, W.C. Chan, M.C. Davies, C.J. Roberts, SJB Tendler, P.M. Williams. "Probing protein-peptide-protein molecular architecture by atomic force microscopy and surface plasmon resonance", **The Analyst** 125, 245-250; (2000).
215. P.M. Williams, A. Moore, M.M. Stevens, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler. "On the dynamic behaviour of the forced dissociation of ligand-receptor pairs" **Perkin Transactions 2** (1); 5-8 (2000).
216. H.K.L. Blackley, M.C. Davies, G.H.W. Sanders, C.J. Roberts, S.J.B. Tendler, M.J. Wilkinson, P.M. Williams. "In-situ Atomic Force Microscopy Study of Beta-amyloid Fibrillization", **Journal of Molecular Biology**, 298 (5):833-840 (2000).
217. E.M. Erb, X Chen, S Allen, C.J. Roberts, S.J.B. Tendler, M.C. Davies, S Forsén. "Characterization of the surfaces generated by liposome binding to the modified dextran matrix of a surface plasmon resonance sensor chip" **Analytical Biochemistry** 280;29-35 (2000).
218. N.H. Thompson, I. Collin, M.C. Davies, K. Palin, D. Parkins, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Atomic force microscopy of cationic liposome", **Langmuir** 16;4813-4818 (2000).
219. G.H.W. Sanders, C.J. Roberts, A. Danesh, A.J. Murray, D.M. Price, M.C. Davies, S.J.B. Tendler, M.J. Wilkins. "Discrimination of polymorphic forms of a drug product by localised thermal analysis", **Journal of Microscopy**; 198:77-81 (2000).
220. S. Clarke, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M Williams, V.O'Byrne, A.L. Lewis, J. Russell. "Surface mobility of 2-methacryloyloxyethyl phosphorylcholine-co-lauryl methacrylate polymers" **Langmuir** 16: 5116-5122 (2000).
221. M.P. Deacon, S. McGurk, C.J. Roberts, P.M. Williams, S.J.B Tendler, M.C. Davies, S.S. Davis, S.E. Harding. "Atomic Force Microscopy of gastric mucin and chitosan mucoadhesive systems". **Biochemical Journal** 348:557-563 (2000).
222. A.Danesh, M.C. Davies, S.J. Hinder, C.J. Roberts, S.J.B Tendler, M.J Wilkins. "Surface characterization of aspirin crystal planes by dynamic chemical force microscopy", **Analytical Chemistry** 72; 3419-3422 (2000).

223. R..A. Frazier, G. Matthijs, M.C. Davies, C.J. Roberts, E. Schacht, S.J.B. Tendler. "Characterisation of protein resistant dextran monolayers", **Biomaterials** 21 (9); 957-966 (2000).
224. R.A. Quirk, M.C. Davies, S.J.B. Tendler, K.M. Shakesheff. "Surface Engineering of Poly(lactic acid) by entrapment of modifying species", **Macromolecules** 33(2),258-260 (2000).
225. S.L. McGurk, G.H.W. Sanders, M.C. Davies, S.S. Davis, L. Illum, C.J. Roberts, S. Stolnik, S.J.B. Tendler, P.M. Williams. "High resolution atomic force microscopy study of Poly(lactic acid-co-ethylene glycol)", **Polymer Journal** 32 (5), 444-446 (2000).
226. A. Danesh, C. Chen, M.C. Davies, C.J. Roberts, G.H.W. Sanders, S.J.B Tendler, P.M. Williams, M.J. Wilkins. "The discrimination of drug polymorphic forms from single crystals using atomic force microscopy", **Pharmaceutical Research** 17; 887-890 (2000).
227. A. Martin, S. Stolnik, M.C. Davies, C.A. Laughton, C.J. Roberts, S.J.B. Tendler and P.M. Williams."Observation of DNA-Polymer condensate formation in real-time at the molecular level", **FEBS Letters**, 480; 106-112 (2000).
228. X Chen, M.C. Davies, S.J.B. Tendler, P.M. Williams, N.A. Burnham. "Optimizing phase imaging via dynamic force microscopy", **Surface Science** 460; 292-300 (2000).
229. R.J. Green, R.A. Frazier, K.M. Shakesheff, M.C. Davies, C.J. Roberts, S.J.B. Tendler. "Surface plasmon resonance analysis of dynamic biological interactions with biomaterials", **Biomaterials** 21; 1823-1835 (2000).
230. R.J. Green, S. Cornellie, J. Davies, M.C. Davies, C.J. Roberts, E. Schacht, S.J.B. Tendler, P.M. Williams. "Investigation of the hydration kinetics of novel poly(ethylene oxide) containing polyurethanes" **Langmuir** 16; 2744-2750 (2000).
231. X. Chen, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Hydrodynamic damping of tip oscillation in pulsed force atomic force microscopy" **Applied Physics Letters** 77; 20: 1-3 (2000).
232. X. Chen, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams, J. Davies, M.C. Dawkes. "Attractive tapping: A method to minimise topography distortions in tapping mode atomic force microscopy" **Probe Microscopy**; 2: 21-29 (2000).
233. G.M.B.F Snellings, S.O. Vansteenkiste, S.I. Corniellie, M.C. Davies, E.H. Schacht. "Protein Adhesion at Poly(ethylene glycol) Modified Surfaces. **Advanced Materials** 12 (24): 1959-1962 (2000).
234. A.M Belu, M.C Davies, J.M. Newton, N. Patel. "TOF-SIMS characterization an imaging of controlled-release drug delivery systems" **Analytical Chemistry** 72 (22); 5625-5638 (2000).
235. L .M.Wilde, G. Farace, C.J. Roberts, M.C. Davies, G.H.W. Sanders, S.J.B. Tendler, P.M. Williams "Molecular patterning on carbon based surfaces through photobiotin activation". **The Analyst** 126, 195-199 (2001).

236. R.A. Quirk, D. Briggs, M.C. Davies, S.J.B. Tendler, K.M. Shakesheff. "Characterisation of the spatial distributions of entrapped polymers following the surface engineering of poly(lactic acid)" **Surface & Interface Analysis** 31; 46-50 (2001).
237. G.A. Hutcheon, C. Messiou, M.M. Wyre, M.C. Davies, S. Downes. "Water adsorption and surface properties of novel poly-(ethylmethacrylate) polymer systems for use in bone and cartilage repair". **Biomaterials** 22 (7); 667-676 (2001).
238. E. Galligan, C.J. Roberts, M.C. Davies, S.J.B. Tendler, P.M. Williams. "Simulating the dynamic strength of molecular interactions". **Journal Chemical Physics** 114; 7: 3208-3214 (2001).
239. D.A. Barrett, V.A. Brown, R.C. Watson, M.C. Davies, P.N. Shaw, H.J. Ritchie, P. Ross. "Effects of acid treatment on the trace metal content of chromatographic silica: bulk analysis, surface analysis and chromatographic performance of bonded phases". **Journal of ChromatographyA** 905; 69-83 (2001).
240. R.A. Quirk, W.C. Chan, M.C. Davies, S.J.B. Tendler, K.M. Shakesheff. "Poly(L-lysine)-GRGDS as a Biomimetic Surface-Modifier for Poly(lactic) acid. **Biomaterials** 22 (8);865-872 (2001).
241. R.A. Quirk, M.C. Davies, S.J.B. Tendler, W.C Chan, K.M. Shakesheff. "Controlling biological interactions with Poly(lactic acid) by surface entrapment modification" **Langmuir** 17: 2817-2820 (2001).
242. L.H. Pope, M.C. Davies, C.A. Laughton, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Force induced melting of a short DNA double helix" **European Biophysics Journal** 30 (1); 53-62 (2001).
243. S.J. Dexter, R.G. Pearson, M.C. Davies, M.M. Camara, K.M. Shakesheff. "A comparison of the adhesion of mammalian cells and *staphylococcus epidermidis* on fibronectin-modified polymer surfaces", **Journal of Biomedical Materials Research** 56: 222-227 (2001).
244. B.J. Rackstraw, A.L. Martin, S. Stolnik, C.J. Roberts, M.C. Garnett, M.C. Davies, S.J.B. Tendler. "Microscopic Investigations into PEG-Cationic Polymer-Induced DNA Condensation" **Langmuir** 17: 3185-3193 (2001).
245. S. Clarke, M.C Davies, A.L. Lewis, V. O'Bryne, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Atomic force microscope and surface plasmon resonance investigation of polymer blends of Poly(2-Methacryloyloxyethyl Phosphorylcholine-co-Lauryl Methacrylate) and Poly(Lauryl Methacrylate)", **Macromolecules** 34: 4166-4172 (2001).
246. A. Danesh, S.D. Connell, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams, M.J. Wilkins. "An in situ dissolution study of aspirin crystal planes (100) and (001) by atomic force microscopy". **Pharmaceutical Research** 18: 299-303 (2001).
247. X.Z. Feng, C.J. Roberts, D.A. Armitage, M.C. Davies, S.J.B. Tendler, S. Allen, P.M. Williams. "Investigation of microcontact transfer of proteins from a selectively plasma treated elastomer stamp by fluorescence microscopy and force microscopy". **Analyst** 126: 1100-1104 (2001).

