

Contact Details

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Employment

Lecturer in Polymer Chemistry Department of Chemistry, University of Sheffield.	Dec. 2014–Present
Postdoctoral Research Fellow School of Pharmacy, University of Nottingham	March 2010–Nov.2014
Postdoctoral Research Assistant Department of Clinical Pharmacology, University of Oxford	March 2008–Feb. 2010

Education

PhD in Synthetic Polymer Chemistry <i>Viva voce:</i> June 2009. Awarded/Graduated: Jan. 2010.	University of Durham
MChem in Chemistry Upper Second Class (Hons.). Awarded/Graduated: July 2004.	University of Durham

Current Funding as PI

EPSRC CDT CASE Studentship with BTG PLC <i>Development of radiopaque embolic agents</i>	Oct. 2015–Sept. 2019 £40,000 CASE Award
EPSRC CDT CASE Studentship with Croda PLC <i>New materials for instant effect cosmetics</i>	Oct. 2015–Sept. 2019 £40,000 CASE Award

Current Funding as Co-I

EPSRC CDT CASE Studentship with Akzo Nobel Coatings International BV <i>Towards water-bourne gloss paint</i>	Oct. 2015–Sept. 2019 £40,000 CASE Award
EPSRC CDT CASE Studentship with Dermtreat ApS <i>Drug delivery to oral mucosa</i>	Oct. 2015–Sept. 2019 £40,000 CASE Award

Previous Funding

EPSRC CASE Studentship with PsiOxus Therapeutics	Oct. 2011–March 2015
<i>Development of polymeric coatings for the systemic delivery of Adenovirus</i>	£85,644.
UNICAS Interfaculty “Sandpit” Award	April 2014–July 2014.
<i>Controlling Hepatitis C virus epitope AP33 conformation for enhanced vaccine efficacy.</i>	£7,150.

PhD Research Supervision as PI

Laura Shallcross	Feb. 2015–March 2017
<i>Investigating the Interactions of Nanoscale Calcium Phosphates with Polymer Additives</i>	

Teaching

Level 1 Tutorials	2016–Present
Fundamental Polymer Chemistry (MSc)	2015–Present
Advanced Polymer Chemistry/Chemistry of Radical Polymerisation (L4/MSc)	2015–Present
Rheology and Rheometry (Polymer Centre)	2016–Present
Biocompatibility Testing (Polymer Centre)	2016–Present
Polymer Chromatography (Polymer Centre)	2015–Present

Administrative Duties

University Manufacturing Research Board Departmental Representative	2016–Present
Level 4 Undergraduate Director	2016–Present
Member of Departmental Safety Committee	2015–Present
Member of Departmental Equality & Diversity Committee	2015–16
Athena Swan Self-Assessment Team Member (Silver Award Received)	2015–16

Recent Conference/Workshop Presentations

Invited

School of Dentistry (Sheffield, UK)	Mar. 2017
EPSRC GRCF Workshop on Affordable Healthcare in Pakistan - Developing Biomedical Materials for Clinical Impact (Sheffield, UK)	Jan. 2017
Chemistry: The science around us (Sheffield, UK)	Sept. 2016
UK-India Centre for Advanced Technology for Minimising Indiscriminate Use of Antibiotics Workshop (Ravenscar, UK)	June 2016
Shamrok Workshop 1: Antimicrobial Surfaces (Sheffield, UK)	Apr. 2016
Emerging Nanomaterials for Healthcare (Warwick, UK)	Nov. 2014
Functional Polymeric Materials (Cancun, Mexico)	Feb. 2014

Contributed

Newton–Bhabha Researcher Links Workshop on Advanced Nanomaterials for Energy, Health and Sustainability	Oct. 2016
Warwick Polymer Conference 2016 (Warwick, UK)	July 2016
RSC Biomaterials Chemistry Annual Meeting (Manchester, UK)	Jan. 2014
Recent Appointees in Polymer Science (Manchester, UK)	Sept. 2013
Warwick Polymer Chemistry 2012 (Warwick, UK)	July 2012

Other Academic Activities

Professional Memberships

Member of the Royal Society of Chemistry (MRSC)
Member of the British Society for Nanomedicine
Member of the UK and Ireland Controlled Release Society

Current Committee Memberships

MC13 Conference Scientific Committee
RSC Biomaterials Chemistry Interest Group

Previous Committee Memberships

Recent Appointees in Polymer Science (Webmaster and Treasurer)

