Jacob W. Martin

School Address
Department of Physics and Astronomy
Curtin University
Perth WA 6102, Australia
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Personal Address
[redacted]

RESEARCH INTERESTS

I focus on the field of carbon materials science for the clean production of energy and chemicals. I combine computational and experimental techniques to better understand chemical systems and apply this knowledge to pressing problems as well as empowering others to do likewise through teaching and mentoring.

EDUCATION & TRAINING

Forrest Research Fellow, Forrest Research Foundation 2021-current
Department of Physics and Astronomy
Curtin University, Perth, Western Australia
TITLE – Flexing graphene's muscles: Hydrogen capture for clean energy
Mentors: Prof. Craig Buckley & A/ Prof. Nigel Marks

Research Fellow, Cambridge Centre for Carbon Reduction in Chemical Technology 2020
Cambridge Centre for Advanced Research and Education in Singapore, Singapore
Mentor: Prof. Markus Kraft

Doctor of Philosophy, Chemical Engineering 2020
Department of Chemical Engineering and Biotechnology
University of Cambridge, Cambridge, United Kingdom
THESIS – Investigating the role of curvature in the formation and thermal transformations of soot.
Advisor: Prof. Markus Kraft
Thesis Committee: Dr Nils Hansen & Prof. Manish Chhowalla

Master of Science (First Class), Chemical Sciences 2015
University of Auckland, Auckland, New Zealand
THESIS – Bovine mastitis test for somatic cell count on a centrifugal microfluidic disc.
Advisors: Prof. Cather Simpson & Prof. David Williams

Bachelor of Science with First Class Honours, Chemical Sciences and Physics 2013
University of Auckland, Auckland, New Zealand
DISSERTATION – Advancing transient adsorption spectroscopy
Advisor: Prof. Cather Simpson

RESEARCH SUPPORT & FUNDING

Total awarded: $1.1m

Project title withheld due to NDA Fortescue Future Industries PI 2022
(6 months funded postdoc., $195k, $90k equipment)
Accelerating graphitization to improve synthetic graphite Australian Government 2023-2025
Research Training Program (RTP) Stipend Scholarship, Co-supervisor ($60k, 3 yrs)
Electronic nose for microplastics Department of Biodiversity, Conservation and Attractions

[redacted]

Western Australia Co-I (3 weeks $1.5k)

Curtin University Grant Development Funding Travel (Grant Success Panel) PI $4.6k 2022

Flexing graphene's muscles: Hydrogen capture for clean energy Forrest Research Fellowship (2.3% success rate, $287k) 2021-2023

GroLush^{TM}: A comparative study to identify the lowest carbon emission route, for the production of Slow Nitrogen Release Urea Fertiliser. Funded proposal, New Zealand Institute for Minerals to Materials Research Co-I (6 months 336k NZD) 2019

Organised tenders from DELL, SGI & HPE and purchase of $898k worth of supercomputing resources from DELL for Cambridge CARES, Singapore (did not secure funds, not in total) 2017

Golden Polymer for Enriching Biogas to Biomethane funded proposal, Science for Technological Innovation National Science Challenge Seed fund Co-I (3 yrs 241k NZD) 2016

PROPOSALS SUBMITTED

Accelerating graphite formation for batteries using pulse heating Discovery Early Career Researcher Award (submitted DE24 round 1, 1st time)

Project title withheld due to NDA Fortescue Future Industries PI (9 months, $194k, planned 2023)

Driving hydrogen production with high market value porous and nanocarbon products Future Energy Export CRC Project Idea (12 months, $50k, under review)

PUBLICATIONS

Total 34 (12 as 1st author), Citations 795, H-index 17 (source: Google Scholar)