248. S.M. Howdle, M.S. Watson, M.J. Whitaker, V.K. Popov, M.C. Davies, F.S. Mandel, J.D. Wang, K.M. Shakesheff. "Supercritical fluid mixing: preparation of thermally sensitive polymer composites containing bioactive materials". **Chemical Communications** 1: 109-110 (2001).
249. S. Allen, S.D.A. Connell, X. Chen, J. Davies, M.C. Davies, A.C. Dawkes, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Mapping the surface characteristics of polystyrene microtiter wells by a multimode scanning force microscopy approach". **J Colloid Interface Sci** 242 (2): 470-476 (2001)
250. D. Barrett, M.S. Hartshore, M.A. Hussain, P.N. Shaw, M.C. Davies. "Resistance to nonspecific protein adsorption by poly(vinyl alcohol) thin films adsorbed to a poly(styrene) support matrix studied using surface plasmon resonance". **Analytical Chemistry** 73 (21): 5232-5239 (2001)
251. W. Inglis, G.H.W. Sanders, P.M. Williams, M.C. Davies, C.J. Roberts, S.J.B. Tendler. "A Simple Method for Biocompatible-Polymer Based Spatially Controlled Adsorption of Blood Plasma Proteins to a Surface" **Langmuir** 17 (23): 7402-7405 (2001)
252. L.H. Pope, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Probing DNA duplex formation and DNA-drug interactions by the quartz crystal microbalance technique". **Langmuir** 17 (26): 8300-8304 (2001)
253. A.K. Salem, S.M. Cannizzaro, M.C. Davies, S.J.B Tendler, C.J Roberts, P.M. Williams, K.M. Shakesheff. "Synthesis and characterisation of a degradable poly(lactic acid)-poly(ethylene glycol) copolymer with biotinylated end groups" **Biomacromolecules** 2 (2), 575-580 (2001)
254. N.H. Green, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Force Sensing and Mapping by Atomic Force Microscopy". **Trends in Analytical Chemistry** 21 (1): 64-73 (2002)
255. A.G. Shard, S. Clarke and M.C. Davies. "Static SIMS analysis of random poly (lactic-co-glycolic acid)". **Surface and Interface Analysis** 33, 528-532 (2002)
256. S.D.A. Connell, S. Allen, C.J. Roberts, J. Davies, M.C. Davies, S.J.B. Tendler, P.M. Williams. "Investigating the interfacial properties of single-liquid nanodroplets by atomic force microscopy" **Langmuir** 18 (5), 1719-1728 (2002)
257. S.J. Hinder, S.D. Connell, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Compositional Mapping of Self-Assembled Monolayers Derivatized within Microfluidic Networks". **Langmuir** 18 (8), 3151-3158 (2002)
258. A.K. Salem, R. Stevens, R.G. Pearson, M.C. Davies, S.J.B. Tendler, C.J. Roberts, P.M. Williams, K.M. Shakesheff. "Interactions of 3T3 Fibroblasts and Endothelial Cells with Defined Pore Features" **Journal of Biomedical Materials Research** 61 (2), 212-217 (2002)
259. H. Petersen, P.M. Fechner, A.L. Martin, K. Kunarth, S. Stolnik, C.J. Roberts, D. Fischer, M.C. Davies, T. Kissel. "Polyethylenimine-*graft*-Poly(ethylene glycol) Copolymers: Influence of Copolymer Block Structure on DNA complexation and Biological Activities as Gene Delivery System". **Bioconjugate Chem** 13, 845-854 (2002)
260. L. Bond, S. Allen, M.C. Davies, C.J. Roberts, A.P. Shivji, S.J.B. Tendler, P.M. Williams, J. Zhang. "Differential scanning calorimetry and scanning thermal

- microscopy analysis of pharmaceutical materials". **Int Journal of Pharmaceutics** 243, 71-82 (2002)
261. S.M. Rigby-Singleton, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Direct measurement of drug-enzyme interactions by atomic force microscopy; dihydrofolate reductase and methotrexate" **Journal Chem. Soc., Perkin Trans. 2** 10, 1722-1727 (2002)
 262. J. Zhang, A.J. Busby, C.J. Roberts, X. Chen, M.C. Davies, S.J.B. Tendler and S.M. Howdle. "Preparation of a Poly (methyl methacrylate)/Ultrahigh Molecular Weight Identification of a Three-Phase Structure: An Atomic Force Microscopy Study," **Macromolecules** 35, 8869-8877 (2002)
 263. X. Chen, C.J. Roberts, M.C. Davies and S.J.B. Tendler. "Phase contrast and attraction-repulsion transition in tapping mode atomic force microscopy". **Surface Science Letters** 519, L593-L598 (2002)
 264. H. Petersen, A.L. Martin, S. Stolnik, C.J. Roberts, M.C. Davies and T. Kissel. "The Macrostopper Route: A New Synthesis Concept Leading Exclusively to Diblock Copolymers with Enhanced DNA Condensation Potential". **Macromolecules** 35 (27), 9854-9856 (2002)
 265. M.M. Stevens, S. Allen, M.C. Davies, C.J. Roberts, E. Schacht, S.J.B. Tendler, S. VanSteenkist, C.J. Roberts, P.M. Williams. "The Development, Characterization, and Demonstration of a Versatile Immobilization Strategy for Biomolecular Force Measurements". **Langmuir** 18, 6659-6665 (2002)
 266. J. Zhang, C.J. Roberts, K.M. Shakesheff, M.C. Davies and S.J.B. Tendler. "Micro- and macro-thermal analysis of a bioactive polymer scaffold formed by physical entrapment of poly(ethylene glycol) into poly(lactic acid)". **Thermochimica Acta** 401, 111-119 (2002)
 267. H. Peterson, K. Kunath, A.L. Martin, S. Stolnik, C.J. Roberts, M.C. Davies and T. Kissell. "Star-Shaped Poly(ethylene glycol)-*block*-polyethylenimine Copolymers Enhance DNA Condensation of Low Molecular Weight Polyethylenimines". **Biomacromolecules** 3, 926-936 (2002)
 268. N.A. Burnham, X. Chen, C.S. Hodges, G.A. Matei, E.J. Thoreson, C.J. Roberts, M.C. Davies and S.J.B. Tendler. "Comparison of calibration methods for atomic-force microscopy cantilevers". **Nanotechnology** 14, 1-6 (2003)
 269. S.J. Dexter, M. Camara, M. Davies, K.M. Shakesheff. "Development of a bioluminescent ATP assay to quantify mammalian and bacterial cell number from a mixed population". **Biomaterials** 24, 27-34 (2003)
 270. L.M. Wilde, S. Allen, M.C. Davies, S.J.B. Tendler, P.M. Williams and C.J. Roberts. "Bifunctional atomic force microscopy probes for molecular screening applications". **Analytical Chimica Acta** 479, 77-85 (2003)
 271. A.K. Salem, F.R.A.J. Rose, R.O.C. Oreffo, X. Yang, M.C. Davies, J.R. Mitchell, C.J. Roberts, S. Stolnik-Trenkic, S.J.B. Tendler, P.M. Williams and K.M. Shakesheff. "Porous Polymer and Cell composites That Self-Assemble In Situ". **Advanced Materials** 15 (3), 210-213 (2003)
 272. R.A. Quirk, B. Kellam, R.N. Bhandari, M.C. Davies, S.J.B. Tendler and K.M. Shakesheff. "Cell Type-Specific Adhesion onto Polymer Surfaces from Mixed Cell Populations". **Biotechnology & Bioengineering** 81 (5), 625-628 (2003)

