

CURRICULUM VITAE

Prof Karen Wilson B.A. (Hons), M.Sc., Ph.D. (Cantab), FRSC, AFICHEM
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1. PRESENT AND PREVIOUS APPOINTMENTS:**a. Current position:**

RMIT University, School of Science, Melbourne, (2018-present)
Professor of Catalysis

b. Previous appointments:

Aston University, European Bioenergy Research Institute, (2013-2018)
Chair in Catalysis & EBRI Director of Research
Royal Society Industry Fellow (2011-2015)

Cardiff University, School of Chemistry, (2009-2013)
Cardiff Catalysis Institute (Reader in Physical Chemistry)

University of York, Department of Chemistry (1999-2009)
Senior Lecturer (Inorganic Chemistry)
Promoted Oct 2007: Lecturer B → Senior Lecturer
Promoted Oct 2002: Lecturer A → Lecturer B

University of York, Department of Chemistry (1998-99)
EPSRC Funded Postdoctoral Research Associate

University of Cambridge, Department of Chemistry (1996-98)
EPSRC Funded Postdoctoral Research Associate

2. QUALIFICATIONS:

University of Cambridge, Department of Chemistry (1993-96)
Ph.D. in Surface Science and Heterogeneous Catalysis
Thesis entitled: '*Poison and promoter effects in Pt catalysed hydrocarbon oxidation reactions*'
Supervisor: Prof. Richard M. Lambert

University of Liverpool, Leverhulme Centre for Catalysis (1992-93)
M.Sc. Surface Science & Heterogeneous Catalysis (*Distinction*)
Thesis entitled: '*Pd modification of Ag/Al₂O₃ catalyst systems*'
Supervisor: Prof. Michael Bowker

University of Cambridge, King's College (1989-92)
B.A. (Hons) Natural Sciences

3. PROFESSIONAL MEMBERSHIP/ESTEEM:

- Steering group member of EU H2020-MSCA-COFUND programme 'Got Energy Talent'
- Member of Royal Australian Chemical Institute (2018 - present)
- Associate Fellow of the IChemE (2017 – present)
- Plenary or keynote speaker at fifteen international conferences since 2012.
- Invited expert panel member to serve on the Academy of Finland – Catalysis Review Panel (2017)
- Chair of EPSRC Programme Grant Allocation Panel (2016)
- Editorial Board Member ACS Catalysis (2016 – present)
- Royal Society University Research Fellowship Proposal Reviewer and Interview Panel member (2015 - present)
- Contributor and cluster member for the European Roadmap on Catalysis (2015- present)
- Expert Panel Member and Proposal Reviewer ENERGIX-programme - Research Council of Norway (2015)

- National University of Singapore, Academic Visitor, Department of Chemical and Biomolecular Engineering (Singapore, 2015).
- Visiting Professor Université Lille 1, Science et Technologies, Unité de Catalyse et de Chimie du Solide (France, 2015).
- **Director of Global Bioenergy, Biofuels and Biorefining Network: GB3-Net** (2014- present).
- RSC Chemistry World panel member alongside leading academics including Prof Dan Nocera to debate '*What does the world's energy mix look like in 2050?*' – (Brazil, 2015).
- International advisor on Solid Waste Management and the Green Economy to the German National Academy of Sciences – Leopoldina (Halle, 2015).
- Invited speaker at Industry and Parliament Trust, Parliamentary Programme on the diversification of energy sources and energy mix (Portcullis House, Westminster, 2015).
- **Royal Society Industry Fellowship** (2011-2015).
- International Conferences Scientific Advisory Board Membership - Faraday Discussion on Bio-resources: Feeding a Sustainable Chemical Industry (York 2017); 1st French Congress on Catalysis (2016); CatBior (Dalian 2013; Rio de Janeiro 2015); RRB 11 and 12 (York 2015, Ghent 2016).
- Chair EPSRC Chemistry Peer Review Panel (July 2015)
- External examiner, MChem, Queens University of Belfast (2015- present)
- External examiner, MSc in Biofuel Process Engineering, Cranfield University (2012-15)
- UK representative on sustainability at CS3 meeting on Sustainable Materials, organised by RSC, ACS, DFG, CCS and CSJ international chemical societies, (London, 2010).
- International advisor on Biofuels and Bioconversion to the German National Academy of Sciences (Greifswald, 2010).
- Grant review panel member and referee for Netherlands Organisation for Scientific Research (NWO) (2009-present)
- UK representative on green chemistry at RSC/CSJ conference (Osaka/Belfast, 2007/8)
- Fellow (2009-present) and member (1998-2009) of the Royal Society of Chemistry
- Member of Pan Africa Chemistry Network (2008-present)
- Referee for Hong Kong research council (2008-present)
- EPSRC interview panel member for Leadership & Career Acceleration Fellowships (2008)
- Member of the American Institute of Chemical Engineers (2008-present)
- EPSRC Chemistry Prioritisation Panel Member (2005-present)
- Referee for US National Science Foundation and Department of Energy (2004-present)
- **Research of the future award**, 221st ACS National Meeting (San Diego, 2001).
- Member of EPSRC College (2002-present)
- Referee for RSC, Elsevier, ACS and Wiley publishers (1999-present)
- Member of the Society for the Chemical Industry (1998-2005)
- Member of the American Chemical Society (1998-present)

