

Curriculum Vitae

JAWWAD A. DARR

1. Personal Details

Name: Jawwad A. Darr
Department: Chemistry
Present appointment: Professor in Materials Chemistry (Oct 2011)

2. Education/Qualifications

<u>Dates</u>	<u>Detail of degree; diploma; other qualification</u>	<u>Institution</u>
Oct 1988 – Jul 1991	B.Sc. in Chemistry (2:1)	Department of Chemistry, University of Manchester
Oct 1991 – May 1995	Ph.D. "Group 2 and Lanthanide Metallosiloxanes", supervisors Dr Simon Drake, Professor Mike Mingos	Department of Chemistry, Imperial College

3. Professional History (in chronological order)

<u>Dates</u>	<u>Detail of position held</u>	<u>Institution</u>
Feb. 1995– Feb. 1996	Postdoctoral Research developing volatile metal– organic CVD precursors to solid oxide fuel cells with Prof Mike Mingos	Department of Chemistry, Imperial College
Feb. 1996– Oct 1999	PDRA developing greener supercritical fluid routes to catalyst preparation and nanomaterials with Prof. Martyn Poliakoff	Department of Chemistry, University of Nottingham
Oct 1999– Oct 2001	Experimental Officer in Biomedical Materials	IRC in Biomedical Materials, Queen Mary University
Oct 2001– Oct 2006	EPSRC Advanced Research Fellow and Lecturer	Department of Materials Queen Mary University
Oct 2006– Apr 2007	Senior Lecturer in Materials Chemistry	Department of Materials Queen Mary University
May 2007–	Reader in Materials Chemistry	Department of Chemistry, University College London
October 2011	Full Professor in Materials Chemistry	Department of Chemistry, University College London

4. Other Appointments and Affiliations

2000 – Member of the Royal Society of Chemistry (MRSC).
2001 – Member of the EPSRC peer review college and panel member and referee EPSRC proposals.
2001 – London Technology Network Fellow involved in technology transfer, road-mapping and assisting colleagues to win industry support
2001 – Internal and External examiner on PhD theses (including University of Liverpool, Queen Mary University, Kings College, Reading University, University of Cardiff)
2001 – Peer reviewer for national and international journals (e.g. *Chemistry of Materials*, *J. Photochem. Photobiol. J. Mater. Chem.*, *J. Combinatorial Chemistry*, *Advanced Materials*, *Chem. Commun.*, *Dalton Trans.*)
2001 – 2006 Safety Advisor, Department of Materials, QMUL, London.
2003 – Secretary and Webmaster of the Royal Society of Chemistry Colloid & Surface Science Group which is jointly run with the SCI colloids group.
2006 – Visiting Professor at GIKI University, Pakistan;
2006 – Member of the 'International Society for the Advancement of Supercritical Fluids (ISASF)'
2006 – Member of International Advisory Board for the ECI (Engineering Conferences)

- International) conference, Control of Particulate Processes VII
- 2007 – Departmental Resources Committee Member, UCL
- 2007 – UK Semiconductor Photocatalysis Network; Task leader for the New Materials Group
- 2007 – Vice president of the Chemical and Physical Society, UCL Chemistry
- 2008 – Member of the national Chemical Innovation KTN Advisory group member on “Chemistry for Product Design” and reviewer for their industrial case awards.
- 2008, 2009 Main organizer of RSC/SCI ‘Nanoparticles 2008’ (Yorkshire) and 2009 (Liverpool) international conferences
- 2009 – Visiting Professor COMSATS University, IRC in Biomedical Materials, Lahore, Pakistan
- 2010 – Co-organizer and on the organizing committee of forthcoming RSC/SCI ‘Colloids 2011’ (London) international conference

5. Prizes, Awards and other Honours:

<u>Dates</u>	<u>Detail of prize, award or honour</u>	<u>Awarding / electing body</u>
2001 – 2006	EPSRC Advanced Fellowship on “Next Generation Biomedical Materials using Supercritical fluids. EPSRC states that these fellowships “provide support for outstanding researchers at an early stage of their career.”	EPSRC
2001 –	Awarded affiliate staff membership of the IRC in Biomedical Materials, QMUL, London.	IRCBM
2006 –	Visiting professorship at the IRC in Biomedical Materials, COMSATS University, Lahore, Pakistan and GIKI University (Materials), Topi. The mission of the IRCBM is to develop more affordable biomedical materials and implants and I am helping to develop their undergraduate materials syllabus and also in developing their forthcoming biomaterials undergraduate course and biomaterials master’s projects.	Higher Education Commission, Pakistan

6. Grants:

Active grants – values shown in **bold**.