273. S.Y. Luk, N. Patel and M C Davies. "Chemical Imaging of Pharmaceuticals by Time-of-Flight Secondary Ion Mass Spectrometry (TOF-SIMS)". ***Spectroscopy Europe*** 15 (1), 14-18 (2003)
274. J.P. Rossell, S. Allen, M.C. Davies, C.J.Roberts, S.J.B. Tendler, P.M. Williams, "Electrostatic interactions observed when imaging proteins with the atomic force microscope". ***Ultramicroscopy*** 96, 37-46 (2003)
275. J.C. Hooton, C.S German, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams. "Characterization of Particle-Interactions by Atomic Force Microscopy: Effect of Contact Area". ***Pharmaceutical Research*** 20 (3), 508-514 (2003)
276. H.G. Abdelhady, S. Allen, M.C Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams. "Direct real-time molecular scale visualization of the degradation of condensed DNA complexes exposed to Dnase I". ***Nucleic Acids Research*** 31 (14), 4001-4005 (2003)
277. S.F. Long, S. Clarke, M.C. Davies, A.L. Lewis, G.W. Hanlon, A.W. Lloyd. "Controlled biological response on blends of a phosphorylcholine-based copolymer with poly(butyl methacrylate)". ***Biomaterials*** 24, 4115-4121 (2003)
278. R.G. Pearson, Y. Molino, P.M. Williams, S.J.B. Tendler, M.C. Davies, C.J. Roberts and K.M. Shakesheff. "Spatial Confinement of Neurite Regrowth from Dorsal Root Ganglia within Non-Porous Micro-Conduits". ***Tissue Engineering*** 9 (2), 201-208 (2003)
279. A.J. Busby, J. Zhang, A. Naylor, C.J. Roberts, M.C. Davies, S.J.B. Tendler and S.M. Howdle. "The preparation of novel nano-structured polymer blends of ultra high molecular weight polyethylene with polymethacrylates using supercritical carbon dioxide". ***J. Materials Chemistry*** 13, 2838-2844 (2003)
280. S. Allen, S.M. Rigby-Singleton, H. Harris, M.C. Davies, P. O'Shea. "Measuring and visualizing single molecular interactions in biology". ***Biochemical Society Transactions*** 31, 1052-1057 (2003)
281. A.L. Lewis, J. Berwick, M.C. Davies, C.J. Roberts, J-H Wang, S. Small, A. Dunn, V. O'Byrne, R.P. Redman, S.A. Jones. "Synthesis and characterisation of cationically modified phospholipid polymers." ***Biomaterials*** 25 (15) 3099-3108 (2004)
282. A.B. Patel, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams. "Influence of Architecture on the Kinetic Stability of Molecular Assemblies." ***J. American Chemical Society*** 126 (5) 1318-1319 (2004)
283. N.H. Green, P.M. Williams, O. Wahab, M.C. Davies, C.J. Roberts, S.J.B. Tendler, S. Allen. "Single Molecule Investigations Of Rna Dissociation". ***Biophysical Journal*** 86, 3811-3821 (2004)
284. H.G. Abdelhady, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Atomic force microscopy studies of generation 4 poly(amidoamine) (PAMAM) dendrimers on functionalized surfaces", ***Surface Science*** 558 (1-3), 99-110 (2004)
285. M.C. Deshpande, M.C. Davies, M.C. Garnett, P.M. Williams, D. Armitage, L. Bailey, M. Vamvakaki, S.P. Armes and S. Stolnik. "The effect of poly(ethylene

- glycol) molecular architecture on cellular interaction and update of DNA complexes". **Journal of Controlled Release** 97, 143-156 (2004)
286. J.C. Hooton, C.S. German, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams. "An Atomic Force Microscopy Study of the Effect of Nanoscale Contact Geometry and Surface Chemistry on the Adhesion of Pharmaceutical Particles". **Pharmaceutical Research** 21 (6), 953-961 (2004)
 287. C. Thompson, M.C. Davies, C.J. Roberts, S.J.B. Tendler, M.J. Wilkinson. "The effects of additives on the growth and morphology of paracetamol (Acetaminophen) crystals" **Int J Pharmaceutics** 280, 137-150 (2004)
 288. T.R. Keel, C. Thompson, M.C. Davies, S.J.B. Tendler, C.J. Roberts. "AFM studies of the crystallization and habit modification of an excipient material, adipic acid". **Int J Pharmaceutics** 280, 185-198 (2004)
 289. J.S. Ellis, H.G. Abdelhady, S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams. "Direct atomic force microscopy observations of monovalent ion induced binding of DNA to mica" **Journal of Microscopy** 215, 297-301 (2004)
 290. M.M. Stevens, S. Allen, J.K. Sakata, M.C. Davies, C.J. Roberts, S.J.B. Tendler, D.A. Tirrell and P.M. Williams. "pH-Dependent behavior of surface-immobilized artificial leucine zipper proteins" **Langmuir** 20 (18), 7747-7752 (2004)
 291. E. Kleeman, L.A. Dailey, H.G. Abdelhady, T. Gessler, T. Schmehl, C.J. Roberts, M.C. Davies, W. Seeger and T. Kissel. "Modified polyethylenimines as non-viral gene delivery systems for aerosol gene therapy: Investigations of the complex structure and stability during air-jet and ultrasonic nebulization" **Journal of Controlled Release** 100, 437-450 (2004)
 292. V.L. Sedman, S. Allen, W. Chan, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams, "Atomic force microscopy study of human amylin (20-29) fibrils" **Protein and Peptide Letters** 12, 79-83 (2005)
 293. A.G. Schatzlein, B.H. Zinselmeyer, A. Elouzi, C. Dufes, Y.T.A. Chim, C.J. Roberts, M.C. Davies, S.J.B. Tendler, A. Munro, A.I. Gray, I.F. Uchegbu. "Preferential Liver Gene Expression with Polypropylenimine Dendrimers" **Journal of Controlled Release** 101, 247-258 (2005)
 294. M.C. Perkins, C.J. Roberts, D. Briggs, M.C. Davies, A. Friedman C.A Hart and G.A. Bell, "Macro and microthermal analysis of plant wax/surfactant interactions: plasticizing effects of two alcohol ethoxylated surfactants on an isolated cuticular wax and leaf model" **Applied Surface Science** 243, 158-165 (2005)
 295. Y.T.A. Chim, J.K.W. Lam, Y. Ma, S.P. Armes, A.L. Lewis, C.J. Roberts, S. Stolnik, S.J.B. Tendler and M.C. Davies, "Structural study of DNA condensation induced by novel phosphorylcholine-based copolymers for gene delivery and relevance to DNA protection" **Langmuir**, 21, 3591-3598 (2005)
 296. M.C. Perkins, C.J. Roberts, D. Briggs, M.C. Davies, A. Friedman C.A Hart and G.A. Bell, "Surface morphology and chemistry of Prunus laurocerasus L. leaves: An X-Ray Photoelectron Spectroscopy, Time of Flight Secondary Ion Mass Spectrometry and Atomic Force Microscopy study" **Planta**, 221, 123-134 (2005)
 297. Stevens M.M., Allen S., Davies M.C., Roberts C.J., Sakata J.K., Tendler S.J.B., Tirrell D.A. and Williams P.M. "Molecular level investigations of the inter- and