4. RESEARCH INCOME:

a. Research Organisations:

EPSRC 'The UK Catalysis Hub - 'Science': 2 Catalysis at the Water-Energy Nexus' EP/R026645/1 (Technical lead on WP5 - Energy and fuels from waste water)	(2018-23)	£4,010,674
Royal Society Newton International Exchange Scheme 'In-situ cascade upgrading of biomass pyrolysis vapours for chemicals production' in collaboration with South China Agricultural University.	(2017-19)	£12,000
BBSRC GCRF Foundation Awards for Global Agriculture and Food Systems 'Cascade processes for integrated bio-refining of agricultural waste in India and Vietnam' CAPRI-BIO BB/P022685/1. (Aston Co-I - £250,000 to KW)	(2017-19)	£ 749,885
Royal Society Newton International Exchange Scheme 'Catalytic Hydrodeoxygenation of Non-edible Vegetable Oil to Green Diesel' with Prof Taufiq Yap, Universiti Putra Malaysia.	(2016-18)	£12,000

Royal Society Newton Fellowship 'Metal grafted mesoporous materials for the catalytic conversion of biomass into fuels and chemicals' with Dr Anupam Singha Roy.	(2016-18)	£66,000
Royal Society Newton Advanced Fellowship 'Nanoengineering catalysts for biorefining of Malaysian empty palm fruit bunch waste' with Dr Darfizzi Derawi, The National University of Malaysia.	(2016-18)	£74,000
British Council Newton Institutional Links 'Sustainable green fuel and hydrocarbon production from non-food and waste Vietnamese Oil Seed Crops' with Hanoi University of Science & Technology	(2016-18)	£150,000
British Council Global Innovation Initiative 'Global Bioenergy, Biofuels and Biorefining Network: GB3-Net' (PI) in partnership with Dalian Institute of Chemical Physics, University of Wisconsin – Madison, University of Massachusetts Amherst, University of Kentucky and The Federal University of Rio de Janeiro.	(2015-17)	£150,000
BBSRC Food Waste NIBB Proof of concept – 'Valorisation of Bakery Waste' (PI)	(2015-16)	£ 60,000
INNOVATEUK – IB Catalyst Proof of Concept 'Driving down the cost of waste derived sugar' (Aston PI - £19,777 to KW)	(2015-16)	£ 999,707
EU-FP7 'Cascade Deoxygenation Process Using Tailored Nanocatalysts For The Production Of Biofuels From Lignocellulosic Biomass'	(2013-18)	7,089,018 €
CASCATBEL (Aston PI - 726,323€)		
EPSRC 'Development of fast pyrolysis based advanced biofuel technologies for biofuels' EP/K036548/1 (Aston PI - £ 442,347 to KW)	(2013-17)	£ 1,474,807
EPSRC 'Ionic Liquid Biorefining of Lignocellulose to Sustainable Polymers' EP/K014676/1 (Aston PI - £ 390,384 to KW)	(2013-18)	£ 3,158,256
EPSRC 'Catalytic Routes to Intermediates for Sustainable Processes' EP/K014749/1 (Aston PI - £ 933,547 to KW)	(2013-18)	£ 2,999,021
EPSRC 'The UK Catalysis Hub - Bioenergy theme' EP/K014706/1 (Bio-fuels sub theme leader - (Aston PI - £ 250,000 to KW)	(2013-18)	£ 3,872,710
Royal Society Leverhulme Africa Project – 'Sustainable Biodiesel Production from Ghanaian and Tanzanian Plant Oil Seed Crops' (PI)	(2013-18)	£ 180,000
EU-FP7 'Photo-catalytic materials for the destruction of recalcitrant organic industrial waste' (PCATDES) (Joint-coordinator - £ 396,192 to KW)	(2013-17)	3,929,96€
EPSRC 'Tuning Catalyst Surfaces to Control Aldol Reactions in Biomass Conversion' (EP/K000616/1) (PI)	(2012-15)	£ 455,983
BBSRC 'UK - Vietnam Workshop on Biofuels', BB/J019828/1 (CI)	(2012)	£ 7,200
BBSRC 'Developing a cereal straw biorefinery using rice as a model and a feedstock' BB/JO13838/1 (2011-12) (CI)	(2012-13)	£ 50,000
Royal Society Industry Fellowship 'Nanoengineering heterogeneous catalysts for biofuel synthesis' (PI)	(2011-15)	£ 130,048
BBSRC 'Targeted Priority Studentships in Biology' BB/G016801 (CI)	(2008-13)	£ 446,460
EPSRC 'Designer Catalysts for High Efficiency Biodiesel Production' EP/F063423/1 (PI)	(2009-12)	£ 460,289
AHRC/EPSRC Science Heritage Studentship 'Weathering and decay in Historic Limestone' (PI)	(2008-11)	£ 30,000
EPSRC 'Operando Studies of Palladium-Catalysed Cross-Coupling Surface Chemistry' EP/E046754/1 (CI)	(2007-09)	£ 80,485
EPSRC 'Nanoparticle-doped Mesoporous Silicates / Synthetic Developments and their Applications in Catalysis' EP/F009488/1(CI)	(2007-11)	£ 325,191
The Leverhulme Trust 'Combinatorial Solid State Materials Synthesis & High-Throughput Catalyst Screening' (CI)	(2006-07)	£ 34,723
ACS Petroleum Research Fund: 'Fast XPS of Pd-Catalysed Cross-Coupling Surface Reactions' (CI)	(2006-07)	£ 42,992
EPSRC 'Adventurous Chemistry at York' EP/D051126/1 (CI)	(2006-08)	£ 103,571

