

Professor S.J. Eichhorn Curriculum Vitae

Professor Stephen J Eichhorn BSc. (Hons) MSc. Ph.D. M. Inst. P. FRMS. FRSC. FIMMM. CEng.

Date of Birth	24 th July, 1972	Nationality	British
Place of Birth	Manchester, UK	Marital Status	Married
Dependants	2 children		
Address:	College of Engineering, Mathematics and Physical Sciences, University of Exeter, Harrison Building, North Park Road, Exeter, United Kingdom, EX4 4QF		

Email: s.j.eichhorn@exeter.ac.uk

Current role:

Head of Department, Engineering	August 2014 – Present (3 year role)
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Research Director, NW Composites Centre, University of Manchester	2010-2011
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External roles

Chair-Elect, ACS Cellulose and Renewable Materials Division	2015 - present
Co-Director of a joint EPSRC funded Doctoral Training Centre on “Sustainable Materials & Manufacturing”	2014 - present
Editor, Journal of Materials Science	2008 - present
Editorial Advisory Board for <i>Biomacromolecules</i> and <i>Cellulose</i> (top journals in my discipline)	2011 – present

Awards and Honours

Hayashi Jisuke Prize, Japanese Cellulose Society	2017
American Chemical Society (ACS) Cellulose & Renewable Materials Division Fellow Award	2015
Rosenhain Award and Medal, Institute of Materials, Minerals & Mining (IOM ³) for distinguished contribution to Materials Science in any discipline.	2012
Royal Society, 3 rd prize (1 of 6, best for 2005) for best paper in <i>Journal of the Royal Society Interface</i> (2004-2009)	2009

Education and Academic Career

Chair in Materials Science, University of Exeter	2011-
Reader in Polymer Physics and Biomaterials, University of Manchester	2009-2011
Senior Lecturer in Polymer Physics and Biomaterials, University of Manchester	2006-2009
Lecturer in Polymer Physics and Biomaterials	2002-2006
Temporary Lecturer in Paper Science	1997-8

Postdoctoral Research Associate, UMIST/University of Manchester	1999/02
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Research Topic: *The Effect of Defects on the Mechanical Properties of Natural Fibres and Composite Materials*

Supervisor: Prof. R.J. Young FRS FREng

Postdoctoral Research Associate, UMIST/Bangor	1998/99
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Research Topic: *Fracture Criteria for Single Wood Fibres*

Supervisor: Dr. L. Mott

Doctoral Student, UMIST	1995/98
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Thesis: *Deformation Micromechanics of Regenerated Cellulose Fibres*

Supervisor: Dr. W.Y. Hamad	PhD Degree Awarded	Oct 1998
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Masters Student, UMIST/Bangor	1994/95
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Course Title: *Paper Technology and Forestry Industries Technology*

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Undergraduate Student, University of Leeds

1990/93

Physics BSc.

Visiting Appointments

Visiting Professor, University of Manchester

2016-2019

Visiting Lecturer at Aalto University, Finland

2011

Researchers and Students

Research Supervisor of Research Associates

Dr Rinat Nigmatullin	<i>New Enzymatically Produced Interpenetrating Starch-Cellulose Gels</i>	2016 - present
Dr James Beard	<i>FP7 funded projects www.newspec.eu</i>	2016 - present
Dr Nandula Wanasekara	<i>Manufacturing of High Performance Cellulose Fibres to Replace Glass fibres & Carbon Fibre Precursors</i>	2014 - present
Dr Anna Lewandowska	<i>Step Change in Performance of Complex Carbon Fibre Weave Geometries using Cellulose Fibre Precursors and now FP7 funded project (newspec.eu)</i>	2011-present
Dr Libo Deng	<i>Hybrid Electrospun Fibres from Biomass-Based Carbon Nanostructures</i>	2010-2011
Dr Fenglei Zhou	<i>Electrospun Brain Mimics for Magnetic Resonance Imaging</i>	2010/13
Dr Tommy Shyng	<i>Hybrid Electrospun Fibres from Biomass-Based Carbon Nanostructures</i>	2009/10
Dr Kenny Kong	<i>Hybrid Electrospun Fibres from Biomass-Based Carbon Nanostructures</i>	2008/10
Dr Kenny Kong	<i>New Challenges in Composite Micromechanics</i>	2006/08
Dr Marek Hejda	<i>New Challenges in Composite Micromechanics</i>	2007/08
Dr Jim Bennett	<i>New Challenges in Composite Micromechanics</i>	2004/06
Dr Zoe Mousia	<i>Engineered and Chemically Modified Porous Cellulose Fibrous Networks For Controlled Cell Adhesion</i>	2004/05
Dr David Scurr	<i>Engineered and Chemically Modified Porous Cellulose Fibrous Networks For Controlled Cell Adhesion</i>	2005/06
Dr Adriana Sturcova	<i>Microstructure and Micromechanics of Natural and Regenerated Cellulose Fibres</i>	2003/04

Research Supervisor of Postgraduate Students

Doctoral Research Students (14 passed)

David James Scurr	<i>Microstructural Origins of the Mechanical Properties of a Natural Composite Material</i>	2002/05
Kenny Kong	<i>Deformation Micromechanics of Process Controlled Cellulose Fibres Using Raman Spectroscopy and X-ray Diffraction</i>	2003/06
Beth Mottershead	<i>Deformation Micromechanics of Regenerated Cellulose Fibre Model Composites</i>	2003/07
Deepak Kalaskar	<i>Controlling Cell Morphology Using Functional Amino Acids on Cellulose</i>	2005/08
Laura Farran	<i>The Effect of Humidity on the Structure and Mechanical Properties of Human Fingernails</i>	2004/08
Marek Hejda	<i>Deformation Micromechanics of Glass Fibres and Composites</i>	2005/08
Rafeadah Rusli	<i>Deformation Micromechanics of Cellulose Whisker Nanocomposites</i>	2007/10
James Dugan	<i>Controlling cell morphology of human cells using templated cellulosic surfaces</i>	2008/11
Tan Supachok	<i>Nanostructured Cellulose Composites</i>	2008/12
Franck Quero	<i>Bacterial Cellulose bionanocomposites</i>	2008/12
Luis Ribeiro	<i>Biomimetic Routes to Crystals with</i>	2008/13