- intramolecular interactions of pH-responsive artificial triblock proteins”
Biomacromolecules 6, 1266-1271 (2005)
298. Bunker M, Davies M, Roberts C. “Towards screening of inhalation formulations: measuring interactions with atomic force microscopy” **Expert Opinion on Drug Delivery** 2 (4), 613-624 (2005)
 299. Barrett D.A, Power G.M., Hussain M.A., Pitfield I.D., Shaw P.N., Davies M.C. “Protein interactions with model chromatographic stationary phases constructed using self-assembled monolayers” **J Separation Science** 28 (5), 483-491 (2005)
 300. A.J. Busby, J.X. Zhang, A. Naylor, C.J. Roberts, M.C. Davies, S.J.B. Tendler and S.M. Howdle, “Novel Nanostructured Polymeric Composites of Poly(caprolactone) and Ultra High Molecular Weight Polyethylene via a Supercritical Fluid Route” **Advanced Materials** 17, 364-367 (2005)
 301. Q. Hou, F.J.M. Rutten, E.F. Smith, D. Briggs, M.C. Davies, L.D.K. Buttery, R. Freeman and K.M. Shakesheff, “Surface characterization of pre-formed alginate fibres incorporated with a protein by a novel entrapment process” **Surface and Interface Analysis** 37, 1077-1081 (2005)
 302. M. Wittmar, J.S. Ellis, F. Morell, F. Unger, J.C. Schumacher, C.J. Roberts, S.J.B. Tendler, M.C. Davies and T. Kissel “Biophysical and Transfection Studies of an Amine-Modified Poly(vinyl alcohol) for Gene Delivery” **Bioconjugate Chemistry** 16, 1390-1398 (2005)
 303. M. Santin, W. Rhys-Williams, J. O’Reilly, M.C. Davies, K. Shakesheff, W.G. Love, A.W. Lloyd, S.P. Denyer. “Calcium-binding phospholipids as a coating material for implant osteointegration” **Royal Society Interfaces** 3, 277-281 (2006)
 304. G. Tsourapas, F.J.M. Rutten, D. Briggs, M.C. Davies and K.M. Shakesheff. “Surface spectroscopic imaging of PEG-PLA tissue engineering constructs with ToF-SIMS” **Applied Surface Science** 252 (19), 6693-6696 (2006)
 305. J.C. Hooton, C.S German, M.C. Davies and C.J. Roberts. “A comparison of morphology and surface energy characteristics of sulfathiazole polymorphs based upon single particle studies”. **European Journal of Pharmaceutical Sciences** 28 (4), 315-324 (2006)
 306. S.M. Rigby-Singleton, M.C. Davies, H. Harris, P. O’Shea and S. Allen. “The solubilisation of supported lipid bilayers by an amphiphilic peptide” **Langmuir** 22 (14) 6273-6279 (2006)
 307. R. Ogaki, F. Green, S. Li, M. Vert, M.R. Alexander, I.S. Gilmore and M.C. Davies. “G-SIMS of biodegradable homo-polyesters”. **Applied Surface Science** 252(19), 6797-6800 (2006)
 308. M.J. Bunker, C.J. Roberts, M.C. Davies and M.B. James. “A nanoscale study of particle friction from a pharmaceutical system”. **International Journal of Pharmaceutics** 325 (1-2), 163-171 (2006)
 309. M.J. Bunker, M.C. Davies, X.Y. Chen, M.B. James and C.J. Roberts. “Single particle friction on blister packaging materials used in dry powder inhalers”. **European Journal of Pharmaceutical Sciences** 29 (5), 405-413 (2006)

310. S.S. Pennadam, J.S. Ellis, M.D. Lavigne, D.C. Gorecki, M.C. Davies and C. Alexander. "Synthesis and characterization of variable-architecture thermosensitive polymers for complexation with DNA". **Langmuir** 23 (1), 41-49 (2007)
311. M. Taylor, A.J. Urquhart, M. Zelzer, M.C. Davies and M.R. Alexander. "Picoliter water contact angle measurement on polymers" **Langmuir** 23 (13), 6875-6878 (2007)
312. M.C. Perkins, D. Briggs, F.J.M. Rutten, C.J. Roberts and M.C. Davies. "Cationisation of oligomeric alkylethoxylate surfactants in ToF-SIMS analysis". **Surface and Interface Analysis** 39, 644-647 (2007)
313. M. Montague, R.E. Ducker, K.S.L. Chong, R.J. Manning, F.J.M. Rutten, M.C. Davies and G.J. Leggett. "Fabrication of biomolecular nanostructures by scanning near-field photolithography of oligo (ethylene glycol)-terminated self-assembled monolayers. **Langmuir** 23(13) 7328-7337 (2007)
314. M.J. Bunker, M.C. Davies, M.B. James and C.J. Roberts "Direct observation of single particle electrostatic charging by atomic force microscopy. **Pharmaceutical Research** 24 (6), 1165-1169 (2007)
315. M. Heyde, M. Moens, L. Van Vaeck, K.M. Shakesheff, M.C. Davies and E.H. Schacht. "Synthesis and characterization of novel poly[(organo)phosphazenes] with cell-adhesive side groups". **Biomacromolecules** 8(5), 1436-1445 (2007)
316. C.L. Nie, Y. Wei, , X. Chen, Y.Y. Liu, W. Dui, Y.Liu, M.C. Davies, S.J.B. Tendler, and R.G. He. "Formaldehyde at low concentration induces protein tau into globular amyloid-like aggregates in vitro and in vivo" **PLoS ONE**, 2, e629 (2007)
317. A.J. Urquhart, D.G. Anderson, M. Taylor, M.R. Alexander, R. Langer and M.C. Davies. "High throughput surface characterization of a combinatorial material library." **Advanced Materials**, 19(18), 2486-2491 (2007)
318. R. Ogaki, F.M. Green, I.S. Gilmore, A.G. Shard, S. Luk, M.R. Alexander and M.C. Davies. "Study of the end-group contribution to ToF-SIMS and G-SIMS spectra of poly (lactic acid) using deuterium labelling". **Surface And Interface Analysis**, 39 (11), 852-859 (2007)
319. M. Zelzer, R. Majani, J.W. Bradley, F.R.A.J. Rose, M.C. Davies and M.R. Alexander. "Investigation of cell-surface interactions using chemical gradients formed from plasma polymers" **Biomaterials** 29, 172-184 (2008)
320. A.J. Urquhart, M. Taylor, D.G. Anderson, R. Langer, M.C. Davies and M.R. Alexander. "TOF-SIMS analysis of a 576 micropatterned copolymer array to reveal surface moieties that control wettability" **Analytical Chemistry**, 80, 135-142 (2008)
321. R. Ogaki, A.G. Shard, S. Li, M. Vert, S. Luk, M.R. Alexander, I.S. Gilmore and M.C. Davies. "Extracting information on the surface monomer unit distribution of PLGA by ToF-SIMS". **Surface and Interface Analysis**, 40 (8), 1168-1175 (2008)
322. R. Ogaki, F.M. Green, S. Li, M. Vert, M.R. Alexander, I.S. Gilmore, M.C. Davies. "A comparison of the static SIMS and GSIMS spectra of biodegradable homopolyesters" **Surface and Interface Analysis**, 40(8), 1202-1208 (2008)