EPSRC Chemical Engineering Discipline Hop Award 'Optimising Molecular architectures for heterogeneous catalysis in nanoporous solids' EP/E013090/1 (PI)	(2006-08)	£ 92,546
Royal Society Overseas Fellowship 'Biodiesel Catalysts' (PI)	(2005-06)	£ 18,200
Royal Society Equipment Grant 'Antimicrobial Surfaces' (PI)	(2005-06)	£ 14,940
EPSRC 'Green Chemistry Research Network' GR/R10523/01 (CI)	(2001-03)	£ 59,000
EPSRC 'Supported thin films as models for sulphated metal oxide catalysts' GR/R39436/01 (PI)	(2001-04)	£ 59,944
Royal Society Equipment Grant 'High throughput catalyst screening' (PI)	(2000-01)	£ 9,998
EPSRC 'Mesoporous Inorganic Solids Research Network' GR/N64090/01 (CI)	(2000-02)	£ 59,000

b. Industry:

Syngenta 'Deactivation of Pt/C hydrogenation catalysts' (PI)	(2016-17)	£ 15,000
BP 'Mechanistic Studies of Catalyst Deactivation' (CI)	(2012-13)	£ 170,000
Chemoxy BBSRC Industrial CASE Award 'A tandem bio-chemo catalytic approach to the sustainable production of high performance coatings additives from glucose' (CI)	(2015-19)	£ 90,000
Johnson Matthey Industrial CASE Award 'In-situ studies of hydrodeoxygenation catalysts for biofuels synthesis' (PI)	(2011-14)	£ 65,000
KESS Studentship with NEXTEK 'Nanoengineering catalysts to manufacture renewable monomers for the sustainable production of biodegradable polymeric materials and coatings.' (PI)	(2011-14)	£ 65,000
KESS Studentship with Polymer Health 'Nanoengineered polymer architectures for antimicrobial medical applications - Foams' (CI)	(2011-14)	£ 65,000
KESS Studentship with Polymer Health 'Nanoengineered polymer architectures for antimicrobial medical applications 2 - Additives' (PI)	(2011-14)	£ 65,000
Syngenta PhD studentship 'Nanoengineering heterogeneous catalysts for the selective hydrogenation of key agrochemical derivatives' (PI)	(2012-15)	£ 65,000
Biosept Ltd 'Cellulose conversion to HMF - feasibility study' (PI)	(2010-11)	£ 41,000
Syngenta PhD studentship 'Structure reactivity relationships in Pd catalysed hydrogenation reactions' (PI)	(2008-11)	£ 30,000
Proof of Principle Award University of York Innovation Centre 'Development of Solid Biodiesel Catalysts' (PI)	(2007-08)	£ 24,950
BP Biofuels 'Designer solid bases for biodiesel synthesis' (PI)	(2007-10)	£ 21,000
BP Chemicals Industrial CASE Award 'Mechanistic studies of Carbonylation' (PI)	(2006-10)	£ 57,339
Smith & Nephew PhD studentship 'Antimicrobial devices' (CI)	(2005-08)	£ 30,000
BP Chemicals Industrial CASE Award 'Solid Acid Catalysts for Carbonylation' (PI)	(2003-06)	£ 41,500
Smith & Nephew 'Plasma modification of biomaterials' (PI)	(2002-05)	£ 34,000
Smith & Nephew 'XPS analysis of biomaterials' (PI)	(2001-03)	£ 40,000
EPSRC/BP-Amoco Case for New Academics 'Selective Alkane activation' (PI)	(2000-03)	£ 15,000
Miscellaneous Industrial Income (<10K): York Innovation & Priming Fund; MEL Chemicals; Syngenta; Smith & Nephew; BP; DAVY Process Technology, Dow Chemicals.		£ 50,000

c) Strategic Funds:

Technical Lead on successful 5-BIO Aston component of T-ERA for £ 1.5M capital funds to support research into biorefining within Aston University under the government funded Energy Research Accelerator (<http://www.aston.ac.uk/news/releases/2015/march-2015/5bio-project/>.)

d) Facilities Time:

35 days of beamtime awarded through competitive peer review at Daresbury, Elettra and Diamond synchrotrons (2004-present), EPSRC Access Schemes (2005-present): 20 days solid state NMR (Durham), 2 days MS (Swansea), 15 days high-resolution TEM (Leeds).