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Tannitha Pullawan	<i>Superior Mechanical Properties</i>	2008/12
Si-Yu Jin	<i>Modified cellulose films and nanocomposites</i>	2009/13
	<i>Deformation Micromechanics of Carbon Fibre</i>	
	<i>Model Composites</i>	
Michael Ofem	<i>Biomimetic based composites based on seashells</i>	2010/14
Chun-Heng Huang	<i>Fracture Toughness of Cellulose Nanofibre</i>	2010-
	<i>Composites</i>	
Daniel Hewson	<i>Natural Polymeric Photonics</i>	2013-
Masitah Abu Kassim	<i>EPDs and Green Composites</i>	2014-
Nor Binti Inai	<i>Natural Fibre Thermoplastic Nanocomposites</i>	2015-
Qiang Li	<i>Hierarchical carbon nanotube composites</i>	2015-
Joe Morgan	<i>Lightweight, Transparent and Sustainable</i>	2015-
	<i>Metamaterials</i>	

Masters by Research Students

Yu-Chen Chang	<i>Deformation Micromechanics of graphene-based</i>	2010-
	<i>Composites</i>	
Antonios Oikonomou	<i>Deformation Micromechanics of</i>	Passed
	<i>model cellulose composites</i>	
Yi-Chen Hsieh	<i>Deformation Micromechanics of</i>	Passed
	<i>Cellulosic Bionanocomposites</i>	
Bakri Jalelu	<i>Deformation Mechanics of Coir Fibres</i>	Passed
Thomas Kelly	<i>Deformation of Cellulose Model Composites</i>	Passed

Taught Masters Dissertation Students

Michael Starkie	<i>Mechanical Properties of Fingernails</i>	2008
Kongli Ng	<i>Carbon Fibres from Cellulose</i>	2005
Ning Li	<i>Carbon Nanofibres from Cellulose</i>	2004
Salina Sarkawi	<i>Deformation Micromechanics of Kenaf Fibres</i>	2003

Research Advisor for Undergraduate Students

I have supervised one student per year since 2002 and a group research project at Exeter in 2012/13 for which I received a recommendation for an award from the Student's Guild ('Best Research'). Two of my UG project students have previously appeared on publications and I now incorporate them into my research group at Exeter. One UG student (in 2015) was awarded an EPSRC funded summer placement.

Current and Recent Academic Collaborators

External collaborations

Since moving to Exeter the following collaborations have been established:-

Prof. Michael Wisnom, Bristol – *have a joint project funded from a programme grant on ductile materials.*

Prof. Karen Edler, Bath - *have a joint project on BBSRC/Innovate UK on polysaccharide gel materials.*

Prof. Duncan Craig, UCL (Head of London School of Pharmacy) *have a joint PhD student together working on drug delivery using cellulose nanocrystals.*

Prof. Elisabete Frolini, University of Sao Paulo, Brazil *had a PhD student (funded by CenRP) visiting my group to work on electrospinning of cellulose. One publication resulted from this work in Journal of Materials Science (50th Anniversary Edition).*

Prof. Javier Environo, University De Los Andes, Chile *have had a Newton fellowship grant together and one PDRA visiting the lab for 1 month. Have one joint publication in 2015 in Biomacromolecules as a result of this.*

Prof. Kevin Potter, Dr Sameer Rahatekar (Bristol) *have a joint EPSRC grant on making cellulose fibres from ionic liquids.*

Prof. Tom Welton, Chemistry, Imperial College – *have a joint EPSRC grant on making cellulose fibres from ionic liquids*

Prof. Rob Field (John Innes Centre) – *have a joint project on BBSRC/Innovate UK on polysaccharide gel materials.*

Prof. Costas Galiotis, University of Patras, Greece - *have a joint FP7 project funded (NEWSPEC) (large project: €730k Exeter share).*

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- Prof. Costas Soutis, University of Manchester – *have had a joint project together funded through the Innovative Manufacturing Centre on Composite Materials.*
- Prof. Paul O'Brien FRS, University of Manchester - *have a joint project funded through the Royal Society Africa scheme.*
- Prof. Jean-Francois Feller, University of South Brittany - *have visited each other's laboratories through the INTERREG partnership funding (MEET). Postdoctoral researcher has carried out research in laboratory at Exeter.*
- Professor Kerry Kirwan, University of Warwick - *have submitted two bids together; one Centre for Innovative Manufacturing bid (through to last round - not funded) and an Industrial Doctorate Centre on Sustainable Materials (funded).*
- Professor Sabine Flitsch, University of Manchester – *won a bid to BBSRC for an IB Network (IBCarb). Now sit on a joint committee with Sabine and am applying for funding.*
- Prof. Jamie Grunlan, Texas A&M University, USA - Professor Jamie Grunlan has visited Exeter University. *Funded Royal Society International Exchange programme. Have one paper together published in 2015 in Journal of Materials Chemistry C.*
- Dr Richard Trask & Professor Bruce Drinkwater, University of Bristol - *had a joint 6 month project student together through Bristol University's DTC in Composite Materials.*