323. M. Taylor, A.J. Urquhart, D.G. Anderson, P.M. Williams, R. Langer, M.R. Alexander, M.C. Davies. "A Methodology for Investigating Protein Adhesion and Adsorption to Microarrayed Combinatorial Polymers" **Macromolecular Rapid Communications**, 29(15), 1298-1302 (2008)
324. S. Stolnik, O. Davies, L. Head, D. Armitage, M.C. Davies, M. Marlow and E. Pearson "Surface modification of microspheres with steric stabilizing and cationic polymers for gene delivery". **Langmuir**, 24(14), 7138-7146 (2008)
325. M.C.Perkins, G.Bell, D.Briggs, M.C.Davies, A.Friedman, C.A.Hart, C.Roberts and F.J.M.Rutten "The application of ToFSIMS to the analysis of herbicide formulation penetration into and through leaf cuticles" **Colloid and Surfaces B – Biointerfaces** 67(1), 1-13 (2008)
326. R.Nasanit, P.Iqbal, M.Solomon, N.Spencer, S.Allen, M.C.Davies, S.S.Briggs, L.W.Seymour, J.A.Preece and C.Alexander "Combination dual responsive polypeptide vectors for enhanced gene delivery", **Molecular Biosystems** 4(7), 741-745 (2008)
327. J. James, B. Crean, M.C. Davies, R. Toon, P. Jinks, C.J. Roberts "The surface characterisation and comparison of two potential sub-micron, sugar bulking excipients for use in low-dose, suspension formulations in metered dose inhalers" **International Journal of Pharmaceutics**, 361(1-2), 209-221 (2008).
328. M. Wu, L. Kleiner, F.W. Tang, S. Hossainy, M.C. Davies and C.J. Roberts "Nanoscale mechanical measurement determination of the glass transition temperature of poly(lactic acid)/everolimus coated stents in air and dissolution media" **European Journal of Pharmaceutical Sciences** 36(4-5), 493-501 (2009)
329. M.Taylor, A.J.Urquhart, D.G.Anderson, R.Langer, M.C.Davies and M.R.Alexander "Partial least squares regression as a powerful tool for investigating large combinatorial polymer libraries" **Surface Interface Analysis** 41(2), 127-135 (2009)
330. J.James, M.C.Davies, R.Toon, P.Jinks, Clive.J.Roberts "Particulate drug interactions with polymeric and elastomeric valve components in suspension formulations for metered dose inhalers" **International Journal of Pharmaceutics**, 366, 124-132 (2009)
331. Y.Meij, S.Gerecht, M.Taylor, A.J.Urquhart, S.R.Bogateyrev, S-W.Cho, M.C.Davies, M.R.Alexander, R. Langer and D.G.Anderson "Mapping interactions among biomaterials, adsorbed proteins, and human embryonic stem cells" **Advanced Materials**, 21, 1-6 (2009).
332. A.Rafati, M.C.Davies, A.G.Shard, S.Hutton, G.Mishra, M.R.Alexander "Quantitative XPS depth profiling of codeine loaded poly(l-lactic acid) films using a coronene ion sputter source" **Journal of Controlled Release**, 138(1), 40-44 (2009).
333. A.G.Shard, A.Rafati, R.Ogaki, J.L.S.Lee, S.Hutton, G.Mishra, M.C.Davies and M.R.Alexander "Organic depth profiling of a binary system: the compositional effect on secondary ion yield and a model for charge transfer during secondary ion emission" **Journal of Physical Chemistry**, 113(34), 11574-1158 (2009).

334. A.L.Hook, D.G.Anderson, R.Langer, P.Williams, M.C.Davies and M.R.Alexander, "High throughput methods in biomaterial development and discovery", **Biomaterials**, 31, 187-198 (2010).
335. M. Wu, L. Kleiner, F-W. Tang, S. Hossainy, M.C. Davies and C.J. Roberts. "Surface characterization of poly(lactic acid)/everolimus and poly(ethylene vinyl alcohol)/everolimus stents", **Drug Delivery**, 17, 376-384 (2010).
336. M. Soliman, R. Nasanit, S. Allen, M.C. Davies, S.S. Briggs, L.W. Seymour, J.A. Preece and C. Alexander. "Interaction of reducible polypeptide gene delivery vectors with supported lipid bilayers: pore formation and structure-function relationships", **Soft Matter**, 6(11), 2517-2524 (2010).
337. M. Soliman, S. Allen, M.C. Davies and C. Alexander, "Responsive polyelectrolyte complexes for triggered release of nucleic acid therapeutics", **Chemical Communications**, 46(30), 5421-33 (2010).
338. Y. Mei, K. Saha, S.R. Bogatyrev, J. Yang, A.L. Hook, Z.I. Kalcioğlu, S-W. Cho, M. Mitalipova, N. Pyzocha, F. Rojas, K.J. Van Vliet and M.C. Davies. "Combinatorial development of biomaterials for clonal growth of human pluripotent stem cells", **Nature materials**, 9(9), 768-78 2010.
339. A. Rafati, A. Boussahel, A.G. Shard, K.M. Shakesheff, P.T. Whiteside, S. Rigby-Singleton, C.J. Roberts, X. Chen. D.J. Scurr, M.R. Alexander and M.C.Davies. "Scrutiny of controlled release protein loaded PLGA microspheres using surface analytical techniques", **Journal of Pharmacy and Pharmacology**, 62(10), 1348-1349 (2010).
340. J.Yang, Y.Mei, A.L. Hook, M.Taylor, A.J.Urquhart, S.R.Bogatyrev, D.G. Anderson, R. Langer, P. Williams, M.C. Davies and M.R. Alexander. "Polymer surface functionalities that control human embryoid body cell adhesion revealed by high throughput surface characterization of combinatorial material microarrays", **Biomaterials**, 31(34), 8827-8838 (2010).
341. I. Weuts, F. Van Dycke, J. Voorspoels, S. De Cort, S. Stokbroekx, R. Leemans, M.E. Brewster, D. Xu, B. Segmuller, Y.T.A. Turner, C.J. Roberts and M.C. Davies. "Physicochemical properties of the amorphous drug, cast films, and spray dried powders to predict formulation probability of success for solid dispersions: etravirine", **Journal of Pharmaceutical Sciences**, 100(1), 260-74 (2011).
342. R. Ogaki, I.S. Gilmore, M.R. Alexander, F.M. Green, M.C. Davies and J.L.S. Lee. "Surface Mass Spectrometry of Two Component Drug-Polymer Systems: Novel Chromatographic Separation Method Using Gentle-Secondary Ion Mass Spectrometry (G-ISMS)", **Analytical Chemistry**, 83(10), 3627-3631 (2011).
343. A.L. Hook, J. Yang, X. Chen, C.J. Roberts, Y. Mei, D.G. Anderson, R. Langer, M.R. Alexander and M.C. Davies. "Polymers with hydro-responsive topography identified using high throughput AFM of an acrylate microarray", **Soft Matter**, 7(16), 7194-7197 (2011).
344. G. Yasayan, A.O. Saeed, F. Fernandez-Trillo, S. Allen, M.C. Davies, A. Jangher, A. Paul, K.J. Thurecht, S. M. King, R. Schweins, P.C. Griffiths, J.P. Magnusson and C. Alexander. "Responsive hybrid block co-polymer conjugates of proteins-controlled architecture to modulate substrate specificity and solution behavior", **Polymer Chemistry**, 2(7), 1567-1578 (2011).