Principal Investigator:

2001–2006	EPSRC Advanced Research Fellowship Grant “Next generation Biomedical Materials from Supercritical Fluids”	£227,422
2004	The Royal Society Grant “New membrane materials for fuel cells”, collaboration with Russia.	£9800
2004–2006	Royal Society travel and other grants (total)	£14,280
2004–2005	Chevening Fellowship Grant (x2) on “environmentally friendly emulsion electroplating” fluids for Dr Y. Soman and Dr T. Kuzmenko”	£25,000
2004–2006	EPSRC Grant “Clean and Controlled Growth of Nanoceramic Particles”	£121,901
2005-2008	EPSRC / Industrial Case Award Funding from Johnson Matthey “Catalyst nanomaterials”	£16,000
2005–2009	EPSRC Grant “High Throughput Nanomaterials Discovery” Total project grant with ZX Guo, J. Evans., S. Yang, I Rehman and Leeds University. Total £1.1M plus £0.25M industry in kind support)	£886,014
2006–2010	EPSRC / Industrial Case Award Sun Chemicals on “photo-protective nanomaterials”	£48,000
2008-2011	EPSRC Grant “Continuous Hydrothermal Synthesis of Nanomaterials:	£515,919

	From Laboratory to Pilot Plant” with S. Yang and I Rehman In collaboration with Leeds University (£0.5M) and £0.2M in kind.	
2009–2010	Technology Strategy Board (TSB) Grant Security Taggants: (Total funds from TSB = £201,250)	£161,000
Sub total as a PI since 2001 (<9 years)		(£2,025,336)

Co–Investigator:

2001-2002	Heptagon Life sciences initiative fund “Proof of concept project for commercialisation of new dental cements using a novel clean process” (Dr A. Bushby PI)	£90,000
2008–2011	EPSRC Grant (Nanotech. Grand Challenges: Energy) “Nanocrystalline Photodiodes: Novel Devices for Water Splitting” (I. Parkin is PI) with substantial industry in kind support	£471,972
2010–2013	EPSRC Grant (Grand Challenges 3) <i>Bio–inspired (Fe,Ni)S nano–catalysts for CO₂ conversion</i> (N. De Leeuw is PI, and includes Professor CRA Catlow, Prof G. Sankar, Dr G Hogarth, Dr K. Holt)	£1,138,877
2011–2014	TSB and EPSRC joint Grant (Nanotech. Grand Challenges part II) “Nanocrystalline Water Splitting Photodiodes II; Device Engineering, Integration and Scale–up” Total Grant value £1.8M with industry support (I. Parkin PI)	£590,000
Sub total as a CI since 2001 (<9 years)		(£2,290,849)

Total direct research income as a PI and CI **£ 4,316,185**

Total indirect research income from industry over 9 years is > £0.5M.
Grant income for two or three year periods (NOT including indirect support)

7. Invited talks:

<u>Date</u>	<u>Details</u>
International Meetings and Symposia	
2004	Clean Materials Technologies” UK/Russia Workshop on Green Sustainable Processing with Supercritical Fluids, Chernogolovka, Russia, March 2004
2004	Nano and Biomaterials” GIKI University, Topi, Pakistan, December 2004
2005	“Nano and Biomaterials using Supercritical Fluids”, UK/Japan Workshop on Green Sustainable Processing with Supercritical Fluids, Tokyo, March 2005
2006	“High Throughput Nanomaterials Discovery” at SRI International Labs in California, USA April 22nd 2006.
2006	“High Throughput Inorganic Nanomaterials Discovery” NMCM1 meeting, held at NIST in Washington USA, April 24th 2006.
2006	“Supercritical Fluid Routes to Nano–Catalysts and Technological Materials”, Boreskov Institute of Catalysis, Novosibirsk, Russia, scheduled for 10th December 2006 (unable to attend)
2008	“Future Directions for Younger Researchers for Multidisciplinary Research in Pakistan” and “Opportunities for World–Leading Multidisciplinary Research in Pakistan” (for senior academics) at COMSATS University, Chak Shahzad Campus, Islamabad, Pakistan on 18th December 2008 (two lectures).
2008	“Adventures in Multidisciplinary research” at the Pakistani Institute of Technology for Minerals and Advanced Engineering Materials (PITMAEM), PCSIR Lab Complex, Ferozpur Road, Lahore on Sunday 21st December 2008
2008	Adventures in Multidisciplinary research” at the IRC in Biomedical Materials, COMSATS University, Lahore Campus, Ravind Road, Lahore, Pakistan on Tuesday