34. Defining graphenic crystallites in disordered carbon: moving beyond the platelet model K. J. Putman, N. A. Marks, M. R. Rowles, C. de Tomas, **J. W. Martin** and I. Suarez-Martinez, *Carbon*, 2023 arXiv: 2212.06354
33. Soot Inception: Carbonaceous nanoparticle formation in flames. **J. W. Martin**, M. Salamanca and M. Kraft, *Progress in Energy and Combustion Science*, 2022
32. On the reactive coagulation of incipient soot nanoparticles. D. Hou, L. Pascazio, **J. W. Martin** Y. Zhou, M. Kraft and X. You, *Journal of Aerosol Science*, 2022
31. π-Diradical aromatic soot precursors in flames. **J. W. Martin**, L. Pascazio, A. Menon, J. Akroyd, K. Kaiser, F. Schulz, M. Commodo, A. D'Anna, L. Gross, and M. Kraft, *Journal of the American Chemical Society*, 2021
30. The role of oxygenated species in the growth of graphene, fullerenes and carbonaceous particles. G. Leon, **J. W. Martin**, E. J. Bringley, J. Akroyd, M. Kraft, *Carbon*, 2021
29. Self-assembly of curved aromatic molecules in nanoparticles. K. Bowal, **J. W. Martin**, M. Kraft, *Carbon*, Carbon, 2021
28. Reactivity of Polycyclic Aromatic Hydrocarbon Soot Precursors: Kinetics and Equilibria. A. Menon, **J. W. Martin**, J. Akroyd, M. Kraft, *The Journal of Physical Chemistry A*, 2020
27. Aromatic penta-linked hydrocarbons in soot nanoparticle formation. L. Pascazio, **J. W. Martin**, A. Menon, D. Hou, X. You, M. Kraft, *Proceedings of the Combustion Institute*, 2020
26. Reactive localized π-radicals on rim-based pentagonal rings: properties and concentration in flames. A. Menon, **J. W. Martin**, G. Leon, D. Hou, L. Pascazio, X. You, M. Kraft, *Proceedings of the Combustion Institute*, 2020
25. The impact of cyclic fuels on the formation and structure of soot. M. Salamanca, M. L. Botero, **J. W. Martin**, J. Dreyer, J. Akroyd and M. Kraft, *Combustion and Flame*, 2020