345. K. Saha, Y. Mei, C.M. Reisterer, N.K. Pyzocha, J. Yang, J. Muffat, M.C. Davies, M.R. Alexander, R. Langer, D.G. Anderson and R. Jaenisch. "Surface-engineered substrates for improved human pluripotent stem cell culture under fully defined conditions", **Proceedings of the National Academy of Sciences of the USA**, 108(46), 18714-18719 (2011).
346. M.C.Davies, M.R.Alexander, A.L.Hook. J.Yang, Y.Mei, M.Taylor, A.J.Urquhart, R.Langer and D.G.Anderson, "High throughput surface characterization: a review of a new tool for screening prospective biomedical material arrays", **Journal of Drug Targeting**, 18(10), 741-751 (2010).
347. S.Mahmoud, R.Nasanit, S.R.Abulateefeh, S.Allen, M.C. Davies, S.S. Briggs, L.W. Seymour, J.A. Preece, A.M.Grabowska, S.A. Watson and A.C. Alexander, "Multicomponent synthetic polymers with viral-mimetic chemistry for nucleic acid delivery", **Molecular Pharmaceutics**, 9, 1, 1-13 (2012).
348. A. Rafati, A. Boussahel, K. M. Shakesheff, A. G. Shard, C. J. Roberts, X. Chen, D. J. Scurr, S. Rigby-Singleton, P. Whiteside, M. R. Alexander and M. C. Davies, "Chemical and spatial analysis of protein loaded PLGA microspheres for drug delivery applications", **Journal of Controlled Release**, 321-329 (2012).
349. J.Meeus, X.Chen, D.J.Scurr, V.Ciarnelli, C.J.Roberts, M.C.Davies and G. Van den Mooter, "A spray-dried polymeric matrix consisting of poly(lactic-co-glycolic acid) and polyvinylpyrrolidone. Part 1: Nanoscale surface characterization and miscibility study" **Journal of Pharmaceutical Sciences**, 101(9), 3473-3485 (2012).
350. D.Scurr, A.Hook, J.Burley, P.Williams, D.Anderson, R.Langer, M.C.Davies and M Alexander, "Strategies for MCR Image Analysis of large hyperspectral data-sets", **Surface and Interface Analysis**, 45(1) 466-470 (2013).
351. A.D.Celiz, A.L.Hook, D.J.Scurr, D.G.Anderson, R.Langer, M.C.Davies and M.R.Alexander, "ToF-SIMS Imaging of a polymer microarray prepared using an ink-jet printing of acrylate monomers", **Surface and Interface Analysis**, 45(1) 202-205 (2013).
352. A.L.Hook, C-Y Chang, J.Yang, J.Luckett, A.Cockayne, S.Atkinson, Y.Mei, R.Bayston, D.J.Irvine, R.Langer, D.G.Anderson, P.Williams, M.C.Davies and M.Alexander, "Combinatorial discovery of polymers resistant to bacterial attachment", **Nature Biotechnology**, 30(9), 868-875 (2012).
353. A.L.Hook, D.J.Scurr, J.C.Burley, R.Langer, D.G.Anderson, M.C.Davies and M.R.Alexander, "Analysis and prediction of defects in UV photo-initiated polymer arrays", **Journal of Materials Chemistry B**, 1(7), 1035-1043 (2013).
354. V.C.Epa, J.Yang, Y.Mei, A.L.Hook, R.Langer, D.G.Anderson, M.C.Davies, M.R.Alexander and D.A.Winkler, "Modelling human embryoid body cell adhesion to combinatorial library of polymer surfaces", **Journal of Materials Chemistry**, 22(39) 20902-20906 (2012).
355. G.Yasayan, M.Redhead, J.P.Magnusson, S.G.Spain, S.Allen, M.Davies, C.Alexander and F.Fernandez-Trillo, "Well-defined polymeric vesicles with high stability and modulation of cell uptake by a simple coating protocol", **Polymer Chemistry**, 3(9), 2596-2604 (2012).
356. G.Yasayan, J.P.Magnusson, G.Sicilia, S.G.Spain, S.A.Allen, M.C.Davies & C.Alexander, "Multi-modal switching in responsive DNA block co-polymer

- conjugates", **Physical Chemistry Chemical Physics**, 15(38) 16263-16274 (2013).
357. J.Meeus, D.J.Scurr, K.Amssoms, M.C.Davies, C.J.Roberts and G. Van den Mooter, "Surface characteristics of spray-dried microspheres consisting of PLGA and PVP: relating the influence of heat and humidity to the thermal characteristics of these polymers", **Molecular Pharmaceutics**, 10(8), 3213-3224 (2013).
 358. A.L.Hook, C.Y.Chang, J.Yang, S.Atkinson, R.Langer, D.G.Anderson, M.C.Davies, P.Williams and M.R.Alexander, "Discovery of novel materials with broad resistance to bacterial attachment using combinatorial polymer microarrays", **Advanced Materials**, 25(18), 2542-2547 (2013).
 359. A.Gallas, C.Cameron, M.C.Davies, S.Puri and S.Allen, "Chemistry and formulations for siRNA therapeutics", **Chemical Society Reviews**, 42(20), 7983-7997 (2013).
 360. A.L.Hook, D.J.Scurr, J.C.Burley, R.Langer, D.G.Anderson, M.C.Davies and M.R.Alexander, "Analysis and prediction of defects in UV photo-initiated polymer arrays", **Journal of Materials Chemistry B**, 1(7), 1035-1043 (2013).
 361. M.Algahtani, A.Hook, M.Alexander, D.Scurr, R Langer, D.Anderson & M.C.Davies, "Highthroughput screening for new generation of biomaterials", **Journal of Controlled Release**, 190, 115-126 (2014).
 362. A.D.Celiz, J.Smith, R.Langer, D.G.Anderson, D.A.Barrett, L.E.Young, C.Denning, M.C.Davies, and M.R.Alexander, "Materials for stem cell factories of the future." **Nature Materials**, 13, 570-579 (2014).
 363. A.Hook, C.-Y.Chang, D.Scurr, R.Langer, D.Anderson, P.Williams, M.C.Davies, and M.R.Alexander, "Thermally Switchable Polymers Achieve Controlled Escherichia coli Detachment." **Advanced Healthcare Materials**, 3(7), 1020-1025 (2014).
 364. A.Celiz, J.Smith, A.Patel, R.Langer, D.Anderson, D.Barrett, L.Young, M.C.Davies, C.Denning, and M.R.Alexander, "Chemically diverse polymer microarrays and high throughput surface characterisation: A method for discovery of materials for stem cell culture." **Biomaterials Science**, 2(11) 1604-1611 (2014).
 365. V.C.Epa, A.L.Hook, C.Chang, J.Yang, R.Langer, D.G.Anderson, P.Williams, M.C.Davies, M.R.Alexander and D.A.Winkler, "Modelling and Prediction of Bacterial Attachment to Polymers", **Advanced Functional Materials**, 24, 2085-2093 (2014)
 366. J.Meeus, D.J.Scurr, K.Amssoms, K.Wuyts, P.Annaert, M.C.Davies, C.J.Roberts and G.Van Den Mooter, "In vivo evaluation of different formulation strategies for sustained release injectables of a poorly soluble HIV protease inhibitor", **Journal of Controlled Release**, 199, 1-9 (2015).
 367. E.P.Magennis, A.L.Hook, M.C.Davies, C.Alexander, P.williams and M.R.Alexander, "Engineering serendipity: high-throughput discovery of materials that resist bacterial attachment", **Acta Biomaterialia**, 34, 84-92 (2016).
 368. A.D.Celiz, J.G.W.Smith, A.K.Patel, A.L.Hook, D.Rajamohan, V.T.George, L.Flatt, M.J.Patel, V.C.Epa, T.Singh, R.Langer, D.G.Anderson, N.D.Allen, D.C.Hay, D.A.Winkler, D.A.Barrett, M.C.Davies, L.E.Young, C.Denning, M.R.Alexander, "Discovery of a novel polymer for human pluripotent stem cell expansion and multilineage differentiation", **Advanced Materials**, 27(27), 4006-4012 (2015).

