University of Birmingham

Professor Richard A. Williams OBE, FREng, FTSE, BSc (Eng), PhD London, CEng, ARSM, DIC, FIMMM, FIChemE, FMES, CSci

Pro-Vice Chancellor and Head of the College of Engineering and Physical Sciences

Engineering and Physical Sciences

Contact details

Telephone +44 (0)121 414 9030 (tel:+44 121 414 9030)

Email l.hunter@bham.ac.uk (mailto:l.hunter@bham.ac.uk)

About

Professor Richard A Williams is Pro-Vice Chancellor and Head of the College of Engineering and Physical Sciences. The College consists of nine Schools: Civil Engineering; Chemistry; Chemical Engineering; Computer Science; Electrical and Electronics Engineering; Materials Engineering and Metallurgy; Mechanical Engineering; Physics and Astronomy and Mathematics.

Qualifications

Fellow of Royal Academy of Engineering (2000)

Fellow of Australian Academy of Technological Sciences and Engineering (2008)

Honorary Professor of Chinese Academy of Sciences (2011-)

Visiting Professor of Material Science, University of New South Wales, Sydney (2006-)

Visiting Professor in Energy Engineering, University of Leeds (2011-)

Fellow of Institution of Chemical Engineering (1995)

Fellow of the Institution of Mining and Metallurgy (1994)

Chartered Engineer, CEng (1988)

PhD, DIC in 'Photoelectrochemistry of ferrosilicon suspensions', Imperial College London (1988)

BSc (Eng) Hons., ARSM in Mineral Technology, Imperial College London (1981)

Biography

Professor Richard A Williams is an engineer and innovator who has brought several new concepts, processes and methodologies into practice in the chemical, materials, energy and instrumentation sectors. The work is reported in over 400 scientific journal papers and several patents. He has a strong interest in the effective translation of scientific and engineering knowledge to society through commercial and not-for-profit routes. He has worked extensively in developing relationships with academic and industrial partners in Europe, Middle East, Asia and Africa. He has interests in public engagement projects across the arts-science-engineering domains.

He studied at Imperial College London graduating in BSc (Eng) Mineral Technology (1983) and PhD (1995). He worked as a trainee metallurgist for **Anglo American Corporation** (http://en.wikipedia.org/wiki/Anglo_American_Corporation) (1979-80) and **De Beers Industrial Diamonds Research Laboratory** (http://en.wikipedia.org/w/index.php?title=De_Beers_Industrial_Diamonds_Research_Laboratory&action=edit&redlink=1) (1982–1986). He was appointed lecturer in Chemical Engineering at **University of Manchester Institute of Science and Technology** (http://en.wikipedia.org/wiki/University_of_Manchester_Institute_of_Science_and_Technology) (now University of Manchester) in 1986. He specialised in the area of surface and colloid engineering. In 1993 he was appointed Royal Academy of Engineering-Rio Tinto Professor of Minerals Engineering at the **University of Exeter** (http://en.wikipedia.org/wiki/University_of_Exeter) (based at the **Camborne School of Mines** (http://en.wikipedia.org/wiki/Camborne_School_of_Mines)). Aged 33 he was one of the youngest engineering professors in the UK. In 1999 he was appointed as Anglo American plc professor of mineral and process engineering at the **University of Leeds** (http://en.wikipedia.org/wiki/University_of_Leeds) where he was responsible for developing a new Institute of Particle Science and Engineering, a core development in re-development of chemical engineering at the University within a newly formed School of Process, Materials and **Environmental Engineering** (http://en.wikipedia.org/wiki/Environmental_Engineering). He was Head of the Department of Mining (2001–2003). He was director of **British Nuclear Fuels Limited** (http://en.wikipedia.org/wiki/British_Nuclear_Fuels_Limited) (BNFL) Research Alliance at University, responsible for development of new activities in nuclear energy waste processing (2000–2006). He was founding director of Centre for Industrial Collaboration in Particle Science and Technology (2003–2006) and **Leeds Nanomanufacturing Institute** (http://en.wikipedia.org/w/index.php?title=Leeds_Nanomanufacturing_Institute&action=edit&redlink=1) (2004–2010). He was appointed Pro-Vice Chancellor (2005-2010) at University of Leeds, responsible for leadership of enterprise, knowledge transfer and international strategy (2005-2010) and latterly for international partnerships (2010-2011) strategy. He was on the academic board of the World Universities Network (WUN) (2009-2011). He was appointed as Pro-Vice-Chancellor at University of Birmingham in September 2011, with responsibility for Engineering and Physical Sciences.