5. MAJOR UK COLLABORATORS

Prof Tina Düren – University of Bath (Chem Eng) – Monte Carlo Simulations of adsorption
 Prof Chris Bowen – University of Bath (Chem) (Mech Eng) – Semiconductor materials
 Prof Ivan Parkin – University College London (Chem)– Photocatalytic materials
 Prof Adam Harvey – University of Newcastle (Chem Eng) – Process Intensification/Biodiesel Synthesis
 Prof Matthew Rosseinski – University of Liverpool (Chem) - Commodity Chemicals from Biomass
 Prof Nilay Shah – Imperial College (Chem Eng) – Technoeconomic and process systems analysis
 Prof David Chadwick – Imperial College (Chem Eng) - Commodity Chemicals from Biomass
 Prof Tom Welton – Imperial College (Chem) – Biorefining using Ionic Liquids
 Dr Jason Hallett – Imperial College (Chem Eng) - Biorefining using Ionic Liquids
 Prof Keith Waldron – Institute of Food Research – Biomass fractionation via steam explosion
 Prof Phillip Davies – Cardiff University (Chem)– Surface Science and Photocatalysis
 Prof Graham Hutchings – Cardiff University (Chem)– Commodity Chemicals from Biomass
 Prof Alexei Lapkin – Cambridge University (Chem Eng) – Microscale reactors
 Prof Mark Simmons – University of Birmingham (Chem Eng) – Kinetic modelling of catalytic reactions
 Prof Joe Wood – University of Birmingham (Chem Eng) – Bio-oil based biorefineries
 Prof David Jackson – University of Glasgow (Chem) – Continuous hydrodeoxygenation of bio-oils
 Prof Sai Gu – Surrey University (Chem Eng) – Bio-oil upgrading
 Prof Chris Hardacre – University of Manchester (Chem Eng) – Ionic Liquids
 Prof James Clark – University of York (Chem) – Green Chemistry and Renewable Resources
 Dr Jason Lynam – University of York (Chem) – Hybrid polyoxometalate Catalysts
 Prof Ian Fairlamb – University of York (Chem)– Pd Nanoparticles in Catalysis
 Prof Duncan Bruce – University of York (Chem) – Liquid Crystal Templates
 Prof Magda Titirici – Queen Mary University of London (Materials Engineering) – Porous carbons

6. MAJOR INTERNATIONAL COLLABORATORS

Prof George Huber – University of Wisconsin – Madison, USA – Bio-fuels
 Prof Mark Crocker – University of Kentucky, USA – Chemicals from Lignin
 Prof Friederike Jentoft – University of Massachusetts Amherst, USA – Operando Catalysis
 Prof Chunshan Song – Penn State University, USA – Hydrogen Production via Steam Reforming
 Prof Claudio Mota – Federal University of Rio de Janeiro, Brazil – Biodiesel synthesis
 Prof Ngyuen Liem – Vietnamese Academy of Science & Tech., Hanoi, Vietnam - Photocatalysis
 Prof Hong Nguyen-Khanh – Hanoi University of Science & Tech., Vietnam – Biofuels from Waste Oils
 Prof Carol Lin – City University of Hong Kong – Platform Chemicals from Bakery Waste
 Prof Ferdi Schuth - Max-Planck-Institut für Kohlenforschung, Mullheim - Nanomaterials
 Prof David Serrano – IMDEA Energy Institute, Madrid – Hierarchical Zeolites and Bioenergy
 Prof Juan Melero – University of Rey Juan Carlos, Madrid – Sulfonic Acid Silicas and Biodiesel
 Prof Gadi Rothenberg – University of Amsterdam, Netherlands – Computational methods in Catalysis
 Prof Bert Weckhuysen – Utrecht University, Netherlands – Operando Spectroscopy
 Prof Taufiq Yap – Putra University, Malaysia -Bio-fuels via de-carboxylation
 Prof Angelos Lappas - CERTH/CPERI Thessaloniki, Greece – Biofuel characterisation
 Prof Egid Mubofu – University of Dar es Salaam, Tanzania – Biodiesel from Castor Oil
 Prof Ning Yan – National University of Singapore -Nanoparticle synthesis
 Prof Fabrizio Cavani – University of Bologna, Italy – Oxide nanoparticles as solid base/redox catalysts
 Prof Arvind Lali – Mumbai Institute of Chemical Technology, India – Rice Straw Valorisation
 Prof Conrad Zhang - Dalian Institute of Chemical Physics, China – Ionic Liquids for Biomass fractionation
 Prof Tao Zhang – Dalian Institute of Chemical Physics, China – Single Site Catalysis
 Prof Shogo Shimazu – Chiba University, Japan – Catalysts for Fine Chemical Synthesis

7. TEACHING EXPERIENCE:

I have an extensive teaching portfolio across all years at UG and PG level, including:

a. Undergraduate:

Lecture Courses: (*Aston*) Yr 3 & 4 Heterogeneous Catalysis to Chemical Engineers and Chemists; (*Cardiff*) Yr 1 Solid State Chemistry, Yr 3 Heterogeneous Catalysis, Yr 4 Green and Sustainable Chemistry; (*York*) Yr 1 Solid State Chemistry, Yr 2 Surface Chemistry, Heterogeneous Catalysis, Yr 3 Electronic properties of Solids, Electro-analysis and Sensors, Advanced Surface Science.

Tutorials and Workshops: *Yr 1:* Kinetics, Thermodynamics, Acid Bases & Hydrogen, Structure & Bonding, Electrochemistry, Solid State. *Yr 2:* Photoelectron Spectroscopy, Heterogeneous Catalysis, Metal-Ligand Bonding, Inorganic Mechanisms, Mass Spectrometry, Statistical Thermodynamics, Surface Chemistry, Vibrational Spectroscopy. *Yr 3:* Diffraction, Lasers, Colloids & Surfaces. *Yr 4:* Surface Dynamics, Analytical Chemistry.

