Best Outstanding Contribution to Research Impact

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Position: Research Fellows
Research area: Materials science; plastic recycling; sustainability

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My research career started in my home country of Australia, where I completed a BSc in chemistry and PhD in polymer chemistry from the University of Queensland, before taking the plunge and moving to the UK in 2016 to take up a postdoc position at the University of Nottingham. Whilst there I collaborated on various research projects with applications ranging from greener routes to energy storage materials, sustainable cosmetics, and low energy electronic displays. Before transitioning to my current role as Research Fellow, I joined Prof Michael's Shaver research group at The University of Manchester as a KTP Associate back in mid-2019, where I worked on developing more sustainable resins for the construction industry. As a Research Fellow since 2021 I am responsible for delivering a portfolio of projects co-developed with SMEs across Greater Manchester, and am co-director of a not-for-profit spin-out company tracking plastic recycled content using fluorescent markers.

In your own words, please describe your outstanding research whether that be an output, impact, contribution to the environment:

For businesses looking to make more sustainable choices, understanding where and how to access the best, impartial advice can often be overwhelming. Working within the SMI Hub gives me the opportunity to provide SMEs across Greater Manchester with meaningful, impartial materials and sustainability expertise, allowing them to make more environmentally, economically and socially sustainable choices. Along with my colleague Dr Guilhem De Hoe, we strive to deliver research excellence in tandem with fostering impactful industry partnerships in order to deliver the core capabilities of this initiative – providing environmentally sustainable advice; performing materials assessment to inform sustainable choices; and driving innovation through our independent research projects, addressing real-world problems in plastics. The independent research component of my role is dedicated to a non-profit spin-out called ReCon^2, whose technology is a novel method of quantifying recycled content in plastics and packaging using fluorescent markers.

What motivated you to do this?

Earlier in my career I had a strong desire to pursue a more traditional, purely academic career pathway. However, following my PhD, I found myself resonating more strongly with larger scale industry sponsored projects with clearly defined and tangible deliverables related to research translation and innovation. I experienced this type of research in more depth whilst undertaking an industry sponsored KTP project, and then as Research Fellow with the SMI Hub we have helped deliver transformative projects with over 150 industry partners, leading to spin-outs, policy changes, sector-based packaging changes, and more. More than anything I find myself experiencing a strong sense of fulfilment and satisfaction at the end of each project when we get the opportunity to take a step back

and see the positive impact our research has on the lives of others, often not just within the businesses themselves, but also the wider community and environment.

What are you planning to do next?

Working on numerous industry projects in recent years – in particular our recent not-for-profit spin-out undertaking – has kindled my passion for leading highly application focussed research projects. I have a strong desire to transition into a full time research and/or managerial role within the plastics industry in the short-to-medium term. Over the next 12 months, ReCon^2 will undertake a series of multi-tonne proof-of-concept trials to stress test the technology in the lead up to our launch date in mid-2023. This is being done through contributions from a consortium of sponsors across the packaging, recycling, retail, and manufacturing sectors – who will help co-develop the technology and ensure it is fit-for-purpose. I intend to take up a leadership position at ReCon^2 in the second half of next year and steer the company through its initial years as a fully operating business, including managing our transition into an off-site laboratory space in Manchester.