The following collaborations are ongoing:-

- Prof. Geoffrey Parker, School of Medicine, University of Manchester - *have had a joint EU bid together on making phantoms for MRI imaging. Has resulted in 4 papers together.*
- Prof. Lina Zhang, Wuhan University, China – *exchange of samples and conducting a student exchange programme in 2010. Have published one paper together. Will be travelling to Wuhan in 2014 for an exchange visit.*
- Prof. Hiroyuki Yano, RISH, University of Kyoto, Japan – *exchange of samples and have had two papers published together*
- Prof. Stuart Rowan, Department of Macromolecular Science and Engineering, Case Western University, USA. – *exchange of samples and are working on cellulose nanocomposites together.*
- Prof. Christoph Weder, Adolphe Merkle Institute, Switzerland – *exchanged of samples and have worked on cellulose nanocomposites together. Have published several papers together. Students are due to come to Exeter in 2014. My student has already travelled to their labs to work together.*
- Prof. Alexander Bismarck, University of Vienna. – *have had an EPSRC grant together and are collaborating on cellulose nanocomposites. Have a joint EPSRC bid in together which we are currently awaiting budget announcement on.*
- Dr Stuart Holmes, School of Chemical Engineering, University of Manchester, UK – *collaborate on the porosity of fibrous networks. Has resulted in one publication.*
- Dr Catherine Merry, School of Materials, University of Manchester, UK – *have a joint grant (EPSRC) and work on stem cell research together.*
- Prof. Bob Young FREng FRS, School of Materials, University of Manchester, UK. – *collaborate on a number of projects on composite materials (synthetic materials). Have had several EPSRC grants together and a number of publications.*
- Prof. Bill Sampson, School of Materials, University of Manchester, UK. –*continue to collaborate on cellulose nanocomposite research.*
- Dr Julie Gough, School of Materials, University of Manchester, UK – *have worked with Dr Gough on using cellulose for tissue engineering. Has resulted in three publications and we have a current joint PhD student at Manchester. Have worked together on two EPSRC grants.*

University Service

At Exeter:

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|--|----------------|
| Head of Engineering | 2014 – present |
| Member of University Senate | 2014 – present |
| Member of Graduate Faculty Academic Board | 2014 - present |
| Appointed by Associate Dean (Education) to chair a group to investigate ways to overhaul the teaching in Engineering - results of this have been passed on to VCEG for approval. | 2012-2013 |

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Convened a small working group to give advice and feedback to staff taking part in EPSRC 'Sandpits' 2011-2012

Assessing papers for REF exercise 2013

Joined a working group looking at Athena SWAN application 2013

External promotion cases

Since joining Exeter I have been asked to provide cases for external promotions at the University of Nottingham (3 cases), Queen Mary - University of London (1 case), Rutgers University (US). I have also acted as a consultant for Oulu University (Finland) to recruit academics at a number of levels (full-Professor to lecturer level).

External Assessments

Since joining Exeter I have been asked to sit on a panel to assess the accreditation of a BEng course at Swansea Metropolitan University and a separate application for shared provision with Yeovil College.

At Manchester:

Faculty level

Faculty Teaching Committee 2007-2010

Photon Science Research Committee 2007-2009

School level

Director of Research, Northwest Composites Centre, University of Manchester 2010-2011

Chair of the Undergraduate Teaching Committee (Materials Science Courses) 2007-2010

Director of Undergraduate Studies (Materials Science Courses) 2007-2010

- Writing a large part of the accreditation document for 2009 submission
- Student appeals and interviews for attendance
- Revision of the course content and specifications
- Conduct reviews of the course

Teaching Executive 2008-2010

Course Directors Committee 2007-2010

Biomechanics Course Committee 2007-2010

School of Materials Board 2004-2011

Undergraduate Admissions Officer 2002/06

Schools Liaison Officer 2002/04

Second Year Tutor 2002/03

First Year Tutor 2004/06

Professional Societies, Activities and Service

Chair Elect ACS "Cellulose and Renewable Materials" Division 2015 - present

Member of the Polymer Physics Committee, Institute of Physics 2008 - present

Program Chair for the ACS "Cellulose Renewable Materials" Division 2008-2010

Membership Chair for the ACS Cellulose and Renewable Materials Division 2006-2008

Member of the ACS Cellulose and Renewable Materials Division 2002-

Member of the American Chemical Society (ACS) 2002-

Member of the Institute of Physics 2001-

Fellow of the Royal Microscopical Society 2003-

Fellow of the Royal Society of Chemistry 2007-

Fellow of the Institute of Materials 2009-

Conferences Organised

Chairman of Polymer Fibres (Fibre Society) Meeting, Boston, USA 2012.

Chairman IUPAC symposium on "Polysaccharides: Chemistry, Structure, Properties and Technology" 2010.

Organiser and chairman of a symposium on "Natural Fibre Composites" at ICCM July 27-29th, Edinburgh, 2009

Organiser for Polymer Fibres 9-11th July, 2008, Manchester, UK.

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Organiser of the "Mechanical Testing and Physical Characterisation" section of the Euromat 2005 conference, Prague, 5-8th September 2005.
Organiser of "Modelling of Plant Cell Wall Polysaccharides" symposium at the 229th ACS National Meeting, Atlanta, 2006.
Organising committee for Polymer Fibres 2004/5, Manchester, UK.
Organisation and advisory committee for Ecocomp 2003/5, Queen Mary College, London.
Organising a session for the 227th ACS National meeting on *Biofibres*.
COST Workshop on "Characterisation Methods for Fibres and Paper", 1st – 3rd October, 2001, Hannasaari, Finland.
COST Workshop on "Methods for characterizing pulp fibre and paper surfaces" within the COST E11 "Characterisation Methods for Fibres and Paper", Nov 30th – December 1st, 2000 in Grenoble, France.

Editorial Boards of Journals

Journal of Materials Science: I am an editor of this journal. Receive a large volume of papers which I send out for review. Meet with other editors once a year to sit on panel to discuss strategy and direction of the journal.

I am on the Editorial Advisory Board for

Biomacromolecules (Impact factor: 5.371) - only one of 2 UK academics on the advisory board.
Cellulose (Impact factor: 3.476) - only UK academic on the advisory board

Journal of Bionics Engineering
Journal of Biobased Materials and Bioenergy

Grant proposal Refereeing

UK

Reviewer for: Royal Society India/UK research grant, Royal Society Fellowships, Joint LINK DEFRA/EPSC, EPSC (30+), BBRSC (2), EPSC/AHRC grant (1), Leverhulme Trust (1)
EPSC college member 2005 - present
EPSC Panel member "Enhancing Damage Tolerance" 2008
EPSC Panel member "Structural Prioritisation Panel" 2006, 2008, 2010
Daresbury proposal review panel (Biomedical Facilities Access Panel) 2005/8
Member of the panel of experts for DEFRA
Member of the panel of experts for the Georgian National Science Foundation

Overseas

Panel member for Science Foundation Ireland (2016; 3 panel members)
Panel member for Irish Research Council (2014 – present; Chair of panel)
Panel member for Academy of Finland - Biomass Conversion Panel (2009-2012)
Panel member for Academy of Finland - Physics/Infrastructure (2013)

Reviewer for: Austrian Science Fund proposal, The Knowledge Foundation, Swedish Research Council grants, Georgian National Science Foundation grant, l'Agence Nationale de la Recherche (ANR), National Science Foundation.