He is on the editorial boards of: The IChemE Transactions (UK); Advanced Powder Technology (Japan); Minerals Engineering (UK); Particuology (China); Recent Patents on Chemical Engineering (USA); and Nuclear Energy Science and Technology (USA).

He has held appointments on regional CBI Council (Yorkshire, 2008-2010) and corporate directorships of: Alta Birmingham China Ltd (2012-); NetScientific Solutions (2012-); Alta Innovations Ltd (2011-); Resilience (2011-); Leeds, York and North Yorkshire Chamber of Commerce (2008–2011); Leeds Ventures Shanghai (2008–2010); Engineering Conferences International -a US Engineering Charity (2007-2011); Medilink, Yorkshire and the Humber (2007–2010); Dispersia Limited (2006-2011); University of Leeds IP Limited (2006–2010); University of Leeds Consulting Limited (2006–2010); White Rose Technology Limited (2006–2010); University of Leeds Innovations Limited (2006–2010); University of Leeds Innovations Centre Limited (2006–2010); Structure Vision Limited (2003-); Industrial Tomography Systems Ltd (2001-); Disperse

Group Plc, (1999–2007); Optomo Ltd (1997-2009), Disperse Technologies (1995–2001); Exeter Enterprises Limited (1994–1999).

He was Vice President of the **Royal Academy of Engineering (http://en.wikipedia.org/wiki/Royal_Academy_of_Engineering)** (2005–2008). He is on the scientific advisory boards of NetScientific (2011-); PSB Academy (2012-); King Adbullah Institute for Nanotechnology (2008-). He currently co-chairs: Royal Academy of Engineering-Chinese Academy of Engineering Panel on 'Energy Storage Technologies – Status and Critical Needs' (2010-2012); European Academies of Engineering and National Academy of Engineering (US) 'Frontiers Conference Series' (2010-2012).

He has received some awards for scientific publications and innovations including: The Society of Chemical Industry Research and Development for Society Award (2009); Thomas Edison Innovation Award (2007); Royal Academy of Engineering Silver Medal (2003); Noel E. Webster Medal (2001); Isambard Kingdom Brunel Lectureship and Prize (1998); The Beilby Gold Medal and Prize (1997); Institution of Electrical Engineering Ambrose Fleming Medal and Premium (1993); The ESSO Centenary Award (1988). He was awarded **OBE (http://en.wikipedia.org/wiki/OBE)** in the Queen's **New Year Honours 2009 (http://en.wikipedia.org/wiki/New_Year_Honours_2009)** for services to science and engineering.

Research

He has current research interests in energy storage technology and policy, radical innovation technologies, mineral resources engineering, nuclear waste management and particle science and engineering.

Publications

Selected publications and patents are listed below.