24. Exploring the internal structure of soot particles using nanoindentation: A reactive molecular dynamics study. L. Pascazio, **J. W. Martin**, K. Bowal, J. Akroyd and M. Kraft, *Combustion and Flame*, 2020
23. Mechanical Properties of Soot Particles: The Impact of Crosslinked Polycyclic Aromatic Hydrocarbons. L. Pascazio, **J. W. Martin**, M. L. Botero, M. Sirignano, A. D'Anna and M. Kraft, *Combustion Science and Technology*, 2019
22. Reactivity of Polycyclic Aromatic Hydrocarbon Soot Precursors: Implications of Localized π-Radicals on Rim-Based Pentagonal Rings. **J. W. Martin**, D. Hou, A. Menon, L. Pascazio, J. Akroyd, X. You and M. Kraft, *The Journal of Physical Chemistry C*, 2019
21. Topology of disordered 3D graphene networks. **J. W. Martin**, C. de Tomas, I. Surarez-Martinez, M. Kraft and N. Marks, *Physical Review Letters*, 2019
20. Sphere encapsulated Monte Carlo: obtaining minimum energy configurations of large aromatic systems. K. Bowal, P. Grančič, **J. W. Martin** and M. Kraft, *The Journal of Physical Chemistry A*, 2019
19. Optical band gap of cross-linked, curved, and radical polyaromatic hydrocarbons. A. Menon, J. A. H. Dreyer, **J. W. Martin**, J. Akroyd, J. Robertson and M. Kraft, *Physical Chemistry Chemical Physics*, 2019
18. An ontology and semantic web service for quantum chemistry calculations. N. Krdzavac, S. Mosbach, D. Nurkowski, P. Buerger, J. Akroyd, **J. W. Martin**, A. Menon and M. Kraft, *Journal of Chemical Information and Modeling*, 2019
17. An assessment of the viability of alternatives to biodiesel transport fuels. R. Kächele, D. Nurkowski, **J. W. Martin**, J. Akroyd and M. Kraft, *Applied Energy*, 2019
16. Dynamic polarity of curved aromatic soot precursors. **J. W. Martin**, A. Menon, C. T. Lao, J. Akroyd and M. Kraft, *Combustion and Flame*, 2019
15. Nanostructure of gasification charcoal (biochar). **J. W. Martin**, L. Nyadong, C. Ducati, M. Manley-Harris, A. G. Marshall and M. Kraft, *Environmental Science & Technology*, 2019
14. Atomic structure and electronic structure of disordered graphitic carbon nitride. H. Lu, Y. Guo, **J. W. Martin**, M. Kraft and J. Robertson, *Carbon*, 2019
13. Partitioning of polycyclic aromatic hydrocarbons in heterogeneous clusters. K. Bowal, **J. W. Martin** and M. Kraft, *Carbon*, 2019
12. Ion-induced soot nucleation using a new potential for curved aromatics. K. Bowal, **J. W. Martin**, A. J. Misquitta and M. Kraft, *Combustion Science and Technology*, 2019
11. Internal structure of soot particles in a diffusion flame: an experimental study. M. L. Botero, Y. Sheng, J. Akroyd, **J. W. Martin**, J. A. H. Dreyer, W. Yang and M Kraft, *Carbon*, 2019
10. Polar curved polycyclic aromatic hydrocarbons in soot formation. **J. W. Martin**, K. Bowal, A. Menon, R. I. Slavchov, J. Akroyd, S. Mosbach and M. Kraft, *Proceedings of the Combustion Institute*, 2019
9. Flexoelectricity and the formation of carbon nanoparticles in flames. **J. W. Martin**, M. Botero, R. I. Slavchov, K. Bowal, J. Akroyd, S. Mosbach and M. Kraft, *The Journal of Physical Chemistry C*, 2018
8. The polarization of polycyclic aromatic hydrocarbons curved by pentagon incorporation: the role of the flexoelectric dipole. **J. W. Martin**, R. I. Slavchov, E. K. Y. Yapp, J. Akroyd, S. Mosbach and M. Kraft, *The Journal of Physical Chemistry C*, 2017
7. Giant fullerene formation through thermal treatment of fullerene soot. **J. W. Martin**, G. J. McIntosh, R. Arul, R. N. Oosterbeek, M. Kraft and T. Söhnel, *Carbon*, 2017
6. A big data framework to validate thermodynamic data for chemical species. P. Buerger, J. Akroyd, **J. W. Martin** and M. Kraft, *Combustion and Flame*, 2017

5. Raman on a disc: high-quality Raman spectroscopy in an open channel on a centrifugal microfluidic disc. **J. W. Martin**, M. K. Nieuwoudt, M. J. T. Vargas, O. L. C. Bodley, T. S. Yohendiran, R. N. Oosterbeek, D. E. Williams and M. C. Simpson, *Analyst*, 2017
4. Can nascent soot particles burn from the inside? P. Grančič, **J. W. Martin**, D. Chen, S. Mosbach and M. Kraft, *Carbon*, 2016
3. The enhancement of chain rigidity and gas transport performance of polymers of intrinsic microporosity via intramolecular locking of the spiro-carbon. J. Zhang, H. Kang, **J. W. Martin**, S. Zhang, S. Thomas, T. C. Merkel and J. Jin, *Chemical Communications*, 2016
2. Gold-sputtered Blu-ray discs: simple and inexpensive SERS substrates for sensitive detection of melamine. M. K. Nieuwoudt, **J. W. Martin**, R. N. Oosterbeek, N. I. Novikova, X. Wang, J. Malmström, D. E. Williams and M. C. Simpson, *Analytical and Bioanalytical Chemistry*, 2016
1. PyTrA: ultra-fast transient absorption data analysis software. **J. W. Martin**, X. Wang, Ivo Siekmann and M. C. Simpson, *International journal of nanotechnology*, 2014