PhD Examinations

UK

External examiner for a PhD thesis, School of Materials, University of Manchester	2017
PhD thesis, School of Materials, University of Manchester	2016
PhD thesis, Department of Chemistry, University of Southampton	2016
PhD thesis, Dept. of Mechanical Engineering, University of Oxford	2015
PhD thesis, Department of Food Sciences, University of Nottingham	2015
PhD thesis, Department of Zoology, University of Oxford	2014
PhD thesis, Chemical Engineering, University of Nottingham	2013
PhD thesis, Mechanical Engineering, University of Nottingham	2013
PhD thesis, Materials, University of Cambridge	2013
PhD thesis, Materials, University of Sheffield	2013
PhD thesis, Materials, Queen Mary, London	2011
PhD thesis, Materials, University of Sheffield	2011
PhD thesis, Edinburgh Napier University	2011

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PhD thesis, Chemistry, University of Sheffield	2010
DPhil thesis, Materials, Oxford University	2010
PhD thesis, Advanced Materials, University of Bolton	2010
PhD thesis, School of Optometry, Cardiff University	2010
DPhil thesis, Cavendish Laboratory, University of Cambridge	2010
PhD thesis, Chemical Engineering, Imperial College, London	2009
PhD thesis, Textiles and Materials, University of Leeds.	2009
PhD thesis, Materials, Queen Mary, London.	2007
PhD thesis, Chemistry, University of Sheffield.	2006

Overseas

External assessor for 2 PhD student's theses, Aalto University, Finland, 2013

Main Opponent for a Doctoral thesis, Lulea University, Department of Engineering Sciences and Mathematics, Sweden, 2016

Main Opponent for a Doctoral thesis, Aalto University, Department of Wood Materials Science and Technology, Finland, 2015

Main Opponent for a Doctoral thesis, Adolphe Merkle Institute, University of Fribourg, Department of Chemistry, Switzerland, 2014

Main Opponent for a Doctoral thesis, School of Chemical Technology, Aalto University, Finland, 2014

Main Opponent for a Doctoral thesis, Forest and Landscape, Faculty of Life Sciences, University of Copenhagen, 2011.

Main Opponent for a Doctoral thesis, School of Chemical Engineering and Science, KTH, Stockholm, Sweden. 2008.

External examiner for a Doctoral thesis, Mechanical Engineering, University of Canterbury, New Zealand – by post. 2008.

Research Funding

Principal Investigator

At Exeter:

Royal Society /Newton	Newton Advanced Fellowship: Fabrication, Characteristics and Properties of Magneto-Responsive Hybrid Materials Based on Bacterial Cellulose	2016/18	£37k
EPSRC /Innovate UK	New Enzymatically Produced Interpenetrating Starch-Cellulose Gels	2016/20	£780k
UKIERI	Polymer and Carbon based Three Dimensional Micropatterned Nanofabric with Enhanced Wettability Contrast	2015/16	£20k
FP7	NEWSPEC (NEW cost-effective and Sustainable PolyEthylene based Carbon fibres for volume market applications)	2014/18	€730k
EPSRC	Feasibility Study: Centre for Innovative Manufacturing	2013	£62,263
EPSRC	Hybrid Electrospun Fibres from Biomass-Based Carbon Nanostructures	2011/13	£129,672
EPSRC	Stem cell fractionation using interactions with artificial matrices	2010/14	£77,278

Prior to Exeter:

KTP	Amber Composites, Nottingham	2010-11	£145,852
EPSRC	Hybrid Electrospun Fibres from Biomass-Based Carbon Nanostructures	2008/11	£425,496
EPSRC	Biomimetic Routes to Crystals with Superior Mechanical Properties	2007/10	£79,938
EPSRC	Functional and Green End-of-Life Nanocomposites: Design, Processing and Characterisation	2008/11	£118,952

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EPSRC	<i>Microstructure and Micromechanics of Natural and Regenerated Cellulose Fibres</i>	2003/6	£124,151
EPSRC	<i>Engineered and Chemically Modified Porous Cellulose Fibrous Networks For Controlled Cell Adhesion</i>	2004/6	£97,409
Royal Society	<i>Electrospinning of Cellulose Fibres for Composite Reinforcement</i>	2003/4	£6,160
Nuffield Foundation	<i>Raman Spectroscopic Stress Mapping in Wood Fibre and Paper-based Composites</i>	2002/3	£5,000

Co-Investigator At Exeter:

EPSRC	<i>Manufacturing of High Performance Cellulose Fibres to Replace Glass fibres & Carbon Fibre Precursors</i>	2014/19	£2.6M (£530k to Exeter)
EPSRC	<i>Doctoral Training Centre in Sustainable Materials and Manufacturing</i>	2014/19	£3.7M
BBSRC	<i>IBCarb – Glycoscience Tools for BioTechnology and Bioenergy</i>	2013/18	£2.5M
EPSRC	<i>New manufacturable approaches to the deposition and patterning of graphene materials</i>	2013/15	£1.1M
ERDF	<i>Centre for ALternative Materials and Remanufacturing (CALMARE)</i>	2013	£0.9M

Prior to Exeter:

EPSRC	<i>EPSRC Centre for Innovative Manufacturing in Composites</i>	2011/16	£5.1M
EPSRC	<i>Structural Evolution Across Multiple Time and Length Scales</i>	2011/16	£1.6M
EPSRC	<i>Stem cell fractionation using interactions with artificial matrices</i>	2010/14	£2.1M (£326k for credit split)
EPSRC	<i>New Challenges in Composite Micromechanics</i>	2005/8	£258,461
EPSRC	<i>Rationally designed self assembled peptide scaffolds for tissue regeneration</i>	2006/9	£632,374
BBSRC	<i>A confocal system for biomaterials and tissue engineering</i>	2008	£210,188
Royal Society	<i>Refurbishment grant for tissue engineering facilities</i>	2007	£1.2M