Practical Classes: (*Cardiff*) Yr 1 Solid State Chemistry; (*York*) Synthesis, Integrated Chemistry, Yr 2 Physical Organic Chem, Physical Inorganic Chem.

Undergraduate examination duties: External examiner for Physical Chemistry, Queens University of Belfast (2015-).

b. Postgraduate:

Lecture Courses: (*Cardiff*) Porous Materials; (*York*) Catalysts for Green Chemistry Advanced Materials, Infra-red Spectroscopy.

External Lecture Courses: *Catalysis and Biorefining – University of Dar es Salaam, Tanzania;* Green Chemistry - Catalysis for Sustainable Processes – *University of Miyazaki, Japan;* Introduction to Heterogeneous Catalysis & Green Chemistry – *Socrates exchange scheme University of Reims Champagne-Ardenne;* Green Chemistry & Catalysis - *Managing Catalytic Technology Module - University of Liverpool.*

Postgraduate examination duties: Internal PhD Examiner for 19 students at York; External examiner for 10 PhD and 3 MSc theses in UK. PhD examiner at Durham University (2017), Imperial College (2016), University of Bath (2015), Universidad de Córdoba (2012), University of Amsterdam (2013) and University of Rey Juan Carlos (2013). External examiner for Cranfield University MSc in Biofuel Process Engineering (2012-2015).

PhD & MSc student supervision: Graduated 2 MSc/MPhil and 28 PhD students: (2017) Nazriza Tajuddin, (2016) S. Board (MPhil), (2015) L. Ardemani, L. Durndell, (2014) M. Isaacs, A. Osatiastiani, (2013) C.V. Ellis, J.J. Woodford, (2012) C.M.A. Parlett, (2011) J.M. Montero, J. Naughton, S. Wainwright, (2010) L.D. Dingwall, P. Ayris, J.P. Kirby, (2009) J.J. Buckley, P.J. Ellis, (2008) S.F.J. Hackett, (2007) A. D. Newman, E. Nextoux, (2006) L.M. Watkins, (2005) N.J. Hart, (2004) C.R. Quinn, D.A. Gawthrope, E. Burguin, PA Carr, (2003) O. Mordaque, H. Menard, (2002) B. Piquemal (MSc), (1999) J.E. Hardy.

c. Current research group:

PhD students: J.A. Hunns, B. Barbero, R. Trofimovaite, L. Frattini, M. Tapia Reche, A. Ahmed, C. Cucuzzella, T. Bryant.

PDRA: Dr C.M.A. Parlett, Dr A. Osatiashanti (Catalysis Group Experimental Officer), Dr M. Isaacs (X-ray Experimental Officer), Dr L. Durndell, Dr J. Manayil, Dr A. Shivare, Dr A. Singha Roy.

8. ADMINISTRATIVE RESPONSIBILITIES:

Aston University: *EBRI Research Director; EBRI Executive Team; EBRI Operational Management Group; Engineering Diversity working Group; Engineering International Engagement Group; Promotions Committee.*

Cardiff University: (*University*) Athena Swan steering group; (*Chemistry*) Deputy Chair Athena Swan Committee (*wrote successful School Bronze submission*); Member Staff Opportunities Committee; Member Research Committee; Module Coordinator Green Chemistry, Coordinator MSc Green Chemistry.

University of York: Department Finance committee member overseeing EPSRC Doctoral Training Account (2005-09); Year 2 Leader (2003-09); Undergraduate teaching committee member (2003-09); Year 2 Module Coordinator (2000-2009); Year 2 Examination committee member (2000-09); MRes Examiner (2002-05); MRes Assistant Course Director (2002-05); Physical Inorganic Practical Course Coordinator (2001-05).