- 23rd December 2008
- 2009 “High Throughput Nanoceramics Discovery” at Nanomaterials 09 which was held in Bonn Germany, from 17–18th June 2009.
- 2009 “Nanoceramics for Energy Materials” for NUST University (Chemical and Materials Engineering), Islamabad, Pakistan (Aug 2009)
- 2009 “Nanoceramics for Energy Materials” for GIKI university (Department of Materials), Topi, Pakistan (Aug 2009)
- 2009 “Future Directions and Opportunities for World–Leading Multidisciplinary Research” for the Khwarzimid Science Society (KSS is a non–profit Association aimed at furthering a science culture in Pakistan’s educational institutions and in the general public) at Punjab University, Lahore, Pakistan (Aug 2009)
- 2010 “Nanomaterials for Energy Applications; from Water Splitting Devices to Solid Oxide Fuel Cell Development” ETH Zurich, Department of Materials (during EU Nanomission to Europe 5th March 2010)
- 2010 “Nanomaterials for Energy Applications” at the Paul Scherer Institute (during the EU Nanomission to Europe) 4th March 2010
- 2010 “A New High Throughput and Safer Green Technology for Nanophosphor Syntheses” at the Phosphors Global Summit in San Diego USA held during 23rd March 2010
- 2010 “Biomaterials; Future trends and Directions” 2nd PSoBTE Meeting on Biomedical Materials, King Edward Medical College Lahore, Pakistan, July, 2010
- 2010 “High throughput hydrothermal nanoceramics synthesis and discovery using automation” ISHA 2010 Conference, Beijing China, July 2010.
- 2010 Environmentally Friendly Routes to Nanoceramics Discovery and Scale–up, Zhejiang University, Hangzhou, China July 2010
- 2010 “Continuous Hydrothermal Nanoceramics Synthesis; from Combinatorial to Pilot Plant” UK–China Forum on Advanced Processing /Manufacture of Materials and Nanostructures, JC Marriott Hotel Shanghai, China, August 2010

National Meetings

- 2004 “Using Nano–Bio–Rapid–Clean Technologies for Drug Delivery and Tissue Engineering” at the London Technology Network (LTN) seminar on Micro and Nanotechnologies in Medicine, 27th September 2004
- 2004 “Nano– and Biomaterials using Supercritical Fluids Technologies“, at The IEE Seminar on MNT in Medicine, London, 17 November 2004
- 2005 “Nano and Biomaterials using supercritical fluids” Imperial College, Dept of Materials, May 2005.
- 2006 "Nanomaterials from Supercritical Fluids" at Leeds University, IPSE. April 20th 2006.
- 2006 “High Throughput Inorganic Nanomaterials Discovery” QMUL, Engineering Dept. November 2nd 2006
- 2006 “High Throughput Inorganic Nanomaterials Discovery” Cambridge University, Engineering Faculty, November 22nd 2006
- 2006 “High throughput nanoceramics discovery; efficient methods for making energy Materials” Future Energy: Chemical Solutions, University Nottingham Sept, 2007
- 2007 “High Throughput Inorganic Nanomaterials Discovery”. Christopher Ingold Lectureship Symposium in honour of for Prof Tom Welton, ”, UCL, Jan 2007
- 2007 “High Throughput Inorganic Nanomaterials Discovery” Birmingham Metallurgy Dept. 2007.
- 2007 “Storming the Periodic Table” at POLFEST Sept 2007
- 2009 “Use of Continuous Hydrothermal Flow Technology for the Synthesis of Substituted Nanoceramics and Their Transparent High Strength Sintered Monoliths” Biomaterials Chemistry Group 4th Annual Meeting at SCI, Belgrave Square, London on the 15 January 2009
- 2009 “Throughput Nanoceramics Discovery” at the London Technology Network one day seminar on “Advances in Smart Materials” on 21st January 2009.
- 2009 “High Throughput Discovery of Nanoceramics for Energy, Healthcare and Security