- Process Tomography - Principles, Techniques and Applications, R.A. Williams and M.S. Beck (Eds.), Butterworth-Heinemann (Oxford), 1995, pp. 550, **ISBN 0-7506-0743-2 (http://en.wikipedia.org/wiki/Special:BookSources/0750607432)** .
- Particle Aggregation and Deposition Processes: Measurement, Modelling and Simulation R.A. Williams, J. Gregory, M. Elimelech and X Jia, Butterworth-Heinemann (Oxford) 1995, pp. 441, **ISBN 0-7506-0743-2 (http://en.wikipedia.org/wiki/Special:BookSources/0750607432)** .
- Colloid and Surface Engineering: Applications in the Process Industries R.A. Williams (Ed.), Butterworth-Heinemann, Oxford, 1992, pp. 345, **ISBN 0-7506-0377-1 (http://en.wikipedia.org/wiki/Special:BookSources/0750603771)** (2nd edn. published in paperback February 1994, **ISBN 0-7506-1940-6 (http://en.wikipedia.org/wiki/Special:BookSources/0750619406)**).
- Electrical Impedance Tomography, M. Wang, F. Dickin and R.A. Williams, WO 95/24155.
- Object Interaction Simulation, X. Jia and R.A. Williams, WO02/029206 A3.
- Microcapsules and Methods, S.R. Biggs, R.A. Williams, O. Cayre and Q. Yuan, WO2009/037482 A2.
- Electrochemical behaviour of ferrosilicides (FexSi) in neutral and alkaline aqueous electrolytes, I: Thermodynamics of the Fe-Si-H2O system at 298K, G.H. Kelsall and R.A. Williams, Journal of Electrochemical Society, 138, 4 (1991), pp. 931–940, ISSN: 0013-4651.
- The origin of the fish-hook effect in hydrocyclone separators, E.J. Roldan-Villasana, R.A. Williams and T. Dyakowski, Powder Technology, 77 (1993), pp. 243–250, ISSN: 0032-5910.
- Electrical resistance tomography of metal walled vessels and pipelines, M. Wang, F.J. Dickin and R.A. Williams, Electronics Letters, 10, 10 (1994), pp. 771–773, ISSN: 0013-5194.
- Prediction of air-core size and shape in a hydrocyclone T. Dyakowski and R.A. Williams, International Journal of Mineral Processing, 43 (1995), pp. 1–14, ISSN: 0301-7516 begin_of_the_skype_highlighting 0301-7516 end_of_the_skype_highlighting.
- Controlled production of emulsions using a crossflow membrane, S.J. Peng and R.A. Williams, Particle and Particle Systems Characterization, 15, (1998), pp. 21–25, ISSN: 0934-0866 begin_of_the_skype_highlightin0934end_of_the_skype_highlighting.
- Industrial monitoring of hydrocyclone operation using electrical resistance tomography, R.A. Williams, X. Jia, R.M. West, M. Wang, J.C. Cullivan, J. Bond, I. Faulks, T. Dyakowski, S.J. Wang, N. Climpson, J.A. Kostuch and D. Payton, Minerals Engineering, 12, 10 (1999), pp. 1245–1252, ISSN: 0892-6875 begin_of_the_skype_highlighting0892end_of_the_skype_highlighting.
- A new method for prediction of bulk particle packing behaviour for arbitrary shaped particles in containers of any shape, R.A. Williams and X. Jia, Particulate Science and Technology, 21, 2, (2003), pp. 195–205, ISSN: 0272-6351 begin_of_the_skype_highlighting0272end_of_the_skype_highlighting.
- Recent developments in manufacturing emulsions and particulate products using membranes, G.T.Vladisavljevic and R.A. Williams, Advances in Colloid and Interface Science, 113/1, (2005), pp. 1–20, ISSN: 0001-8686.
- Heat transfer of aqueous suspensions of carbon nanotubes (CNT nanofluids), Y. Ding, H. Alias, D. Wen and R.A. Williams, International Journal of Heat and Mass Transfer, 49, 1-2, (2005), pp. 240–250, ISSN: 00179310.
- Manufacture of large uniform droplets using rotating membrane emulsification, G.T.Vladisavljevic and R.A.Williams, Journal of Colloid and Interface Science, 299, 1, (2006), pp. 396–402, ISSN 0927-7757 begin_of_the_skype_highlightingend_of_the_skype_highlighting.
- Property predictions for packed columns using Monte Carlo and discrete element digital packing algorithms, C. Xu, X. Jia, R.A. Williams, E.H. Stitt, M. Nijemeisland, S. El-Bachir, A.J. Sederman and L.F. Gladden, Computer Modelling in Engineering & Sciences, 23, (2), 117-125 (2008), ISSN:1526-1492 (print), ISSN: 1526-1506 (on-line).
- Future of Energy Storage: Technologies and Policy, Royal Academy of Engineering, London, ISBN 1-903496-91-8.