PREPRINTS / UNDER PREPARATION

- Graphite forms via annihilation of screw dislocations. **J. W. Martin**, J. L. Fogg, K. J. Putman, G. Francas, E. P. Turner, N. A. Marks and I. Suarez-Martinez, arXiv:2206.09105
- Injection of charge from non-thermal plasma into a soot forming laminar coflow diffusion flame Y. R. Tan, Y. Zong, M. Salamanca, **J. W. Martin**, J. Dreyer, J. Akroyd, W. Yang, and M. Kraft, c4e-Preprint Series: Technical Report 288
- Portraits of soot molecules reveal pathways to large aromatics, five/seven membered rings and inception through π-radical localization. L. Lieske, M. Commodo, **J. W. Martin**, K. Kaiser, V. Benekou, P. Minutolo, A. D'Anna and L. Gross, under preparation
- Topology of graphitisation. G. Francas, **J. W. Martin**, N. A. Marks and I. Suarez-Martinez, under preparation
- Role of π-radical localisation on thermally stable crosslinks between polycyclic aromatic hydrocarbons. P. Selvakumar, **J. W. Martin**, M. D. Lorenzo, C. Buckley, under preparation
- Invited review for the Carbon Journal on the nanostructural models of disordered carbon, **J. W. Martin**, C. de Tomas, I. Suarez-Martinez, N. A. Marks, Carbon Journal, under preparation

PATENTS

A fluid analytical device, M. C. Simpson, D. E. Williams, M. K. Nieuwoudt, **J. W. Martin**, US Patent App. 16/467,486, 2019

PRIZES AND AWARDS

TOP5 Science Media Residency at the Australian Broadcasting Corporation	2022
Brian Kelly Award early career researcher award at the International Carbon Conference	2022
Funding from the Science Gallery Bengaluru for nanoart exhibition	2022
Danckwerts-Pergamon Prize for the best PhD thesis in the Department of Chemical Engineering and Biotechnology, University of Cambridge	2021
Carbon Journal Thesis Prize for an outstanding Ph.D. thesis in carbon materials science and technology, Carbon's extended advisory board for 3 y	2021
Gaydon Prize for best paper at the International Combustion Symposium, British	2019
Mrozowski Award for best oral presentation by a student at the International Carbon Conference	2019
Sir David Wallace Prize for Best Presentation, Churchill College, Cambridge University	2016
Best Poster Talk at the Nanotec16 conference	2016
NanoDTC Associate Studentship	2016-2018
Cambridge CARES Studentship for PhD research	2016-2018

University of Auckland Masters Scholarship 2014
Winner of Spark Ideas Challenge, University of Auckland 2011
Enviroforum travel prize to EDFA-JET Fusion Experiment at the European Union Competition for Young Scientists 2009

MEDIA COVERAGE

An Atom's Eye View Ockham's Razor Podcast, ABC Radio National Science
How carbon materials can improve solar power, green hydrogen and battery technology Digital article ABC Science, ABC News
Carbon - a vital part of our new energy future The Science Show, Radio National, ABC
ABC Science Friction 2022 Science Quiz Radio National, ABC
Brian Kelly Award Winner Report The British Carbon Group
Three ways to reach climate skeptics TEDx KingsPark Countdown Climate Summit
2021 Carbon Journal Prize Winners Announced Carbon Journal, Elsevier
Jacob Martin awarded Danckwerts-Pergamon Prize for best PhD thesis of 2020 Department of Chemical Engineering and Biotechnology, University of Cambridge
What's in a flame? The surprising mystery of how soot forms Press release, PhysOrg, 2021
Molecular dance that could eliminate soot pollution Press release, PhysOrg, 2021
The topology of disordered 3-D graphenes: Rosalind Franklin's pre-DNA problem untangled Press release, PhysOrg, 2019
Soot forensics: Carbon fingerprints reveal curved nanostructure Press release, PhysOrg, 2018