369. J.Meeus, M.Lenaerts, D.J.Scurr, K.Amssoms, M.C.Davies, C.J.Roberts and G.Van Den Mooter, "The influence of spray drying parameters on phase behaviour, drug distribution, and in vitro release of injectable microspheres for sustained release", **Journal of Pharmaceutical Sciences**, 104(4) 1451-1460 (2015).
370. J.Meeus, D.J.Scurr, X.Chen, K.Amssoms, M.C.Davies, C.J.Roberts and G Van Den Mooter, "Combination of (M)DSC and surface analysis to study the phase behaviour and drug distribution of ternary solid dispersions", **Pharmaceutical Research**, 32(4), 1407-1416 (2015).
371. O.Sanni, C-Y.Chang, D.G.Anderson, R.Langer, M.C.Davies, P.M.Williams, P.Williams, M.R.Alexander and A.L.Hook, "Bacterial Attachment to polymeric materials correclates with molecular flexibility and hydrophilicity", **Advanced Healthcare Materials**, 4(5), 695-701 (2015).
372. A.K.Patel, A.D.Celiz, D.Rajamohan, D.G.Anderson, R.Langer, M.C.Davies, M.R.Alexander and C.Denning, "A defined synthetic substrate for serum-free culture of human stem cell derived cardiomyocytes with improved functional maturity identified using combinatorial materials microarrays", **Biomaterials**, 61, 257-265 (2015).
373. J.Meeus, D.J.Scurr, B.Appeltans, K.Amssoms, P.Annaert, M.C.Davies, C.J.Roberts and G.Van Den Mooter, "Influence of formulation composition and process on the characteristics and in vitro release from PLGA-based sustained release injectables", **European Journal of Pharmaceutics and Biopharmaceutics**, 90, 22-29 (2015).
374. K.Addington, N.T Nguyen, E.Eaves, J.Jang, C-Y Chang, J.Li, A.L.Gower, A.Stimpson, D.G.Anderson, R.Langer, M.C.Davies, A.L.Hook, P.Williams, M.R.Alexander and D.J.Irvine, "Application of targeted molecular and material property optimization to bacterial attachment-resistant (meth)acrylate polymers", **Biomacromolecules**, 17, 2830-2838 (2016).
375. A.K.Patel, M.W.Tibbitt, A.D.Celiz, M.C.Davies, R.Langer, C.Denning, M.R.Alexander and D.G.Anderson, "High throughput screening for discovery of materials that control stem cell fate", **Current Opinion in Solid State and Material Science**, 20, 202-211 (2016).
378. M.Hammad, W.Rao, J.G.W.Smith, D.G.Anderson, R.Langer, L.E.Young, D.A.Barrett, M.C.Davies, C.Denning and M.R.Alexander, "Identification of polymer surface adsorbed proteins implicated in pluripotent human embryonic stem cell expansion", **Biomaterials Science**, 4(9), 1381-1391 (2016).
379. M.S.N.Algatani, M.C.Davies, M.R.Alexander and J.C.Burley, "Establishing a new method yo evaluate the recrystallization of nanogram quantities of paracetamol printed as a microarray using inkjet printing", **Crystal Growth & Design**, 19, 638-647 (2019).
380. S.Taranjit, A.L.Hook, J.Luckett, M.F.Maitz, C.Sperling, C.Werner, M.C.Davies, D.J. Irvine, P.Williams and M.R.Alexander, "Discovery of hemocompatible bacterial biofilm-resitant copolymers", **Biomaterials**, 230, 1-11 (2020).

REFEREED INVITED REVIEWS/BOOK CHAPTERS (UNTIL 2010, THERAFTER, THEY ARE INCLUDED IN MAIN PUBLICATIONS)

1. M.C.Davies and A.Brown "The surface chemical analysis of polymeric drug delivery systems by static secondary ion mass spectrometry (SSIMS) and SIMS imaging". In: **Recent Advances in Controlled Release Technology**, (Editors P.I. Lee and W.R. Good), American Chemical Society Symposium Series, (Chapter 7) 100-111 (1987). (60%)
2. R.A.P.Lynn, M.C.Davies and S.S.Davis "Polymeric microspheres for drug delivery". **Biomedical Polymers**, 4, 1-7 (1988). (40%)
3. P.J.Hendra, M.C.Davies and C.Passingham "Fourier transform Raman spectroscopy in the biomedical field" In: **Le Nuove Frontiere Della Biologia, Analisi Biologiche e Ricerca**, Ordine Nazionale Dei Biologi, Sotto l'Alto Patronato del Presidente della Repubblica, 97-114 (1989). (10%)
4. R.A.P.Lynn, M.C.Davies, R.D.Short, S.S.Davis and J .Hearn "Surface chemical analysis of polymer latex particles by SIMS and XPS" **Polymer Latex 3**, PRI Conference, 9/1-9/18 (1990). (40%)
5. M.C.Davies, A.J.Paul and J.C.Vickerman "Applications of surface analysis techniques in pharmaceutical science", **Pharmaceutical Manufacturing International**, 1, 1-4 (1990). (60%)
6. M.C.Davies and R.A.P.Lynn "SIMS analysis of biomaterials", **Critical Reviews in Biocompatibility**, 5(4) 297-341 (1990). (60%)
7. M.C.Davies and R.A.P.Lynn "SIMS analysis of polymeric biomaterials - a review", **Clinical Materials**, 5, 97-114 (1990). (60%)
8. M.C.Davies, D.E.Jackson, S.J.B.Tendler and P.M.Williams "Molecular modelling and scanning tunneling microscopy" **Chemistry and Industry**, 23, 776-778 (1990). (40%)
9. P.J.Watts, C.D.Melia and M.C.Davies "Polymeric microspheres produced by solvent evaporation" **Critical Reviews in Drug Delivery**, 7(3) 235-259 (1990). (40%)
10. G.J.Leggett, M.C.Davies, D.E.Jackson, C.J.Roberts and S.J.B.Tendler "Recent advances in the application of scanning probe microscopy in polymer science", **Trends in Polymer Science**, 1(4) 115-121 (1993). (40%)
11. M.C.Davies "SIMS-an emerging technique for the surface chemical analysis of polymeric biomaterials" In: **Polymer Surfaces and Interfaces II**, Ed. J. Feast, Wiley, Chichester, 203-225 (1993). (100%)
12. M.C.Davies, D.E.Jackson, C.J.Roberts, S.J.B.Tendler, K.M.Kreusel, M.J.Wilkins and P.M.Williams "Scanning probe microscopy - current issues in the analysis of polymeric biomaterials" In: **Polymer Surfaces and Interfaces II**, Ed. J. Feast, Wiley, Chichester, 227-245 (1993). (40%)
13. M Lomas, C J Roberts, M C Davies, D E Jackson and S J B Tendler, "Scanning probe microscopy and nanotechnology", **Chemistry and Industry**, 18, 707-711 (1993). (40%)
14. C.J.Porter, M.C.Davies, S.S.Davis and L.Illum, "Microparticulate systems for site-specific therapy -bone marrow targeting" in **Polymer Site-Specific Pharmacotherapy**, ed A Domb, John Wiley & Sons, Sussex, 157-204 (1994). (10%)