9. PROF KAREN WILSON - PUBLICATIONS

h index (Google Scholar) = 57

<http://scholar.google.co.uk/citations?user=pt4w-Y4AAAAJ&hl=en>

<http://www.researcherid.com/rid/A-1061-2009>

A. Refereed Journal Articles:

- Ramirez-Barria, C.; Isaacs, M.A.; Wilson, K.; Guerrero-Ruiz, A.; Rodríguez-Ramos, I.; Optimization of ruthenium based catalysts for the aqueous phase hydrogenation of furfural to furfuryl alcohol, *Appl Cat A.*, **2018**, *in press*
- Durndell, L.J.; Cucuzzella, C.; Parlett, C.M.A.; Isaacs, M.A.; Wilson, K.; Lee, A.F.; Platinum catalysed aerobic selective oxidation of cinnamaldehyde to cinnamic acid, *Catalysis Today*, **2018**, *in press*
- Isaacs, M.A.; Barbero, B.; Durndell, L.J.; Hilton, A.C.; Olivi, L.; Parlett, C.M.A.; Wilson, K.; Lee, A.F.; Tunable Silver-Functionalized Porous Frameworks for Antibacterial Applications, *Antibiotics*, **2018**, *7*, 55.
- Pirez, C.; Morin, J-C.; Manayil, J.C.; Lee, A.F.; Wilson, K.; Sol-gel synthesis of SBA-15: Impact of HCl on surface chemistry, *Micro & Meso Mater.*, **2018**, *in press*
- Escalera-López, D.; Niu, Y.; Jin Park, S.; Isaacs, M.A.; Wilson, K.; Palmer, R.E.; Rees, N.V.; Hydrogen evolution enhancement of ultra-low loading, size-selected molybdenum sulfide nanoclusters by sulfur enrichment, *Appl. Cat. B.*, **2018**, *235*, 84-91.
- Gardy, J.; Osatiashtiani, A.; Céspedes, O.; Hassanpour, A.; Lai, X.; Lee, A.F.; Wilson, K.; Rehan, M.; A magnetically separable SO₄/Fe-Al-TiO₂ solid acid catalyst for biodiesel production from waste cooking oil, *Appl. Cat. B.*, **2018**, *234*, 268-278.
- Rabee, A.I.M., Manayil, J.C.; Isaacs, M.A.; Parlett, C.M.A.; Durndell, L.J.; Zaki, M.I.; Lee, A.F.; Wilson, K.; On the Impact of the Preparation Method on the Surface Basicity of Mg–Zr Mixed Oxide Catalysts for Tributyrin Transesterification, *Catalysts*, **2018**, *8*, 228
- Dierks, M.; Cao, Z.; Manayil, J.C.; Akilavasan, J.; Wilson, K.; Schüth, F.; Rinaldi, R.; Impact of Hydrophobic Organohybrid Silicas on the Stability of Ni₂P Catalyst Phase in the Hydrodeoxygenation of Biophenols, *ChemCatChem*, **2018**, *10*, 2219-2231.
- Trofimovaite, R.; Parlett, C.M.A.; Kumar, S.; Frattini, L.; Isaacs, M.A.; Wilson, K.; Olivi, L.; Coulson, B.; Debgupta, J.; Douthwaite, R.E.; Lee, A.F., Single atom Cu (I) promoted mesoporous titanias for photocatalytic Methyl Orange depollution and H₂ production, *Applied Catalysis B: Environmental*, **2018**, *232*, 501-511.
- Elimbinzi, E.; Nyandoro, S.S.; Mubofu, E.B.; Osatiashtiani, A.; Manayil, J.C.; Isaacs, M.A.; Lee, A.F.; Wilson, K.; Synthesis of Amine Functionalized Mesoporous Silicas Templated by Castor Oil for Transesterification, *MRS Advances*, **2018**, 1-9.
- Tai, Z.; Isaacs, M.A.; Durndell, L.J.; Parlett, C.M.A.; Lee, A.F.; Wilson, K., Magnetically-separable Fe₃O₄@ SiO₂@SO₄-ZrO₂ core-shell nanoparticle catalysts for propanoic acid esterification, *Molecular Catalysis*, **2018**, *449*, 137-141.
- Escalera-López, D.; Griffin, R.; Isaacs, M.; Wilson, K.; Palmer, R.E.; Rees N.V., MoS₂ and WS₂ nanocone arrays: Impact of surface topography on the hydrogen evolution electrocatalytic activity and mass transport, *Applied Materials Today*, **2018**, *11*, 70-81.
- Ponnuru, K.; Manayil, J.C.; Cho, H-J.; Fan, W.; Wilson, K.; Jentoft, F.C., Intraparticle Diffusional Effects vs. Site Effects on Reaction Pathways in Liquid-Phase Cross Aldol Reactions, *ChemPhysChem*, **2018**, *19*, 386-401.
- Alotaibi, M.; Manayil, J.C.; Greenway, G.M.; Haswell, S.J.; Kelly, S.M.; Lee, A.F.; Wilson, K.; Kyriakou, G., Lipase immobilised on silica monoliths as continuous-flow microreactors for triglyceride transesterification, *Reaction Chemistry & Engineering*, **2018**, *3*, 68-74.
- Kumar, S.; Durndell, L.J.; Manayil, J.C.; Isaacs, M.A.; Parlett, C.M.A.; Karthikeyan, S. Douthwaite, R.E.; Coulson, B.; Wilson, K.; Lee A.F., Delaminated CoAl-Layered Double Hydroxide@TiO₂ Heterojunction Nanocomposites for Photocatalytic Reduction of CO₂, *Particle & Particle Systems Characterization*, **2018**, *in press*.
- Ponnuru, K.; Manayil, J.C.; Cho, H-J.; Osatiashtiani, A.; Fan, W.; Wilson, K.; Jentoft, F.C., Tuning solid catalysts to control regioselectivity in cross aldol condensations with unsymmetrical ketones for biomass conversion, *Molecular Catalysis*, **2018**, *in press*.

17. Rabee, A.I.M.; Durndell, L.J.; Fouad, N.E.; Frattini, L.; Isaacs, M.A.; Lee, A.F.; Mekhemer, G.A.H.; dos Santos, V.C.; Wilson, K.; Zaki, M.I., Citrate-mediated sol-gel synthesis of Al-substituted sulfated zirconia catalysts for α -pinene isomerization, *Catalysis Today*, **2017**, *in press*.
18. Manayil J.C.; Osatiashtiani, A.; Mendoza, A.; Parlett, C.M.A.; Durndell, L.; Isaacs, M.; Michailof, C.; Heracleous, E.; Lappas, A.; Lee, A.F.; Wilson, K., Impact of macroporosity on catalytic upgrading of fast pyrolysis bio-oil by esterification over silica sulfonic acids, *ChemSusChem*, **2017**, *10*, 3506-3511.
19. Escalera-López, D.; Griffin, R.; Isaacs, M.; Wilson, K.; Palmer, R.E.; Rees N.V., Electrochemical sulfidation of WS₂ nanoarrays: Strong dependence of hydrogen evolution activity on transition metal sulfide surface composition, *Electrochemistry Communications* **2017**, *81*, 106-111.
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B. Book Chapters:

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10. *Structure-Reactivity Relationships in Mesoporous Solid Acid Catalysts*. K. Wilson, A. F. Lee, M. Ecomier, D.J. Macquarrie, J.H. Clark - *New Catalytic Materials For Clean Technology - Nanotechnology in Catalysis*; Eds., Kluwer Press: (2004), 293.