Other Research Funding

At Exeter:

Open Innovation LINK fund	University of Exeter/FP7	£420
Open Innovation LINK fund	University of Exeter/FP7	£900
Royal Society	The Leverhulme-Royal Society Africa Award Africa Awards	£180k

Prior to Exeter:

Royal Society	Travel Grants	£1,400
Marie Curie Grant	Travel costs for 11 th ECCM conference	£1,000
Peter Allen Fund, UMIST	Travel costs for conference	£970
University of Manchester	Faculty Scholarship for PhD Student	£6,250

Industrial Funding

At Exeter:

SPi3Dr	TSB feasibility study on electrospinning	£6,353
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Prior to Exeter:

Lenzing	Have on-going projects with company on carbon and cellulose fibres	£10,000+
Unilever	Electrospinning of polymeric fibres	£13,500

Refereed Papers

H-factor 34; Number of citations 5047 (ISI Web of Knowledge)

H-factor 38; Number of citations 7321 (Google Scholar)

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* Lead or corresponding author(s)

Since starting at Exeter (in Sept 2011) I have published >30 papers including high impact journals: *Nature Materials*, *Biomacromolecules*, *ACS Applied Materials & Interfaces*, *ACS Sustainable Chemistry & Engineering*.

112. Hewson, D., Vukusic, P., Eichhorn, S.J.* 2017. Reflection of circularly polarized light and the effect of particle distribution on circular dichroism in evaporation induced self-assembled cellulose nanocrystal thin films. *AIP Advances*, **7**, 065308
111. Kakunuri, M.*, Khandelwal, M., Sharma, C.S., Eichhorn, S.J. 2017. Fabrication of bio-inspired hydrophobic self-assembled electrospun nanofiber based hierarchical structures. *Materials Letters*, **196**, 339-342.
110. Kakunuri, M.*, Khandelwal, M., Sharma, S.S., Wanasekara, N.D., Eichhorn, S.J. 2017. Three-Dimensional Electrospun Micropatterned Cellulose Acetate Nanofiber Surfaces with Tunable Wettability, *Journal of Applied Polymer Science*, **134**, 44709.
109. Cannon, D., Eichhorn, S.J., Donald, A.M.* 2016. The Structure of Spherulites in Insulin, β -Lactoglobulin and Amyloid Beta. *ACS Omega*, **1**, 915-922 (Top 20 Most downloaded paper)
108. Lewandowska, A.E., Eichhorn, S.J.* 2016. Quantification of the degree of mixing of cellulose nanocrystals in thermoplastics using Raman spectroscopy. *Journal of Raman Spectroscopy*, **47**, 1337-1342.
107. Zhu, C., Richardson, R.M., Potter, K.D., Koutsomitopoulou, A.F., van Duijneveldt, J.S., Vincent, S.R., Wanasekara, N.D., Eichhorn, S.J.*, Rahatekar, S.S.* 2016. High modulus regenerated cellulose fibres spun from a low molecular weight microcrystalline cellulose solution. *ACS Sustainable Chemistry & Engineering*, **4**, 4545-4553.
106. Wanasekara, N.D., Michud, A., Zhu, C., Rahatekar, S., Sixta, H., Eichhorn, S.J.* 2016. Deformation Mechanisms in Ionic Liquid Spun Cellulose Fibres. *Polymer*, **99**, 222-230.
105. Zhou, F.-L., Hubbard-Cristinacce, P.L., Eichhorn, S.J., Parker, G.J.M.* 2016. Preparation and characterization of polycaprolactone microspheres by electrospraying, **50**, 1201-1205.
104. Wanasekara, N.D., Santos, R.P.O., Douch, C., Frollini, E., Eichhorn, S.J.* 2016. Orientation of Cellulose Nanocrystals in Electrospun Polymer Fibres. *Journal of Materials Science* (50th Anniversary Edition – invited submission), **51**, 218-227.
103. Zhou, F.-L., Cristinacce-Hubbard, P.L., Eichhorn, S.J., Parker, G.J.M.* 2015. Production and Cross-sectional Characterization of Aligned Co-electrospun Hollow Microfibrous Bulk Assemblies. *Materials Characterization*, **109**, 25-35.
102. Alqus, R., Eichhorn, S.J.*, Bryce, R.A.* 2015. Molecular Dynamics of Cellulose Amphiphilicity at the Graphene-Water Interface. *Biomacromolecules*, **16**, 1771-1783.
101. Quero, F.*, Coveney, A., Lewandowska, A.E., Richardson, R., Díaz-Calderón, P., Lee, K.-Y., Eichhorn, S.J., Alam, A., Enrione, J.* 2015. Mechanically Robust Gelatin-Matrix Natural Composite Materials with Optical Visible-Transparency and Ultraviolet Opacity. *Biomacromolecules*, **16**, 1784-1793.
100. Lewandowska, A.E., Soutis, C., Savage, L., Eichhorn, S.J.* 2015. Carbon Fibres with Ordered Graphitic-Like Aggregate Structures from a Regenerated Cellulose Fibre Precursor. *Composites Science & Technology*, **116**, 50-57.
99. Tzeng, P., Hewson, D.J., Vukusic, P., Eichhorn, S.J.*, Grunlan, J.C.* 2015. Bio-Inspired Iridescent Layer-by-Layer-Assembled Cellulose Nanocrystal Bragg Stacks. *Journal of Materials Chemistry C*, **3**, 4260-4264.
98. Arjmandi, R., Hassan, A., Eichhorn, S.J.*, Mohammad-Haafiz, M.K.*, Zakaria, Z., Tanjung, F. 2015. Enhanced Ductility and Tensile Properties of Hybrid Montmorillonite/Cellulose Nanowhiskers Reinforced Polylactic Acid Nanocomposites. *Journal of Materials Science*, **50**, 3118-3130.
97. Hubbard, P.L., Zhou, F.L., Eichhorn, S.J., Parker, G.J.M.* 2015. Biomimetic Phantom for the Validation of Diffusion Magnetic Resonance Imaging. *Magnetic Resonance in Medicine*, **73**, 299-305.
96. Deng, L.B., Lewandowska, A.E., Young, R.J., Zhang, G.P., Sun, R., Eichhorn, S.J.* 2014. Catalytic Graphitization of Electrospun Cellulose Nanofibres Using Silica Nanoparticles. *Reactive & Functional Polymers*, **85**, 235-238.
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3. Eichhorn, S.J., Young, R.J.*, and Yeh, W.-Y. 2001. Deformation Process in Regenerated Cellulose Fibres. *Textile Research Journal*, **71**, 121-129.
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Book Chapters