- 2009 Applications", at the Department of Chemistry, University of Aberdeen, October, 2009
- 2009 "Recent Developments in Robots and Nanoparticles" on 26th January 2010 at UCL chemistry Department
- 2009 "High Throughput Nanoceramics Synthesis with RAMSI, the Rapid Automated Materials Synthesis Robot" on March 1st 2010 at Department of Chemistry, Cardiff University (RSC divisional lecture)
- 2009 "An Automated Liquid and Nanoparticle Slurry Handling Combinatorial Nanoceramics Synthesis Robot" at ELRIG event on Liquid Handling and Label Free Detection Technologies at Whittlebury Hall, Silverstone, UK on 4th March 2010. [was unable to attend talk but as give by PDRA Josie Goodall]
- 2009 "Continuous hydrothermal flow synthesis of materials for UV attenuation and photocatalysis" at Nanoparticles 2009 conference held at Liverpool University on 3rd September 2009
- 2010 "High Throughput Nanomaterials at a workshop at Diamond, RAL, Oxfordshire on 7th April 2010.
- 2010 "High Throughput Nano Photocatalyst Synthesis and Discovery; Automated Continuous Hydrothermal Reactors" at SP3 (Semiconductor Photocatalysis) on in Glasgow. April 12th 2010
- 2010 "High Performance Engineered Nanomaterials: From University to Market" Nanomaterials 2010, Jurys Hotel, London, June 2010
- 2010 "High Throughput Nanoceramics Discovery – Efficient Continuous Hydrothermal Automation for Synthesising Photocatalyst Nanomaterials" SCI meeting on Photocatalysis, UCL, London, September 2010

Industrial Lectures (National and International)

Information confidential

Other talks and Workshops given (National and International)

- 2008 – 2010 Half day workshop for 25 (pre-A level) children from Walthamstow Hall School on "Nano and photoactive smart materials". Activities on the day included practical experiments and measurements of dye concentration using UV/Vis spectrometer and photocatalytic dye tests on coated glass slides. The Children also saw a demonstration of RAMSI the synthesis robot and other liquid handling apparatus ion action (Crosby Medley, K. Thompson, Suela Kellici and Tian Lin supported the day's events) July 2008 – 2010.
- 2008 Ran a series of lectures and training seminars during a three-day grant writing and networking workshop to younger academics in Pakistan in the IRC in Biomedical Materials, COMSATS University, Lahore Campus, Ravind Road, Lahore, Pakistan. Subjects covered included how to become a more effective networker, how to interface with industry, a mock grant panel for Pakistani academics and grant writing. 15–17th December 2008
- 2009 Lecture to School teachers entitled 'Green Chemistry, nanotechnology and a sustainable future' at the UCL / LCTC (London Chemistry Teachers' Centre) on Saturday 7th March 2009.
- 2010 One Day Workshop on "effective networking and how to interface with industry, held at the 2nd PSoBTE Meeting on Biomedical Materials, King Edward Medical College Lahore, Pakistan, July, 2010

8. Academic Supervision:

Last updated: July 2011

See webpages www.ucl.me.uk for current list

9. Research activity:

1992–1995 Ph.D. Research:

Research involved the synthesis of Group 2, Eu and Yb siloxy-, disiloxydiolates and alkoxides. Air sensitive syntheses using Group 2 and Lanthanide metals dissolved in liquid ammonia / organic solvent mixtures or metal alkoxides and insertion reactions were carried.

1995 to '96 (Feb) Postdoctoral Research

Research was concerned with inorganic Synthesis of new lanthanide oxide precursors for solid oxide fuel cell (SOFC) electrolyte films by Metal–Organic Chemical Vapour Deposition (MOCVD).

1996 (Feb) –1999 (Oct) Postdoctoral Research

Research was split into two areas; (i) inorganic Synthetic Chemistry; synthesis & design of $sc\text{-CO}_2$ soluble metal–organic complexes for fabrication of nanoparticle metal oxide/polymer composites, including tetraphenyldithioimido–diphosphinate chelate complexes that contain a [M–S–P–N–P–S] ring and (ii) Supercritical water nanomaterials; design, assembly and operation of a high–pressure and temperature prototype supercritical water continuous flow reactor for the synthesis of nanoparticle ceramics in Zr, Ln oxide solid solutions, transition metal catalysts and superconductors. During this time, I co-wrote an invited Chemical Review Article (1999) which has over 350 citations alone.