PhD External Examiner

University of Warwick
University of Liverpool

Publications

Original Research

* Denotes SGS as corresponding author

- [1] L. Purdie, C. Alexander, **S. G. Spain*** and J. P. Magnusson, *Influence of polymer size on uptake and cytotoxicity of doxorubicin-loaded DNA-PEG conjugates.*, *Bioconjugate Chem.*, 2016, **27**, 1244–1252.
- [2] A. G. Goncalves, C. Alexander, C. J. Roberts, **S. G. Spain**, S. Uddin and S. Allen, *The effect of protein concentration on the viscosity of a recombinant albumin solution formulation.*, *RSC Adv.*, 2016, **6**, 15143–15154.
- [3] G. Sicilia, A. L. Davis, **S. G. Spain**, J. P. Magnusson, N. Boase, K. J. Thurecht and C. Alexander, *Synthesis of 19F Nucleic Acid-Polymer Conjugates as Real-Time MRI Probes of Biorecognition.*, *Polym. Chem.*, 2016, **7**, 2180–2191.
- [4] V. Loczenski Rose, S. Shubber, S. Sajeesh, **S. G. Spain**, S. Puri, S. Allen, D.-K. Lee, G. S. Winkler and G. Mantovani, *Phosphonium polymethacrylates for siRNA delivery: effect of polymer and RNA structural parameters on polyplex assembly and gene knockdown.*, *Biomacromolecules*, 2015, **16**, 3480–3490.
- [5] N. Francini, L. Purdie, C. Alexander, G. Mantovani and **S. G. Spain***, *Multifunctional poly[N-(2-hydroxypropyl)methacrylamide] copolymers via post-polymerization modification and sequential thiol-ene chemistry.*, *Macromolecules*, 2015, **48**, 2857–2863.
- [6] D. E. Mitchell, M. Lilliman, **S. G. Spain** and M. I. Gibson, *Quantitative Study on the Antifreeze Protein Mimetic Ice Growth Inhibition Properties of Poly(ampholytes) Derived from Vinyl-Based Polymers.*, *Biomater. Sci.*, 2014, **2**, 1781–1795.
- [7] E. P. Magnennis, F. Fernández-Trillo, C. Sui, **S. G. Spain**, D. J. Bradshaw, D. Churchley, G. Mantovani, K. Winzer and C. Alexander, *Bacteria-instructed synthesis of polymers for self-selective microbial binding and labelling.*, *Nature Mater.*, 2014, **13**, 748–755.
- [8] J. P. Magnusson, F. Fernández-Trillo, G. Sicilia, **S. G. Spain*** and C. Alexander, *Programmed assembly of polymer-DNA conjugate nanoparticles with optical readout and sequence-specific activation of biorecognition.*, *Nanoscale*, 2014, **6**, 2368–74.
- [9] G. Sicilia, C. Grainger-Boulby, N. Francini, J. P. Magnusson, A. O. Saeed, F. Fernández-Trillo, **S. G. Spain*** and C. Alexander, *Programmable polymer-DNA hydrogels with dual input and multiscale*

- responses., *Biomater. Sci.*, 2014, **2**, 203–211.
- [10] T. Matini, N. Francini, A. Battocchio, **S. G. Spain**, G. Mantovani, M. J. Vicent, J. Sanchis, E. Gallon, F. Mastrotto, S. Salmaso, P. Caliceti and C. Alexander, *Synthesis and characterization of variable conformation pH responsive block co-polymers for nucleic acid delivery and targeted cell entry.*, *Polym. Chem.*, 2014, **5**, 1626–1636.
- [11] G. Yaşayan, J. P. Magnusson, G. Sicilia, **S. G. Spain**, S. Allen, M. C. Davies and C. Alexander, *Multi-modal switching in responsive DNA block co-polymer conjugates.*, *Phys. Chem. Chem. Phys.*, 2013, **15**, 16263–74.
- [12] S. R. Abulateefeh, **S. G. Spain**, K. J. Thurecht, J. W. Aylott, W. C. Chan, M. C. Garnett and C. Alexander, *Enhanced uptake of nanoparticle drug carriers via a thermoresponsive shell enhances cytotoxicity in a cancer cell line.*, *Biomater. Sci.*, 2013, **1**, 434–442.
- [13] G. Yaşayan, M. Redhead, J. P. Magnusson, **S. G. Spain**, S. Allen, M. Davies, C. Alexander and F. Fernández-Trillo, *Well-defined polymeric vesicles with high stability and modulation of cell uptake by a simple coating protocol.*, *Polym. Chem.*, 2012, **3**, 2596–2604.
- [14] **S. G. Spain*** and N. R. Cameron, *The binding of polyvalent galactosides to the lectin Ricinus communis agglutinin 120 (RCA120): an ITC and SPR study.*, *Polym. Chem.*, 2011, **2**, 1552–1560.
- [15] M. I. Gibson, C. A. Barker, **S. G. Spain**, L. Albertin and N. R. Cameron, *Inhibition of ice crystal growth by synthetic glycopolymers: implications for the rational design of antifreeze glycoprotein mimics.*, *Biomacromolecules*, 2009, **10**, 328–33.
- [16] N. R. Cameron, **S. G. Spain**, J. A. Kingham, S. Weck, L. Albertin, C. A. Barker, G. Battaglia, T. Smart and A. Blanz, *Synthesis of well-defined glycopolymers and some studies of their aqueous solution behaviour.*, *Faraday Discuss.*, 2008, **139**, 359–368.
- [17] **S. G. Spain**, L. Albertin and N. R. Cameron, *Facile in situ preparation of biologically active multi-valent glyconanoparticles.*, *Chem. Commun.*, 2006, 4198–200.

Reviews and Book Chapters

- [1] **S. G. Spain**, G. Yaşayan, M. Soliman, F. Heath, A. O. Saeed and C. Alexander, *Nanoparticles for Nucleic Acid Delivery*, in *Comprehensive Biomaterials*, ed. K. E. Healy, D. W. Huttmacher, D. W. Grainger and C. J. Kirkpatrick, Elsevier, 2011, vol. 4, pp. 389–410.
- [2] **S. G. Spain** and N. R. Cameron, *A spoonful of sugar: the application of glycopolymers in therapeutics.*, *Polym. Chem.*, 2011, **2**, 60–68.
- [3] S. R. Abulateefeh, **S. G. Spain**, J. W. Aylott, W. C. Chan, M. C. Garnett and C. Alexander, *Thermoresponsive polymer colloids for drug delivery and cancer therapy.*, *Macromol. Biosci.*, 2011, **11**, 1722–34.
- [4] **S. G. Spain**, M. I. Gibson and N. R. Cameron, *Recent Advances in the Synthesis of Well-Defined Glycopolymers.*, *J. Polym. Sci. Pol. Chem.*, 2007, **45**, 2059–2072.