- “Characterisation of cellulose nanofibre based nanocomposite interfaces” in *Green Materials; processing technologies, properties and applications*. (K. Oksman ed.) 2013, Woodhead.
- “Characterisation of Interfaces in Natural Fibre Composites using Raman Spectroscopy and X-ray Diffraction” in *Interface engineering in natural fibre composites for maximum performance* (N. Zafeiropoulos ed.) 2011, Woodhead.
- Co-editor for a book “*Handbook of Textile Fibre Structure*” (2 volumes) with Professors John Hearle (Manchester), Mike Jaffe (New Jersey) and Takeshi Kikutani (Japan).

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- “Spectroscopic Characterisation of Polymer Fibres” in *Handbook of Textile Fibre Structure* (J.W.S. Hearle, S.J. Eichhorn, M. Jaffe, T. Kikutani eds) 2008, Woodhead.
- “Raman Applications in Synthetic and Natural Polymer Fibers” with R.J. Young in *Raman Spectroscopy, Applications for Soft Matter* (M.S. Amer ed.) 2008. Blackwell Publishing.
- “Regenerated Cellulose Reinforced Plastics” in *Natural Fibers, Plastics and Composites* (F.T. Wallenberger, N. Weston eds.) 2004. Kluwer Academic Publishers. - invited submission.
- “Useful Insights into Cellulose Nanocomposites Using Raman Spectroscopy” in *Cellulose Nanocomposites* (M.Sain, K.Oksman eds.) 2005. ACS Publishers Inc. - invited submission.

Conference Papers

Keynote/Invited papers

At Exeter:

- Eichhorn, S.J. “Dissolving, Spinning and Aligning Cellulose” 31st October/1st November, 50th Anniversary Meeting of the RSC Carbohydrate Division, Warwick University, 2016.
- Eichhorn, S.J. “Cellulose: Nature’s Biopolymer from the Past and for the Future” (keynote opening talk) 2016 Engineering Sciences Postgraduate Conference, University of Southampton, 2nd November, 2016.
- Eichhorn, S.J. “Carbon Fibres from Sustainable Sources” GO Carbon Conference, 27,28th October, Manchester, 2015.
- Eichhorn, S.J. “Assembly of Cellulose in Water”, Herman Mark Symposium, University of Vienna, 29/30th September, 2015.
- Eichhorn, S.J. “Carbon Fibres from Renewable and Sustainable Precursors: Cellulose and Other Contenders”. ACS “Green Polymer Chemistry: Biocatalysis and Biobased Materials” 248th ACS National Meeting and Exposition, San Francisco, August 10-14th, 2014.
- Eichhorn, S.J. “Understanding Interfaces in Natural Fibre Composites”. Weight Reduction and Advanced Solutions for Optimised Energy Efficiency in Transport Materials for Energy Efficiency in Transport (MEET) - Research Conference. 28th-29th November 2013, Caen, France.
- Eichhorn, S.J. “Carbon Fibres from Cellulose”. European Polysaccharide Network of Excellence Meeting, 21-24th October, Nice, France, 2013
- Eichhorn, S.J. “Using Raman Spectroscopy to Follow the Nanomechanics of Cellulose Nanofibres and Composites”. Gordon Research Conference on Nanomechanics, Hong Kong University of Science and Technology, 4-9th August, 2013
- Eichhorn, S.J. 2013. “Making Carbon Fibres from Novel Cellulose Precursors”. 2013 Advancements in Fiber-Polymer Composites Conference, Milwaukee, 6-7th May, 2013.
- Eichhorn, S.J. 2012. “Cellulose Nanowhiskers: Promising Materials for Advanced Applications”. CIMTEC 2012. 4th International Conference on Smart Materials, Structures & Systems, June 10th -14th, Motecatini Terme, Tuscany, Italy.
- Eichhorn, S.J., T. Pullawan, R. Rusli, S.J. Rowan, C.Weder. 2011. “Understanding Interfaces in Cellulose Nanowhisiker-Based Nanocomposites”. BEPS (BioEnvironmental Polymer Society) – Vienna, 28th-30th September, 2011.

Prior to Exeter:

- Eichhorn, S.J. International Conference on Interfaces & Interphases in Multicomponent Materials (IIMM), Sheffield, 1-3rd September, 2010
- Eichhorn, S.J. COST Action FP0802 “Cell Wall Micromechanics” meeting in Hamburg 6-8th October 2010. One of 3 keynotes.
- Eichhorn, S.J. 2009. Understanding Interfaces in Natural Composites Using Raman Spectroscopy. Symposium on Fibre Reinforced Composites. UK – SA Science Networks programme: Royal Society/National Research Foundation Fund.
- Eichhorn, S.J. 2009. The Mechanics and Interfaces in Cellulose Composites. High Polymer Research Group Meeting, 26 – 30th April, Pott Shrigley, UK.
- Eichhorn, S.J. 2008. Natural Fibre Composites: From Fingernails to Cellulose Whiskers. IRC Polymer Showcase, 16-18th Sept, 2008, York, UK.
- Eichhorn, S.J. 2008. Natural Composites: From the Tips of Your Fingers to the Bottom of the Deep Blue Sea. UK-Japan Workshop on Innovation Inspired by Nature: Paradigm Shift on Material Research. British Embassy. Specially invited 1 day meeting on 31st October 2008 in Tokyo, Japan – all flights and accommodation/expenses covered by Tohoko University/Teijin.