1999–2001 (Oct.) Experimental Officer (EO) Research

During this period of my career, I developed biological–like carbonated apatites (UK patent no. 0010411.7) and clean biomedical polyurethanes, using supercritical CO_2 . I also co–supervised 3 PhD students working on chemically grafted biomedical composites and drug precipitation in a supercritical anti–solvent reactor system (collaboration with London School of Pharmacy). The feasibility work carried out here allowed me to apply for Fellowships in Biomedical Materials.

2001–2007 (May) Research Carried Out at Queen Mary London

During my EPSRC Advanced Research Fellowship, entitled “Next Generation Biomedical Materials from Supercritical Fluids”, I was able to conduct multidisciplinary research;

2007 - UCL Chemistry (see www.ucl.me.uk)

10. Teaching activity

Lecture courses (written and presented once during each academic year):

1998 – 1999	PG lecture course (6 lectures) on thin film deposition methods (MOCVD, etc.) sol–gel, supercritical fluids deposition / spray methods, University of Nottingham
2001– 2003	PG Training and lectures on the use of X–ray Powder diffraction, FTIR, Raman, BET surface area analysis, Department of Materials, QMUL
2001 – 2003	Lectures MAT300 (30 lectures); Thermodynamics and Energy Concepts II QMUL
2001 – 2006	COSHH and safety lectures in the IRC and Materials Dept
2002 – 2006	MTRM001 Green Chemistry PG lecture course (10 lectures), Department of Materials, QMUL
2004 – 2006	MAT100 (15 lectures); introduction to materials, Department of Materials, QMUL
2004 – 2006	Materials for Engineers Course (20 lectures), City University, London
2007 – 2008	CHEM1101 “Basic Inorganic Chemistry” (6 lectures)
2008 –	CHEM3141/CHEMM101 : Rings, Chains and Clusters (11 lectures)
2009 –	CHEM3101 Advanced Topics in Inorganic Chemistry (8 lectures)
2011 –	Masters course ; Advanced Topics in Energy Science and Materials (7 lectures)

Other teaching responsibilities:

- Undergraduate Tutor; Inorganic chemistry for 1st year UG, Imperial College (1995 – 1996).
- Undergraduate Tutor; Inorganic chemistry for 1st year UG, Univ. of Nottingham (1996 – 1997).
- Safety Advisor, IRC in Biomedical Materials and Dept of Materials, QMUL (1990 – 2003)
- Training on analytical methods for PG students to meet requirements of a ISO (9001), and UKAS accredited Quality System, Department of Materials, QMUL (2001 – 2006).
- Assisting running the 'Alternatives to medicine day' for UG recruitment (2001 – 2004).
- Assisting running the 'SUMMER SCHOOL' for UG recruitment (2002 - 2004).
- Problem based learning tutor and coordinator for selected exercises (2002 – 2006).
- Personal tutor to ~10 undergraduate students (2007 –).
- Tutor to students on **CHEM2102** course (2008 –).
- Demonstrator on **CHEM1101** laboratory course (2008 –).
- Supervision of 4th year project students (2008 –).
- Supervision of 3rd year literature project students (2008 –).
- Tutor for on **CHEM1004** workshops (2008 -).
- Course organiser for core 1st year course **CHEM1101** "*Basic Inorganic Chemistry*" (2009 –).
- Laboratory course organiser for **CHEM1101** "*Basic Inorganic Chemistry*" (2009 –).

11. Knowledge Transfer / Exchange activity:

Knowledge Transfer has been an important part of academic career and I have been involved from the very start via interactions between industries and several technology transfer network organisations and with my technology transfer officers in the universities I have worked with. My research has generated three patents in total, with the two most patents on a water splitting device metal underlayer to enhance activity and another on a new jet-mixer which allows controlled synthesis of nanoceramics in a continuous hydrothermal reactor (current EPSRC projects).

Interactions with Other Knowledge Transfer Networks

I have attended numerous meetings hosted by the former Crystal Faraday (green chemistry) and INSIGHT Faraday (high throughput sciences). More recently, I have interacted with a number of KTNs (Knowledge Transfer Networks). Highlights include;

- Invited by INSIGHT to present the UK's research capabilities in high throughput materials science in NIST in Washington USA in 2006.
- Invited to attend / present during the Nano-KTN nanomission to Europe).
- Invited to present at several technology meetings hosted by Nanocentral (TSB supported organisation which is assisting in the safe commercial use of nanomaterials) including Nanomaterials 2010.