15. R.J.Houghton, L.Feely, E.E.Sims, P.Watts and M.C.Davies " Other types of oral multiparticulate dosage forms" in **"Multiparticulate Controlled Release Oral Dosage Forms : Technology and Biopharmaceutics"** eds C.D.Melia, N.Washington, C.G.Wilson, Scottish Academic Press, Edinburgh, UK. 1994 (10%)
16. P.M.Williams, M.S.Cheema, M.C.Davies, D.E.Jackson and S.J.B.Tendler "Biological applications of scanning tunneling microscopy" In: **Methods in Molecular Biology**; Vol 7, Physical Methods of Analysis, Ed. C.Jones, B.Mulloy and A.H.Thomas, Humana Press, New Jersey (1993). (40%)
17. M.C.Davies, G.Leggett, D.E.Jackson, C.J.Roberts and S.J.B.Tendler "Current issues in the SPM analysis of biomaterials" In: **Surfaces Properties of Biomaterials**, R.West and G.Batts (eds), Butterworth-Heinemann Ltd , 99-116, (1994) (40%)
18. G.J.Leggett, M.C.Davies, D.E.Jackson and S.J.B.Tendler "Scanning probe microscopy of biomolecules and polymeric biomaterials", **Journal of Electron Spectroscopy and Related Phenomena**, in the press. (60%)
19. C.J.Roberts, P.M.Williams, M.C.Davies, D.E.Jackson and S.J.B.Tendler "Atomic force microscopy and scanning tunneling microscopy: refining techniques for studying biomolecules" **Trends in Biotechnology**, 12, 127-132 (1994). (40%)
20. C.J.Roberts, M.C.Davies, D.E.Jackson and S.J.B.Tendler "Surface Analysis (d) Atomic Force Microscopy", in **Encyclopedia of Analytical Sciences**, (eds A. Townshend, R. Macrae, P. J. Worsfold, H. W. Werner, S. J. Haswell and I. D. Wilson) Academic Press, London, 1995. (40%)
21. K.M.Shakesheff, M.C.Davies, C.J.Roberts and S.J.B.Tendler, "Surface analysis of biomedical polymers and their biodegradation using scanning probe microscopy" **POLYMAT 94**, in the press. (60%)
22. S.J.B.Tendler, C.J.Roberts and M.C.Davies, "Nanoimaging: biological applications of scanning probe microscopy", In: **Nanotechnology in Medicine and Biosciences**, D.Robinson and R.Coombs (eds.), Gordon & Breech, Science Publishers, in the press. (40%)
23. S.J.B.Tendler, M.C.Davies and C.J.Roberts "Molecules under the microscope" **Journal of Pharmacy and Pharmacology**, 48, 1, 2-8 (1996). (20%)
24. P.D.Scholes, A.G.A.Coombes, M.C.Davies, L.Illum and S.S.Davis "Particulate carriers: realising a potential for targeted drug delivery", In: **Controlled Drug Delivery: The Next Generation**, ed. K.Park, ACS Reference Book, in the press. (10%)
25. K.M.Shakesheff, M.C.Davies, C.J.Roberts, S.J.B.Tendler and P.M.Williams "The role of scanning probe microscopy in drug delivery research" **Critical Reviews in Therapeutic Drug Carrier Systems**, 13, 3-4, 225-256. (1996) (60%)
26. K.M.Shakesheff, M.C.Davies, A.Domb, C.J.Roberts, A.J.Shard, S.J.B.Tendler and P.M.Williams, "Visualisation of the surface degradation of biomedical polymers in-situ with an atomic force microscope" in: **AFM/STM2**, Ed S.Cohen and M.L.Lightbody, Plenum Publishing Corporation, New York, 93-98 (1997). (40%)
27. A.G. Shard, K.M. Shakesheff, C.J. Roberts, S.J.B. Tendler and M.C. Davies "Surface characterization of bioerodable polymers using XPS, SIMS and AFM" In: **Handbook of bioerodable polymers** (ed. A.J. Domb, J. Kost and D.M.Wiseman), Gordon and Breach, Amsterdam p. 417-450 (1997).

28. M.C.Davies, C.J.Roberts, S.J.B.Tendler and P.M.Williams, "Surface analysis of Polymeric Biomaterials", in: **Biocompatibility assessment of materials and devices for medical applications**, J Braybrook, (ed) J.Wiley and Sons, Chichester, in the press. (60%)
29. C.J. Roberts, M.C. Davies, K.M. Shakesheff, S.J.B. Tendler and P.M. Williams "Latest developments in the application of scanning probe techniques in polymer science", **Trends in Polymer Science**, 4 , 420-424 (1996).
30. S. Allen, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams "Atomic force microscopy in analytical biotechnology" **Trends in Biotechnology**, 15(3) , 101-105 (1997).
31. M.C. Davies, C.J. Roberts, S.J.B. Tendler, P.M. Williams. "Probing surface biointeractions at biomaterial surfaces" in **ECASIA 97** (eds. I. Olefjord, L. Nyborg and D Briggs) Wiley p.44-49 (1997).
32. R.A.Frazier, M.C.Davies, G.Matthjis, C.J.Roberts, E.Schacht, S.Tasker and S.J.B. Tendler (1997) The self-assembly and inhibition of protein adsorption by thiolated dextran monolayers at hydrophobic metal surfaces" In: **Surface Modification of Polymeric Materials**, B D Ratner and D.G.Castner, Plenum Press, New York, p.117-128.
33. C.J. Roberts, S. Allen, X. Chen, M.C. Davies, S.J.B. Tendler and P.M. Williams (1998). Measurement of intermolecular forces using force microscopy : Breaking individual molecular bonds. **Nanobiology**, 4, 163-175.
34. S.O. Vansteenkiste, M.C. Davies, C.J. Roberts and S.J.B. Tendler (1998) Scanning probe microscopy of biomedical interfaces. **Progress in Surface Science**, 57, 95-136.
35. L.H. Pope, M.C. Davies, C.J. Roberts, S.J.B. Tendler and P.M. Williams (1998) DNA analysis with scanning probe microscopy. **Analytical Communications**, 5H-7H.
36. M.C. Davies, K.M. Shakesheff, C.J.Roberts, N. Patel, S Bryan "Characterization of Delivery Systems, XPS, SIMS and AFM Analysis" **The Encyclopedia of Controlled Drug Delivery**, 269-275 (1999)
37. C.J. Roberts, M.C. Davies, S.J.B Tendler, P.M. Williams. "Spatially Resolved Spectroscopic Analysis, Scanning Probe Microscopy, Applications" **Encyclopedia of Spectroscopy**, Academic Press, ed. JC Lindon, G.E. Tranter, J.L Holmes (ISBN: 0-12-226680-3), p (2000).
38. C.J. Roberts, S. Allen, M.C. Davies, S.J.B. Tendler, P.M. Williams. "AFM measurement of protein-ligand interactions: a practical approach" **Protein-Ligand Interactions: A practical Approach** (Oxford Univ Press) Ed. S. Harding; 407-423 (2001).
39. J.S. Ellis, S. Allen, Y.T.A. Chim, C.J. Roberts, S.J.B. Tendler, M.C. Davies. "Molecular-scale studies on biopolymers using atomic force microscopy" **Advanced Polym Sci** 193, 1-50 (2005)
40. M.C. Davies, M.R. Alexander, A.L. Hook, J. Yang, Y, Mei, M. Taylor, A.J. Urquhart, R. Langer and D.G. Anderson. "High throughput surface characterization: A review of a new tool for screening prospective biomedical material arrays", **Journal of Drug Targeting**, 18(10) 741-751 (2010).

PUBLISHED ABSTRACTS

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

PATENTS

- 2002 PCT/GB00/03985 - BCP 111 "Zwitterionic Polymer Blend Materials"
Coinventors – Professor M.C. Davies, Dr. S. Clarke, Dr. A.L. Lewis
- 2008 TECH ID: 07-0041 - Polymer based biofilm testing array (PCT/GB2008/050674)
Ref. P118524GB; UK Patent Application No 0715491.7; Polymer based biofilm testing array
- 2008 "Pharmaceutical composition of surface-coated fine particles". The application date 01/07/08. The inventors are K.Okubo, C.Kitaura, K.Minomi, E.Pearson, C.Roberts, M. Davies, S. Stolnik-Trenkic and L.Illum.
- 2009 "Nanocrystals". The inventors are K.Okubo, C.Kitaura, K.Minomi, E.Pearson, C.Roberts, M. Davies, S. Stolnik-Trenkic and L.Illum.
- 2010 "Clonal Expansion of Human Embryonic Stem Cells with Biomaterials", The inventors include R.Langer, D.Anderson, Y.Mei, M.Alexander, M.C.Davies.
- 2012 "Novel polymers which resist bacterial attachment", The inventors include A.Hook, A.Celiz, P.Williams, M.Alexander, M.C.Davies.