Professor S.J. Eichhorn Curriculum Vitae

- Eichhorn, S.J. 2008. Structural and Mechanical Analysis of Cellulose Using Raman Spectroscopy and X-ray Diffraction. 235th ACS National Meeting, April 6-10, 2008, New Orleans, LA, USA.
- Eichhorn, S.J., Kalaskar, D., Ulijn, R.V., Gough, J.E., Sampson, W.W. 2007. The Use of Modified Cellulosic Fibres For Tissue Engineering. International Cellulose Conference, ICC2008, 22nd – 25th October, Tokyo, Japan.
- Eichhorn, S.J. 2007. The Use of Raman Spectroscopy and X-ray Diffraction for Analysing Nanocomposites and Biomaterials, MC8, 2nd - 5th July, UCL, London.
- Eichhorn, S.J., Davies, G.R. 2006. Modelling Cellulose Polymorphs Using Molecular Mechanics. 231st ACS National Meeting, 26-30th March, Atlanta, GA, USA.
- Eichhorn, S.J., Sturcova, A., Kalaskar, D., Li, N. 2006. Cellulose Nanofibres for High Performance Composites. 231st ACS National Meeting, 26-30th March, Atlanta, GA, USA.
- Eichhorn, S.J., Gough, J.E., Ulijn, R.V., Sampson, W.W., Kalaskar, D., Cai, S.J. 2006. Chemical Functionalisation and Geometrical Modification of Cellulose Fibrous Networks for Tissue Engineering. 231st ACS National Meeting, 26-30th March, Atlanta, GA, USA.
- Eichhorn, S.J. 2006. The Micromechanical Properties of Cellulose Fibres: An Overview. Polymer Fibres 2006, Manchester, UK, 12-14th July, 2006. – Keynote.
- Eichhorn, S.J. 2006. Synchrotron X-ray Diffraction of Cellulosic Materials and Composites. Japan/UK Workshop on the Applications of X-ray Fibre Diffraction, 9th July, 2006 - BBRSC grant and holders paid for cost of travel.
- Eichhorn, S.J. 2006. The Mechanics of Biogenic Calcium Carbonate Composite Materials. Royal Society of Chemistry – Materials Chemistry Forum in Association with Dalton and Faraday Divisions. NZIC Easterfield Medal Lecturer honoring Dr K M McGrath, University of Wellington, NZ, 30th January, 2006 in the University of Manchester.
- Eichhorn, S.J. 2005. Relationship between Processing and Micromechanics of Regenerated Cellulose Fibres. 229th ACS National Meeting, San Diego, March 13-17th, USA.
- Eichhorn, S.J. 2005. The Deformation Micromechanics of Cellulose: What Does this Tell us About Structure? Gordon Research Conference “The Chemistry of Polysaccharides”, Hong Kong, June 5-10th.
- Eichhorn, S.J. 2005. The Deformation of Cellulose: What Can This Tell Us About Structure? 229th ACS National Meeting, San Diego, March 13-17th, USA. - *Invited to give a talk within the Cellulose and Renewable Materials Division honouring Prof D. Klemm.*
- Eichhorn, S.J. 2005. Stress Transfer in Two-Phase Polymer Systems Analyzed Using Synchrotron Microfocus X-Ray Diffraction., *14th Annual Diffraction and Non-Crystalline Diffraction Workshop*, 22-24th June, Cardiff University.
- Eichhorn, S.J., Scurr, D.J., Golshan, M., Thompson, S.P., Cernik, R.J. 2004. Deformation Micromechanics and Microstructural Studies of Seashells. FGM - Functionally Graded Materials Conference, Leuven, Belgium, 11th-14th July.
- Eichhorn, S.J., R.J. Young and J. Sirichaisit. 2002. The Deformation Micromechanics of Natural and Regenerated Fibres and Composite Materials. 223rd National Meeting of the American Chemical Society, April 7-11th Orlando, Florida –*I was given an honorarium to attend this conference.*

Oral presentations (Presenter in bold)

- Rusli, R., **Eichhorn, S.J.** 2009. Interfacial Studies of Cellulose Whisker Polymer Nanocomposites. *ICCM-17*, 27th 31st July, Edinburgh, UK.
- Quero, F., **Eichhorn, S.J.** 2009. Raman spectroscopy: a Powerful Analytical Tool for the Study of the Interface of Natural Composites. SICOMP, 8-9th June, Pitea, Sweden.
- Eichhorn, S.J.** 2008. Deformation of Cellulose Nanofibres. *Polymer Fibres 2008*, 9-11th July, Manchester, UK.
- Sureeyatanapas, M.** Hejda, S.J. Eichhorn, R.J. Young. 2008. Nanotube composite coatings as strain sensors on glass fibres in epoxy composites, *ECCM-13 (13th International Conference on Composite Materials)*, 1-5th June, Stockholm, Sweden.
- M. Hejda, K. Kong, R.J. Young, S.J. Eichhorn.** 2008. Deformation micromechanics of glass fibre based and hybrid cellulose-glass fibre composites, *ECCM-13 (13th International Conference on Composite Materials)*, 1-5th June, Stockholm, Sweden.
- R.J. Young, S-Y. Lei, P. Potluri, S.J. Eichhorn, J. A. Bennett, R.J. Davies.** 2008. Analysis of the microstructure and deformation of woven composites using microfocus X-ray diffraction, *ECCM-13 (13th International Conference on Composite Materials)*, 1-5th June, Stockholm, Sweden.
- R. J. Young, P. Kannan, **S. J. Eichhorn.** 2008. Polymer composite nanofibres, *ECCM-13 (13th International Conference on Composite Materials)*, 1-5th June, Stockholm, Sweden.