Knowledge Transfer Activities within the RSC and SCI Colloid & Surface Science Group

As main and co- organiser of Nanoparticles 2008 and 2009 international conferences, respectively, I ensured that the meetings included specific poster sessions dedicated to technology exchange. This included brokering of 1:1 sessions and meetings during the conferences and compiling a comprehensive technology exchange booklet which listed the industrial and academic organisations attending and their technology needs and requirements. I also obtained industrial sponsorship from several UK/ EU companies, some of whom I have a strong collaboration including Malvern Instruments who presented a technical lecture and had an exhibition stand.

University Technology Transfer Activities and Interactions with Consultants.

I have had a strong link with UCL business staff, particularly Tim Fishlock who have supported setting up of contracts, NDAs, MTAs and also invited me to present to potential investors at an 'investor breakfast' event they organized.

Industry Facing Technology Transfer Activities

A large amount of direct income has been obtained from the EPSRC (engineering and physical sciences research Council), which is the main funding agency for research in the areas being investigated. More recently, matching industry funds were obtained for a funded Technology Strategy Board project in which industries are required to put in significant resources. Much of the links with

industries have been through giving lectures in the companies themselves or by presenting at Technology events.

12. Enabling activity (*academic staff*):

Enabling Activities within UCL and University of London

- I have been involved in organizing and supporting enabling activities for numerous schools students, undergraduates and postgraduates
 - Sat on numerous academic recruitment panels (2001 – 2005; QMUL)
 - Conduct UCAS interviews (2001 -)
 - Web–pages committee chairman (2001 – 2003; QMUL).
 - Assisting running the ‘Alternatives to medicine day’ for schools (2001 – 2004; QMUL)
 - Seminar Organiser, Department of Materials, QMUL (2002 – 2004).
 - Assisting running the ‘SUMMER SCHOOL’ for UG recruitment (2002 – 2004; QMUL)
 - Staff member on the staff-student liaison committee (2002 – 2004; QMUL)
 - Co-organiser of the Industrial Liaison Board and Materials Research open Day (2003; QMUL)
 - UCL resources committee member (2007 -)
 - Organiser of one day symposium at UCL with Johnson Matthey’s Steering group (2008)
 - Supported school teachers to develop teaching material in nano-science lectures and experiments for nanomaterials / photocatalysis teaching (2007 -).
 - Ran half day schools visits and experiments with Walthamstow Hall School called “Chemistry with Robots”, “Nanomaterials for Energy” (2007-)
 - I have advised UCL International office and helped publicise UCL courses within Pakistan.
 - Vice president of the Chemical and Physical Society helping to arrange a comprehensive programme of external speakers and assisting with events including sports day (2007).
 - Annual Lecture to School teachers on ‘Green Chemistry, nanotechnology and a sustainable future’ at UCL chemistry (2008 -)

Enabling activities carried externally to UCL

- **RSC Secretary of the Colloid & Surface Science Group**
Organised postgraduate and senior academic lectures in conferences (Nanoparticles 2008 and 2009) I ran as a result of my role as secretary of the SCI and RSC Colloid & Surface Science Group committee (attended by over 120 people each from industry and academia including several UCL junior researchers who were invited to present). Activities have included supporting;
- **Overseas enabling activities**
Since 2005, I have regularly visited and interacted with top Pakistani universities. More recently, am collaborating with a UK colleague (Dr Rehman of QMUL) who set up an IRC in biomedical materials in Lahore, Pakistan. The IRC’s mission is to develop low cost affordable biomedical materials and medical coatings using indigenous resources for the mass market in Pakistan. I have been directing the focus of the research including drawing up a comprehensive 5 year plan which includes development scale-up research and interactions with clinicians. I am helping oversee the research in biomaterials and also helping junior academics across Pakistan to get skills and training on how to link with industry and to network better in their research.

PhD Examiner and Peer Review

- Internal and External examiner on PhD theses (including University of Liverpool, Queen Mary University, Kings College, Reading University, University of Cardiff) (2001 -)
- Peer reviewer for national and international journals (e.g. *Chemistry of Materials, J. Photochem. Photobiol. J. Mater. Chem., J. Combinatorial Chemistry, Advanced Materials, Chem. Commun., Dalton Trans.*) (1999 -)
- Peer reviewer for EPSRC grant and fellowship applications as well as panel member (2001 -)

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13. Publications

See website www.ucl.me.uk