TEACHING AND MENTORING

Lecturing

CHEM3004 – Analytical Chemistry and Spectroscopy (3rd-year chemistry course) 2021-2022
School of Molecular and Life Sciences, Curtin University
Advanced Molecular Spectroscopy (third of 1-semester course, prepared lectures, exam and assignments, managed through Blackboard)
Teaching innovation – Hands-on shoe box spectrometer laboratory, use of diffraction glasses in lecture demonstrations, Google Slides for student conversations, quantum chemistry and molecular modelling laboratory using ORCA and Avogadro software.
Student feedback – "Jacob is very enthusiastic and helpful. I really enjoyed making the spectrometer as I found that a good way to learn."

CHEM2000 – Physical Chemistry (2nd-year compulsory chemistry course) 2022
School of Molecular and Life Sciences, Curtin University
Quantum Chemistry (third of 1-semester course, prepared lectures, exam and assignments, managed through Blackboard)
Teaching innovation – Lecture demonstrations including 3D chemical models using anaglyph glasses and Oculus Rift 2 virtual reality headset, Google Slides for student conversations, python software based labs via the web browser enabling interactive simulations both classical and quantum.
Student feedback – "I was worried about this unit, but it was pretty good! Raffaella, Paolo and Jake were all super helpful and willing to help. It was great that they all replied quickly on campuswire/email. They were approachable too. I think my numeracy skills have improved and I have learnt basic coding, which will be useful."
"The learning outcomes were clearly defined and all lecturers are incredibly knowledgable and helpful when asked."

CHEM750 – Advanced Topics in Chemistry (Honours level chemistry course) 2
School of Chemical Sciences, University of Auckland

Guest Lecturer: Soft and hard modelling approaches of multidimensional data

Tutoring

CHEM210 – Physical and Materials Chemistry (2nd-year chemistry course) 2012
School of Chemical Sciences, University of Auckland
Developed a maths of chemistry online course (developed into current course CHEM254 - Modelling Chemical Processes).
Teaching innovation - Online pencast lectures and interactive activities through Bestchoice website, in-person weekly workshops.

Physical Chemistry Coordinator for the Tuākana programme 2012 – 2014
School of Chemical Sciences, University of Auckland
Involved coordinating a weekly workshop tutorial for Māori and Pasifika students at the second and third-year level. One of the students that came through the programme is now a lecturer at AUT.
Teaching innovation - Smartboard utilisation, interactive hands-on activities using molecular models and student peer-to-peer tutoring.

Mentoring

Graduate level

DR-PHYS – PhD Physics 2021–2024
Department of Physics and Astronomy, Curtin University
Co-supervisor for two Future Energy Export CRC PhD student with projects tentatively titled *Novel approaches for hydrogen production through methane pyrolysis on carbon catalysts* and *Solutions to green hydrogen gas transport*.

PHYS4001 – Physics Honours Major (BSc) (Honours) Dissertation 2022
Department of Physics and Astronomy, Curtin University
Primary supervisor for an Honours physics student for a year-long project and dissertation titled *A Molecular Dynamics Study of the Impact of Screw Dislocations and Mesophase Structure on Graphitization*.

CHEM4000 – Chemistry Honours Major (BSc) (Honours) Dissertation 2023 UPCOMING
School of Molecular and Life Sciences, Curtin University
Primary supervisor for an Honours physics student for a year-long project and dissertation.

ENR600 – Chemical Engineering Graduate Research Project 1 2023 UPCOMING
WA School of Mines: Minerals, Energy and Chemical Engineering, Curtin University
Primary supervisor for an Honours physics student for a year-long project and dissertation.

PhD Chemical Engineering 2017–2020
Department of Chemical Engineering and Biotechnology, University of Cambridge
Unofficial co-supervision of three PhD students. My PhD supervisor wrote in my recommendation letter for the *Danckwerts-Pergamon Prize*, "Jacob was an independent student working with very little input from supervisors as well as supervising other PhD students and postdocs alike."