Professor S.J. Eichhorn Curriculum Vitae

- Mottershead, B., **Eichhorn, S.J.**, Young, R.J., Davies, R.J. 2007. Deformation Micromechanics of Cellulose Fibre Based Model Composites, *ICCM-16 (16th International Conference on Composite Materials)*, 9th – 13th July, Kyoto, Japan.
- Eichhorn, S.J.**, Sturcova, A., Kalaskar, D. 2005. Cellulose Nanocomposite Microcomposites Investigated Using Raman Spectroscopy., *EcoComp*, June 20 and 21st 2005, Royal Institute of Technology, Stockholm, Sweden.
- Eichhorn, S.J.**, Sturcova, A. 2005. The Micromechanics of Tunicate and Sugarbeet Cellulose Nanocomposites. 229th ACS National Meeting, San Diego, March 13-17th, USA
- Eichhorn, S.J.**, Young, R.J., Mottershead, B. 2004. Deformation Micromechanics of Natural and Regenerated Cellulose Composites. 5th Global Wood and Natural Fibre Composite Symposium. Kassel, Germany, April 27th - 28th.
- Eichhorn, S.J., **Scurr, D.J.** 2004. Synchrotron X-ray Diffraction Studies of Seashells. MRS Fall Meeting, Boston, November - *Accepted for a full publication within MRS Proceedings*. - paper cited in *Science*, **310**, 2005, 1144-1147.
- Eichhorn, S.J.**, Kong, K., Mottershead, B. 2004. Deformation Micromechanics of High Performance Cellulose Fibres. 227th ACS National Meeting, Anaheim, CA, USA, March 28th - April 1st.
- Eichhorn, S.J.**, Young, R.J. 2003. Deformation Micromechanics of Natural and Regenerated Cellulose Fibre Composites. *EcoComp*. Queen Mary College, London.
- Eichhorn, S.J.**, Young, R.J. 2003. The Deformation Micromechanics of Cotton Fibres. Deformation, Yield and Fracture of Polymers. Institute of Materials. Churchill College - Cambridge.
- Eichhorn, S.J.**, Young, R.J. 2003. Deformation micromechanics of natural cellulose composites. *Abstracts of Papers of the American Chemical Society* **225** 100-CELL.
- Eichhorn, S.J.** and Young, R.J. 2002. Deformation Micromechanics of Natural and Regenerated Cellulose Fibres and Composite Materials. 23rd Risø International Symposium on Materials Science, Risø National Laboratory, Roskilde, Denmark.
- Eichhorn, S.J.** and Young, R.J. 2001. Deformation Micromechanics of Cellulose Fibres, Wood and Paper. COST E11 Final Workshop. Research Techniques for Tomorrow's Papermaking. Hanasaari, Espoo, Finland.
- Eichhorn, S.J.** and Young R.J. 2001. Deformation Micromechanics of Natural Cellulose Fibre Composites. IPCM-Seventh International Conference on International Phenomena in Composite Materials. Arcachon. France.
- Eichhorn S.J.** and Young R.J. 2001. Deformation Micromechanics of Natural and Regenerated Cellulose Fibre Composites. *EcoComp*. Queen Mary and Westfield College. London.
- Young, R.J.**, Sirichaisit, J., Eichhorn, S.J. and Vollrath, F. 2000. Deformation Processes in Natural Polymer Fibres. Deformation, Yield and Fracture of Polymers. Institute of Materials. Churchill College - Cambridge.
- Eichhorn, S.J.**, Sirichaisit, J. and Young, R.J. 2000. Deformation Mechanisms in Natural Polymer Fibres and Composites. *Polymer* 2000. UMIST. Manchester.

Invited talks/colloquia

- September 2016 – Chemistry Department Seminar, University of Strathclyde.
- November 2015 – UCL, London School of Pharmacy Seminar.
- November 2015 – Cambridge, Melville Laboratory (Chemistry) Seminar.
- April 2015 – Cambridge University – Local IOM³ chapter.
- May 2014 – Sheffield University, Materials Department. Seminar to department.
- April 2014 – Strathclyde University, Chemistry Department. Seminar to department.
- February 2013 - Sheffield University, Chemistry Department. Seminar to department and polymer group.
- May 2012 - Bristol University, ACCIS (Advanced Composites Centre for Innovation and Science). Seminar to DTC students and staff from across the University.
- March 2011 – Portsmouth University, Advanced Polymer and Composites Research Group. Seminar.
- November 2010 – Bristol University, ACCIS (Advanced Composites Centre for Innovation and Science). Seminar to DTC students and staff from across the University.
- October 2010 – Wuhan University, Department of Chemistry – invited lecture and research visit (all expenses paid)
- June 2010 – Materials, Cambridge – invited talk to group of Prof. Alan Windle FRS
- May 2010 – Queens University, Belfast – invited talk to School of Mechanical & Aerospace Engineering
- March 2010 – SUNY (Syracuse University New York), Cellulose Research Institute – invited lecture (all expenses paid)
- February 2010 – Glyndwr University, Wales – research seminar to Advanced Materials and Water Soluble Polymers group.
- February 2009 – Sheffield Hallam University, Materials and Engineering Research Institute Seminar Series.

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- December 2008 – KTH, Polymer Engineering, Stockholm, Sweden Seminar – travel paid for by KTH and a small honorarium.
- May 2008 – University of Sheffield, Department of Engineering Materials Seminar Series.
- February 2008 – Glasgow University, Chemistry Department Seminar Series.
- November 2007 – Imperial College, Chemical Engineering Department Seminar Series.
- July 2007 – Professor Takeishi Nishino's research group, Kobe University.
- July 2007 – Professor Hiroyuki Yano's research group, Department for the Sustainable Humanosphere, Kyoto University.
- February 2007 – Diamond synchrotron Seminar series.
- May 2006 - Department of Chemical and Biological Engineering, Chalmers University, Sweden.
- May 2006 - Department of Materials Science and Process Engineering Institute of Wood Science and Technology, BOKU - University of Natural Resources and Applied Life Sciences, Vienna. Paid for flights and hotel.
- March 2006 - Open University, Atomic Molecular and Materials Engineering Group Seminar Series.
- September 2005 - University of Edinburgh, Materials Research Centre and Department of Chemistry colloquium.
- May 2005 - Martin Luther University Halle-Wittenberg, Agricultural Department, Institute of Agronomy and Crop Science and the Fraunhofer Institute of Applied Polymer Research at Potsdam-Gölm for 1 week to give talks and discuss collaboration.
- February 2005 - EPFG/CERMAV, Grenoble - Invited Seminar by Professor Alain Dufresne.
- April 2002 - University of Tennessee (Wood Science and Composites Research Group).