C. Books and Edited compilations:

1. *Handbook of Biofuels Production – Processes and Technologies (Second Edition)* R. Luque, C. Lin, K. Wilson and J.H. Clark (Eds). Woodhead Publishing (2016).

- Handbook of Heterogeneous Catalysis for Clean Technology – Heterogeneous Catalysts for Clean Technology - Spectroscopy, Design, and Monitoring. A.F. Lee, K. Wilson (Eds), Wiley-VCH (2013).
- Topics in Catalysis, special issue on "Heterogeneous Catalysis for Biodiesel Production". K. Wilson and A.F. Lee (Eds), Springer (2010), 53.

D. Scientific Reports/White Papers:

- Bioenergy – Chances and Limits*, A report by the Leopoldina, Nationale Akademie der Wissenschaften, (2012), ISBN: 978-3-8047-3081-6
http://www.leopoldina.org/uploads/tx_leopublication/201207_Stellungnahme_Bioenergie_LAY_en_final.pdf
- Municipal Solid Waste Management and Green Economy*, A report from the Global Young Academy in cooperation with the National Academy of Sciences Leopoldina (2016), ISBN 978-3-939818-65-6
- A Sustainable Global Society. How can materials chemistry help?* A white paper from the Chemical Sciences and Society Summit (CS3) 2010, (2011) ISBN: 978-3-8047-3081-6
http://www.rsc.org/images/sustainable-global-society-full-report_tcm18-200081.pdf

E. Selected Oral Conference Proceedings and Invited Lectures:

- Keynote lecturer - International Symposium on Relations between Homogeneous and Heterogeneous Catalysis (ISHHC-18), (Sydney, 2018)
- Keynote lecturer - Congress of the Société Chimique de France, SCF-18, (Montpellier, 2018)
- Keynote lecturer - 1st Cutting Edge Symposium on the Current and Future Challenges of Energy Efficient Separation (CFCEES 2018), (Palm Cove, 2018)
- Invited oral presentation – *Tuning pore hierarchy and acidity of heterogeneous catalysts for biomass conversion*, 255th American Chemical Society National Meeting, Session on Catalytic Conversion of Biomass Derived Molecules to Chemicals & Fuels, (New Orleans, 2018)
- Plenary lecturer - 4th UK Catalysis Conference (UKCC – 2018) (Loughborough, 2018)
- Plenary lecturer - 4th Anatolian School of Catalysis, Development of Catalysts for Green and Sustainable Technologies (Izmir, 2017)
- Keynote lecturer - 4th Symposium on Catalysis for Renewable Sources: fuel, energy, chemicals, CRS-4, (Gabicce Mare, 2017)
- Keynote lecturer - International Symposium on Green Chemistry, (La Rochelle, 2017)
- Keynote lecturer - 8th International Symposium on Acid-Base Catalysis (ABC-8), (Rio de Janeiro, 2017)
- Plenary lecturer - CCESC 2016 ‘Catalysts for Clean Energy and Sustainable Chemistry’, (Madrid, 2016)
- Invited Oral Presentation - *Hydrothermally stable, conformal sulfated zirconia monolayer catalysts for biorefinery applications*, 16th International Congress on Catalysis, (Beijing, 2016)
- Invited Oral Presentation - *Hydrothermally stable, conformal sulfated zirconia monolayer catalysts for sustainable chemical processes*, 18th International Zeolite Conference, (Rio de Janeiro, 2016)
- Plenary lecturer - ISACS 17: Challenges in Chemical Renewable Energy Symposium (Rio de Janeiro, 2015)
- Plenary lecturer - Royal Society Discussion Meeting ‘Catalysis Improving Society’ (Royal Society, London, 2015)
- Plenary lecturer - 1st International Conference on Sustainable Fuels (New Delhi, 2015)
- Keynote lecturer - 1st UK Catalysis Conference (Loughborough, 2015)
- Keynote lecturer - International Symposium on Energy Materials and Nanotechnology (ISEMN), (Wuhan, 2014)
- Plenary lecturer – 14th International Conference on Renewable Resources & Biorefineries, (Vallodolid, 2014)
- Invited Oral Presentation - *Designing solid acids and bases for biofuel synthesis*, 2nd International Congress on Catalysis for Biorefineries (CatBior), (Dalian, 2013).
- Plenary lecturer - RSC Symposium on Catalysis for Sustainability (Rio de Janeiro, 2012)