Undergraduate level

CHEM3006 – Chemistry Research Methods (3rd-year chemistry course) 2022
School of Molecular and Life Sciences, Curtin University
Primary supervisor for student, 1-semester project titled *Molecular Dynamics Simulations for Generating Atomisitic Models of Activated Carbon with Hydrogen and Oxygen*.

NPSC2000 – Science Professional Practice (3rd-year advanced science) 2021-

Department of Physics and Astronomy, Curtin University
Supervised three summer students for 6-week project.

NPSC2001 – Research Industry and Entrepreneurship in Science (2nd-year advanced science) 2022
Primary supervisor for a 3-week project with a second-year chemistry student titled *Cardboard Box Chemistry: Low Cost, Open Source Fluorometer, A Proof of Concept*. The student then secured a summer project that I am also supervising with Innovation Central Perth (ICP).

NPSC3000 – Research Industry and Entrepreneurship in Science (3rd-year advanced science) 2022
Department of Physics and Astronomy, Curtin University
Supervised project student for 2-semester project titled *Hydrogen Storage Within Nanoporous Carbons: Role of Nanoconfinement Effects and Advanced Visualisation in VR*.

PHYS3003 – Physics project 1 (3rd-year physics course) 2021
Department of Physics and Astronomy, Curtin University
Primary supervisor for a 2-semester project titled *Modelling Argon and Hydrogen Adsorption in Activated Carbon*.

CHEM310 – Structural Chemistry and Spectroscopy 2014
School of Chemical Sciences, University of Auckland
Supervised student project in Photon Factory group.

OTHER PROFESSIONAL ACTIVITIES

Chartered Chemist of the Royal Australian Chemical Institute
Member of the Australian Institute of Physics
Member of the Australia New Zealand Section of The Combustion Institute
Member of the Australian Carbon Society
Member of ISCAST and NZCIS
Member of the Forrest Research Foundation (FRF) Researchers Committee
Senior Resident of Forrest Hall
Advisory editor to the Carbon Journal
Accredited Standard Mental Health First Aider

Organiser of the International Metal-Hydrogen Conference 2022
Organiser of the Novel Materials Synthesis; an ideal Qantum computing use case? 2022
Policy workshop with Dr Cathy Foley Australia's Chief Scientist
Organiser of the International Carbon Webinar 2021
Organiser of the Western Australian Computational Chemistry Conference 2021
Organiser of the Science Pathways Conference 2021
Participant in the International Science, Technology, Prototyping, Policy and Practice workshop 2019

PRESENTATIONS

Invited public talk for the Ockham's Razor ABC Podcast, WA Museum 2023
Virtual reality turns scientists into Antman
Talk at the Western Australian Branch of the Royal Australian Chemical Institute, Perth 2023
The (Updated) Chemical History of a Candle
Talk at the International Conference on Advanced Materials and Nanotechnology, NZ 2023
Peering into the Computational Microscope: Insights from 3D printing through to virtual reality
Talk at the Western Australian School of Mines, Kalgoorlie 2022
Accelerating graphite formation for batteries using pulse heating
Invited talk at the 4th International Conference on Emerging Advanced Nanomaterials 2022
Observing graphite form through annihilation of screw dislocations

Invited talk at University of Newcastle Chemistry Department 2022
Peering into the computational microscope
Talk at UNSW Chemistry Department 2022
Peering into the computational microscope
Talk for University of Sydney Chemical Engineering Lecture Series 2022
Peering into the computational microscope
Talk for Flame Chemistry Workshop 2022
The unique chemistry of aromatic π-diradical soot precursors
Invited talk for RACI National Congress 2022
The surprising chemical history of a candle: role of aromatic π-diradicals
Invited talk for the World Conference on Carbon 2022
Graphite formation through annealable topological defects
Review of soot and carbon black formation: role of aromatic π-diradicals
Visualising carbon models from virtual reality to 3D printing
Talk for Australian Hydrogen Research Network 2022
No hydrogen without carbon: advanced carbon materials for the hydrogen economy
Talk for AIP Summer Meeting 2021
Topological analysis of disordered 3D graphenes
Poster for Molecular Modelling Conference (MM2021) 2021
Adding another dimension to graphene
Talk for Western Australian Computational Chemistry Conference 2021
Reactive π-diradicals found in soot forming flames
Talk for PhysChem Festival 2021
Reactive π-diradicals found in soot forming flames
Talk for Carbon Webinar 2021
Reactive π-diradicals found in soot forming flames
Talk for Australian Combustion Symposium 2021
Reactive π-diradicals found in soot forming flames
Invited talk for TEDxKingPark Countdown event 2021
Three ways to reach climate skeptics
Talk at University of New South Wales 2021
Soot inception: carbonaceous nanoparticle formation in flames
Talk at the Cambridge Particle Meeting 2021
Carbonaceous nanoparticle formation in flames
Invited talk at the University of Western Australia Physics Seminar Series 2021
The surprising physics of a candle
Invited talk at the 5th International (and 1st Virtual) Flame Chemistry Workshop 2021
Molecular insights into carbonaceous nanoparticle formation in flames
Talk at Say "Hy" to Hydrogen (industry organised) 2021
No hydrogen without carbon
Talk at the 3rd Western Australian Computational Chemistry Conference 2020
Rim bonding: localised π-radicals allow for stacked σ-dimers
Invited talk at the 4th E2S2-CREATE Biochar Workshop 2020
Why is biochar/charcoal unable to thermally transform into graphite?
Invited talk at the CREATE Symposium - *Combustion science for climate solutions* 2019
Talks at the Carbon Conference 2019
Topology of disordered graphene networks
Understanding the lack of fullerenes in fullerene-like carbons
Flexoelectricity and the electrical aspects of carbon formation in flames
Talk at Penn State University - *Topology of dis graphene networks* 2019
Talk at MIT - *Flexoelectricity and the electrical of carbon formation in flames* 2019
Talk at the Pint of Science Singapore event 2019
Confessions of a pyromaniac: combustion science for climate solutions
Talk at International Community School Singapore

Science show

Poster at the 9th International Conference on Advanced Materials and Nanotechnology 2019
Adding another dimension to graphene: topology of 3D graphene networks

Invited talk at the 3rd E2S2-CREATE Biochar Workshop 2019
Insights into the nanostructure of biochar: ribbon-like or fullerene-like

Talk at the 37th Internationational Symposium on Combustion 2018
Polar curved polycyclic aromatic hydrocarbons in soot formation

Talk at Curtin University - *Carbon at the nanoscale* 2018

Talk at University of Otago - *Polar aromatic hydrocarbons* 2018

Talk at University of Canterbury - *Carbon at the nanoscale* 2018

Talk at University of Auckland - *Carbon at the nanoscale* 2018

Poster at Carbon conference - *Impact of fullerene-like structures in carbon materials* 2017

Talk at the Joint British, Spanish and Portuguese Section Combustion Meeting 2016
Dynamic gas interactions with polycyclic aromatic clusters

Poster at Cambridge Particle Meeting - *Dynamic gas interactions with polycyclic aromatic clusters* 2016

Poster at IChemE ChemEngDay - *Dynamic gas interactions with polycyclic aromatic clusters* 2016

Poster and talk at the Nanotec16 conference 2016
Giant fullerene growth through coalescence in arc-discharge soot

REFERENCES

Prof. Markus Kraft, Professor of Chemical Engineering, University of Cambridge – mk306@cam.ac.uk
Prof. Cather Simpson, Professor of Chemistry, University of Auckland – c.simpson@auckland.ac.nz
Prof. David Williams, Professor of Chemistry, University of Auckland – david.williams@auckland.ac.nz
Dr Nigel Marks, Associate Professor of Physics, Curtin University – n.marks@curtin.edu.au