21. Plenary lecturer - 1st International Conference on Polymer Science and Technology (Ghana, 2012)
22. Invited Oral Presentation - *Tuning sulfated zirconia for the selective conversion of bioderived molecules*, K. Wilson, A. Osatiashtiani, A. Lee, J. A. Melero, G. Morales, 248th National Meeting of the American-Chemical-Society, (San Francisco, 2014).
23. Invited Oral Presentation - *Optimising the nanoporous architecture of solid acid and base catalysts for biodiesel synthesis*. K. Wilson, 245th National Meeting of the American-Chemical-Society, (New Orleans, 2013).
24. Invited Oral Presentation - *Designing heterogeneous catalysts for biodiesel synthesis*. Wilson K, Abstracts of Papers of the American Chemical Society, (Denver, 2011).
25. Invited Oral Presentation - *Hierarchical Macroporous Mesoporous Catalysts for Biodiesel Synthesis*. K. Wilson, International Chemical Congress of Pacific Basin Societies, (Hawaii, 2010).
26. Invited Oral Presentation - *Structure Activity Relations in Solid Base Catalysed Biodiesel Synthesis*. K. Wilson, International Chemical Congress of Pacific Basin Societies, (Hawaii, 2010).
27. Invited Oral Presentation - *Tuneable solid acid catalysts for clean chemical technologies*. K. Wilson, Abstracts of Papers of the American Chemical Society, (Boston, 2010).
28. Invited Oral Presentation - *Structure activity relations in solid base catalysed biodiesel synthesis*. K. Wilson, P.L. Gai, J. Montero, A.F. Lee, Proceedings of 21st North American Catalysis Society Meeting, (San Francisco, 2009).
29. Invited Oral Presentation - *New developments in solid acid and base catalysts for biodiesel synthesis*. K. Wilson, A.F. Lee, J.M. Montero, K. Narashimharao, 5th International Conference on Environmental Catalysis, (Belfast, 2008).
30. Flash presentation and poster - *Tailoring Catalysts for Biodiesel Synthesis*. Wilson K, Gordon Research Conference on Green Chemistry, Bates College, (Maine, 2008).
31. Poster presentation - *Heterogeneous catalysts for clean technology*. K. Wilson, Gordon Research Conference on Heterogeneous Catalysis, Colby Sawyer College, (New Hampshire, 2007).
32. *Environmentally friendly tunable catalysts for biodiesel synthesis*. K. Wilson, A.F. Lee, R.S. Watkins, D.G. Cantrell, K. Narasimharao, 87th Catalysis Society of Japan Annual Meeting, Green and Sustainable Chemistry Symposium, (Osaka, 2007).
33. Invited Oral Presentation - *New solid bases for biodiesel synthesis*. K. Wilson, RSC Conference on Green Chemistry and Catalysis, Robinson College, (Cambridge, 2005).
34. Invited Oral Presentation - *Structure-reactivity relationships in the acidity of sulphated zirconia catalysts for α -pinene isomerisation*. K. Wilson, M.E. Ecomier, A.F. Lee, 18th Canadian Symposium on Catalysis, (Montreal, 2004).
35. Invited Oral Presentation - *Support-mediated alkane activation over Pt-SO₄/Al₂O₃ catalysts*. K. Wilson, D.E. Gawthrope A.F. Lee, Abstracts of Papers of the American Chemical Society, (Philadelphia, 2004).
36. Invited Oral Presentation - *New Catalytic Materials for Clean Technology*. K. Wilson, D.J. Macquarrie, J.H. Clark, Abstracts of Papers of the American Chemical Society, (San Diego, 2001).
37. Invited Oral Presentation - *Novel supported BF₃ solid acid catalysts for environmentally friendly organic synthesis*. K. Wilson, J.K. Shorrocks, J.H. Clark, Europacat IV Proceedings, (Rimini, 1999).
38. Invited Oral Presentation - *SO₂-promoted propane oxidation over Pt(111) and Pt(111)/AlOx*. K. Wilson, C. Hardacre, R.M. Lambert, Abstracts of Papers of the American Chemical Society, (New Orleans, 1996).
39. Invited Oral Presentation - *SO₂-promoted propane oxidation over Pt(111)*. K. Wilson, C. Hardacre, R.M. Lambert, Europacat II Proceedings, (Maastricht, 1995).

F. Patent Applications

1. *Preparation of novel supported BF₃ Complexes* – K Wilson, J H Clark, *World Patent PCT No WO 00/13792*.

2. *Petroleum resins and their production employing feed pre-treatment* - J H Clark, K Wilson, K Shorrocks, K Lewtas, L Garcia - WO2001005856 A1 with Exxon Chemicals.
3. *Petroleum resins and their production with supported catalyst* - J H Clark, K Wilson, K Shorrocks, J Chisem, K Lewtas, L Garcia - WO2001005856 A1 with Exxon Chemicals.
4. *Petroleum resins and their production with BF₃ Catalyst* - J H Clark, K Wilson, K Lewtas, L Garcia - EP1208125 A1 with Exxon Chemicals.
5. *Dual function Cs-doped solid acid catalysts* - GB0706750.7 filed 4/07.
6. *Analytical methodologies for TAG profiling* - GB0707287.9 filed 4/07.
7. *Antibacterial Silver Carbonate Nanoclusters* - GB0800549.8 filed 1/08
8. *Polytungstate Catalysts* - 0464P/WO filed 4/08.
9. *Porous hierarchical substrate* - WO 2016135489 A1

10. REFERENCES

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